

**APPENDIX C:**

**RESPONSE TO COMMENTS RECEIVED AFTER PUBLIC  
WORKSHOP (ORIGINAL RULE CONCEPT)**

**Comments Received from October 3, 2024 to February 7, 2025**

**PUBLIC WORKSHOP**

Staff held the Public Workshop on October 3, 2024, to provide a summary of preliminary PAR 1111 and PAR 1121 based on the original rule concept. This appendix includes 16 comments expressed verbally at the Public Workshop and 108 comment letters received in the period of October 3, 2024, to February 7, 2025, as summarized in the table below. Staff response is provided for each comment. For comments received after February 7, 2025, on the new rule concept and staff responses, please see Appendix B.

**Table Appendix C-1: Comments Letters Received from October 3, 2024, to February 7, 2025**

Comment Letter	Commentor Name	Representing	Date Received
1	Fran Inman, David Fleming, Tracy Hernandez, David Englin	BizFed	10/3/2024
2	Kory Griggs	Indoor Weather Inc.	10/4/2024
3	Allen Mairs	Self	10/10/2024
4	Marc D. Neufcourt	Rinnai America Corporation	10/11/2024
5	Charles Miller, David Diaz MPH, Claire Robinson, Tomas Castro, Lisa Swanson, Christopher Chavez, Christy Zamani, Fernando Gaytan, Jorge Rivera, Margo A. Reeg, Tori Kjer, Charlotte Matthews, Sharon Ungersma, Kim Orbe, Sam Fishman, Anne Pernick, Stuart Wood PhD, Ben Stapleton	Los Angeles Climate Reality Project, Active San Gabriel Valley, Amigos de los Rios, Climate Action Campaign, Climate Reality Project Orange County Chapter, Coalition for Clean Air, Day One, Earthjustice, Healing and Justice Center, League of Women Voters of Los Angeles County, Los Angeles Neighborhood Land Trust, RMI, San Fernando Valley Climate Reality Project, Sierra Club Angeles Chapter, SPUR, Stand.earth, Sustainable Claremont, USGBC California	10/11/2024
6	Ann Stalwick, Chana Nevo	Self	10/14/2024
7	Steve Pearson	DAUM Commercial Real Estate Services	10/15/2024
8	Dennis L. Sandoval	DAUM Commercial Real Estate Services	10/15/2024
9	Elizabeth Elliott	Self	10/14/2024
10	Gregory Rice	Self	10/14/2024
11	Bob Helbing	Air-Tro Heating & Air Conditioning	10/14/2024
12	Bernard Cane	Self	10/15/2024
13	Raquel J. Comstock	Self	10/15/2024
14	Turner White	DAUM Commercial Real Estate Services	10/15/2024
15	Josh Leite	ECM Management LLC	10/15/2024
16	Heather Collins	Self	10/15/2024
17	Nancy Hoskins	Self	10/15/2024
18	C.C. Song	Clean Power Alliance of Southern California	10/16/2024

Comment Letter	Commentor Name	Representing	Date Received
19	Paul Granillo	Inland Empire Economic Partnership	10/16/2024
20	Jeffrey Ball	Orange County Business Council (OCBC)	10/16/2024
21	Rosalie Barcinas	Southern California Edison	10/16/2024
22	David L. Nearing	Self	10/16/2024
23	Kory Griggs*	Indoor Weather Inc.	10/17/2024
24	Jeanine Just	Self	10/17/2024
25	Fran Inman, David Fleming, Tracy Hernandez, David Englin	BizFed	10/17/2024
26	Ken Belding	Empire Comfort Systems	10/17/2024
27	Nicole Colantonio	Air-Conditioning, Heating, & Refrigeration Institute	10/17/2024
28	Luis Portillo	San Gabriel Valley Economic Partnership	10/17/2024
29	Jason Thomas	Carrier	10/17/2024
30	Alise L.H. Davis	Self	10/17/2024
31	Matthew Doss	Cypress Land Company	10/17/2024
32	Timothy Jemal	NAIOP SoCal	10/17/2024
33	James Phillips	Rheem Manufacturing Company	10/17/2024
34	Kim Hornburg	Self	10/17/2024
35	Bradford White Corporation (BWC)	Bradford White Corporation (BWC)	10/17/2024
36	Cliff Hamlow	Self	10/17/2024
37	Kevin Barker	Southern California Gas Company (SoCalGas)	10/17/2024
38	Chris Jackson	NAI Capital Commercial	10/29/2024
39	Courtney Wing	Newcastle Partners	10/29/2024
40	Robert S. Glass	Daikin Comfort Technologies Manufacturing, L.P.	10/31/2024
41	Fran Inman, David Fleming, Tracy Hernandez, David Englin	BizFed	10/31/2024
42	Elle C. Chen	Asian Pacific Environmental Network (APEN)	12/4/2024
43	Robina Suwol	California Safe Schools	12/6/2024
44	Jane Williams	California Communities Against Toxics	12/10/2024
45	Dr. Gengmun Eng	Self	12/10/2024
46	Cheryl Auger	Ban SUP (Single Use Plastic_	12/10/2024
47	Stephanie Pincetl	Self	12/11/2024
48	Laurene von Klan, Kent Strumpell	Climate Action Santa Monica	12/11/2024
49	Michelle Kim	Shared Streets	12/11/2024

Comment Letter	Commentor Name	Representing	Date Received
50	Paul Little	The Board of Directors of the Pasadena Chamber of Commerce and Civic Association	12/12/2024
51	David Diaz, MPH	ActiveSGV	12/13/2024
52	Will Barrett	American Lung Association	12/12/2024
53	Evan Gillespie	Industrious Labs	12/12/2024
54	Charles Miller, Lisa Swanson, Sharon Ungersma	Los Angeles Climate Reality Project, Climate Reality Project Orange County Chapter, San Fernando Valley Climate Reality Project	12/13/2024
55	Chris Chavez	Coalition for Clean Air	12/11/2024
56	Sean Armstrong	Redwood Energy	12/11/2024
57	Marc Carrel	Breathe Southern California	12/11/2024
58	Gracyna Mohabir	California Environmental Voters	12/12/2024
59	Cristhian Tapia-Delgado	Pacific Environment	12/12/2024
60	Eli Lipmen	Move LA	12/13/2024
61	Kim Orbe	Sierra Club	12/13/2024
62	David Levitus, Ph.D.	LA Forward Institute	12/12/2024
63	Christy Zamani	Day One	12/13/2024
64	Fernando Gaytan	Earthjustice	12/13/2024
65	Patricia Pipkin	Self	12/13/2024
66	Stuart Wood Ph.D.	Sustainable Claremont	12/13/2024
67	Tori Kjer	Los Angeles Neighborhood Land Trust	12/13/2024
68	Jasmin Vargas	Jobs to Move America	12/13/2024
69	Julia May	Communities for a Better Environment (CBE)	12/13/2024
70	David Martinez	Climate Action Campaign	12/13/2024
71	Marven E. Norman, MPA	Center for Community Action and Environmental Justice (CCA EJ)	12/13/2024
72	Elise Kalfayan	Glendale Environmental Coalition	12/12/2024
73	Margo A. Reeg	League of Women Voters of Los Angeles County	12/13/2024
74	Theral Golden	West Long Beach Association	12/13/2024
75	Cynthia Babich	Del Amo Action Committee	12/13/2024
76	Elizabeth Reid-Wainscoat	Center for Biological Diversity	12/13/2024
77	Jorge Rivera	Healing and Justice Center	12/13/2024
78	Catalina Gonzalez	Center for Progressive Reform	12/13/2024
79	Brian Tisdale	City of Lake Elsinore	12/13/2024
80	Jeffrey Ball	Orange County Business Council	12/18/2024
81	Henry Rogers	Harbor Association of Industry and Commerce	12/18/2024
82	Henry Rogers	Harbor Association of Industry and Commerce	12/18/2024

Comment Letter	Commentor Name	Representing	Date Received
83	Tim Hepburn	City of La Verne	12/18/2024
84	Fernando Gaytan, David Diaz, Jane Williams, Robina Suwol, Christopher Chavez, Elizabeth Reid-Wainscoat, Ana Gonzalez, Lisa Swanson, Laura Garcia-Santiago, Charles Miller, Eli Lipmen, Hilary Firestone, Cristhian Tapia-Delago, Sharon Ungersma, Kimberly Orbe, Anne Pernick, Sam Fishman, Ben Stapleton	Earthjustice, Active San Gabriel Valley, California Communities Against Toxics, California Safe Schools, Coalition for Clean Air, Center for Biological Diversity, Center for Community Action & Environmental Justice, Climate Reality Project Orange County Chapter, Communities for a Better Environment, Los Angeles Climate Reality Project, MoveLA, Natural Resources Defense Council, Pacific Environment, San Fernando Valley Climate Reality Project, Sierra Club, Stand.earth, SPUR, USGBC California	12/18/2024
85	Kimberly Caceres	South Bay Association of Chambers of Commerce	12/18/2024
86	Mendell L. Thompson	City of Glendora	12/18/2024
87	Jeremy Harris	Long Beach Area Chamber of Commerce	12/19/2024
88	Kyle Bergeron	A.O. Smith Corporation	12/19/2024
89	Evan Trubee	Self	12/19/2024
90	Karen Hawley	Self	12/19/2024
91	Arlene Wohlgemuth	Self	12/19/2024
92	Victor Reyes-Morelos	Valley Industry & Commerce Association	12/20/2024
93	Barbara Rohlf	Self	12/29/2024
94	Mel Foley	Self	1/2/2025
95	Arnold Gregg	Self	1/2/2025
96	Rae Aaselund	League of Women Voters of Pasadena	1/7/2025
97	Nicole Reynolds, Jim Reynolds	Self	1/15/2025
98	Ray Marquez	San Bernardino Council of Governments	1/24/2025
99	Art Bennett, Brian Johsz, Ray Marquez, Peter Rogers	City of Chino Hills	1/31/2025
100	Mona Clark	Self	1/4/2025
101	Tom Quast	Self	1/4/2025
102	Edwin Gow	Self	1/9/2025
103	Frank J. Navarro	City of Colton	1/16/2025
104	Dave Mock	Self	1/25/2025
105	Joanne Genis	Self	2/1/2025
106	Vamsi Kotla	ReMo Homes	2/6/2025
107	Tim Hepburn	City of La Verne	2/6/2025

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Comment Letter	Commentor Name	Representing	Date Received
108	Alexandria Helmer	Self	2/10/2025

**Comment PW-1: Kory Griggs (Indoor Weather)**

The majority of the 13 percent of homes in the South Coast AQMD that have furnaces without AC are homes located in colder climates which have high cost-effectiveness.

Using rental equipment allowed by alternative compliance options for situations such as emergency replacements due to a sudden unit failure may pose a financial burden to the owners and operators. The costs of installing the short-term replacement with rental equipment may include the costs of permits, installation, and removal of the natural gas-fired unit. Enforcement for removal of rental water heaters will not be effective.

*Response to Comment PW-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. By this new rule concept, consumers may opt for gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.

For consumers who choose a zero-NOx emission unit, staff acknowledges the higher incremental costs when replacing only a furnace without simultaneous replacement of a cooling system, and cooling systems are less common in high-altitude areas. Staff has revised the rule proposal, and more information on high altitudes can be found in Response to General Comment 8.

**Comment PW-2: Michael Corbett (Bradford White)**

Recommend funding and developing a program to provide temporary rental water heaters to offset the costs of installation and removal of rental units.

Recommend clarifying that the information required for the annual report is to be kept confidential.

*Response to Comment PW-2:*

Staff has revised the rule proposal which no longer includes the provision for temporary rentals. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes a manufacturer alternative compliance option for zero-NOx emission sales targets, allowing for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

With the new rule concept, the revised PAR 1111 and PAR 1121 have removed previously proposed alternative compliance options and the associated annual report requirement. The new rule concept includes reporting requirements and any information designated by the manufacturer as confidential in the annual report will be kept confidential by the South Coast AQMD. Information submitted to the Executive Officer may be designated as confidential under the provisions of the California Public Records Act. The designation must be clearly indicated on the reporting form, identifying exactly which information is deemed confidential. The South Coast AQMD's Guidelines for Implementing the California Public Records Act<sup>(1)</sup>, which were adopted by the Governing Board on May 6, 2005, and amended on July 5, 2013, specifically with reference to trade secrets, adequately

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<sup>(1)</sup> <https://www.aqmd.gov/docs/default-source/default-document-library/Guidelines/pr-guidelines.pdf>

protect confidential information from misappropriation. The South Coast AQMD will request a justification from the entity claiming confidential information and evaluate the justification, any other information at its disposal, and determine if the justification supports the claim that the material is in fact trade secret. If the claim of confidentiality is not meritorious or is inadequately supported by the evidence, the South Coast AQMD shall promptly notify, by certified mail and email, the entity who claimed confidential status that the justification is inadequate and that the information will be released after 21 calendar days from the date of such notice unless the person claiming trade secret brings a legal action to preclude such release. Staff understands that sales volume data is considered as business confidential data and is cautious to protect that data. Staff has modified the rule language for the clarity of annual report requirement and included an explanation of this in Chapter 4.

**Comment PW-3: Jessi Davis (SoCal Gas)**

Recommend holding another meeting detailing the methodology for the cost-effectiveness analysis to understand the direct costs absorbed by owners and operators. Clarify if the technology check-in would be only for space heating since the proposed compliance date for PAR 1121 is January 1, 2027, and the proposed technology check-in is after the compliance date on June 1, 2027.

*Response to Comment PW-3:*

The major components of the cost-effectiveness analysis included capital costs, emission reductions, discount rate, and equipment useful life. Staff's explanation for the cost-effectiveness analysis can be found in Chapter 2 of this staff report and Response to General Comment 6. Staff discussed the cost-effectiveness analysis in previous working group meetings and is available to provide more explanation at individual meetings with stakeholders.

Staff will provide updates/technology check-in to the Stationary Source Committee prior to major milestones in the rules, per Stationary Source Committee direction. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Manufacturers that opt to enroll in this alternative compliance option will submit a plan no later than November 1, 2026. The proposed technology check-in will incorporate the manufacturer enrollment information.

**Comment PW-4: Bob Helbing (Air-Tro)**

Reduction of 10 tons of NOx per day would not significantly affect overall NOx emissions, which is a total of 400 tons per day.

*Response to Comment PW-4:*

The 2022 Air Quality Management Plan emissions inventory lists the total 2018 NOx emissions from stationary and area sources as 60 tpd, whereas the mobile source emissions is 306 tpd. The South Coast AQMD does not regulate mobile sources, therefore, it is only proper to compare the NOx levels to emissions of other sources under our regulatory authority. The proposed amended rules, by the new rule concept, would effectively reduce the stationary and area source emissions by 10.2 percent. Staff recognizes the need to



pursue emission reduction by PAR 1111 and PAR 1121 to address the air quality needs of the South Coast AQMD.

**Comment PW-5: Mihran Roumaja (NAIOP Commercial Real Estate Development Association)**

Encourage all costs for economic impact analysis to be considered.

The proposed rules assume electric utility providers would be able to provide sufficient electrical supply and there are concerns that the current electrical system does not have the capacity to meet the additional demand due to the rules.

*Response to Comment PW-5:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

In addition to the cost-effectiveness analysis detailed in Chapter 2, staff has prepared a Draft Socioeconomic Impact Assessment that will be made available 30 days prior to the Public Hearing. Please find more information on the cost-effectiveness analysis in Response to General Comment 6.

Staff recognizes the importance of electric grid reliability not only for zero-emission technologies, but also natural gas technology, which often require electricity to operate. Please find more information on the electric grid in Response to General Comment 3.

**Comment PW-6: Audry Egger (Inland Empire Economic Partnership (IEEP))**

Concerns about PAR 1121 with increased costs to residents and small businesses due to the rule and requesting more clarity on the economic feasibility.

*Response Comment PW-6:*

The new rule concept provides further flexibility for consumers. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability and will not expand to large size spacing heating units. PAR 1111 and PAR 1121 will be less likely to impact small businesses.

Regarding the previous rule concept, prior to the new rule concept, staff acknowledges the higher upfront cost in many zero-emission installations. However, the lower annual operational costs are anticipated based on the fuel price estimates based on a combination of CEC's 2023 Integrated Energy Policy Report and Energy Information Administration national level forecasts. The socioeconomic analysis estimates the overall unit lifetime savings because the lower operational costs would offset the higher upfront costs.

Federal, state, and local incentives could offset some upfront costs for zero-emission appliances. South Coast AQMD is expecting to launch the Go Zero incentive program in 2025 and to allocate 75 percent of its funding for overburdened communities identified by CalEnviroScreen, which will help target the communities that would need additional financial assistance. Moreover, the Go Zero incentive program is allocating funds for single family homes, multifamily homes, and small businesses.

**Comment PW-7: Xico Manarolla (Clean Power Alliance (CPA))**

Consumers should be educated about PAR 1111 and PAR 1121 and their potential impacts. Clean Power Alliance urges staff to coordinate with community partners. Staff should ensure that sufficient funding is provided to disadvantaged communities. Recommend permitting to be streamlined.

*Response to Comment PW-7:*

PAR 1111 and PAR 1121 were developed through a public process that began in the last quarter of 2023. Staff has enhanced public outreach for the rule development based on similar comments received. For further discussion on outreach, please see Response to General Comment 5.

By the new rule concept, manufacturers enrolled in the new manufacturer alternative compliance option will pay mitigation fee for selling gas units which could be a revenue stream for Go Zero incentive program. This incentive program will continue to have a focus on overburdened communities.

**Comment PW-8: Victor Reyes (Valley Industry and Commerce Association (VICA))**

The electrical upgrades required for PAR 1111 and PAR 1121 will place an excessive financial strain on commercial and multifamily property owners, which can reduce the number of affordable housing units. Utility costs underestimated in cost-effectiveness analysis. Requests to delay PAR 1111 and PAR 1121.

*Response to Comment PW-8:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability and will not expand to large size space heating units. PAR 1111 and PAR 1121 will be applicable to small size units typical for residential use. It is the consumers' individual choices if they install small size units in commercial and multifamily properties.

Staff gathered cost data for various types of furnaces and water heaters for the cost-effective analysis described in Chapter 2 of this report. The required electrical upgrades are considered in the costs to retrofit a zero-emission appliance. Further, Chapter 2 provides discussion on new and emerging technologies that are less likely to require a panel upgrade. Some examples are 120V plug-in heat pump water heaters, portable heat pumps for space heating/cooling, and multi-function heat pumps for water heating and space heating/cooling. For further discussion on cost, please see Response to General Comment 2.

If consumers elect to install zero-NOx emission units in commercial and multifamily properties, such properties that already rely on AC for cooling are not anticipated to need electrical upgrades. If the electrical system can supply sufficient power to operate an AC, it can also support a heat pump system that both cools and heats. The addition of zero-emission water heater will add to the demand; however, 120v units are available, designed for building retrofits, and can be plugged into a standard outlet.

On the other hand, many installations in commercial and multifamily properties are subject to Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters which was adopted in June 2024 for zero-emission standards. Please refer to the Rule 1146.2 Public Hearing documents which include the staff report and socioeconomic impact assessment which contains an analysis related to costs.<sup>(2)</sup>

Staff understands the costs associated with retrofitting zero-emission appliances and anticipates that the adoption of the amended rules will send a market signal to manufacturers, which will, in turn, drive overall costs down. Additionally, federal, state, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help alleviate the financial burden. Staff recognizes the need to pursue emission reductions with an earlier timeframe to address the air quality needs of the South Coast AQMD and does not suggest a further delay of the public hearing. Staff is committed to monitoring the rule implementation after rule adoption, providing periodic updates, and conducting technology check-in(s).

**Comment PW-9: Peter Whittingham (LA BizFed)**

Promotion of shared circuit 120V heat pump water heaters and PAR 1121 proposed compliance date for existing buildings for January 1, 2027, are of concern. BizFed plans to send independent study results on 120V heat pump water heaters. Independent study states that 120V shared circuit heat pump water heaters and 240V heat pump water heaters lack the reheating capabilities of a natural gas-fired water heater. Compliance dates should align with electric vehicle fleets, which is 2035.

*Response to Comment PW-9:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands that the first hour rating and recovery time of a shared circuit 120V heat pump water heater is different from its natural gas-fired counterpart with the same tank volume. Oftentimes, heat pump water heater manufacturers recommend sizing up the tank volume to match the first hour rating of the current natural gas-fired water heater. Since several heat pump water heater manufacturers have different installation requirements, staff recommends consulting the manufacturer's recommendations.

South Coast AQMD establishes BARCT limits based on technical feasibility and cost effectiveness. Zero-emission technologies are available and in operation today. The future effective dates would allow time for the transition and help mitigate the cost impact. The rule will apply upon appliance replacement; therefore, the emission reductions will occur gradually. Staff recognized that cost-effectiveness of some categories by the original rule concept are over the 2022 AQMP screening threshold. The new manufacturer alternative compliance option allowing NOx-emitting units satisfies the direction set forth by 2022 AQMP addressing higher cost-effectiveness categories for zero-NOx emission standards.

These emission reductions are critical to comply with National Ambient Air Quality Standards. Further, because the South Coast AQMD is designated as an “extreme”

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<sup>(2)</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf>

nonattainment area for ozone, our rules cannot be less stringent than another air district's rule, unless they are infeasible. . BAAD has compliance dates for space heating in 2029 and for water heaters starting in 2027. CARB is also in the rule development for zero-emission space and water heaters, proposing a similar implementation timeline.

**Comment PW-10: Ken Belding (Empire Comfort Systems)**

Gas heating products are essential for backup heating for those that have a furnace without AC. Recommend exempting high altitude homes that have a furnace and no AC.

*Response to Comment PW-10:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please see Response to General Comment 8 for further discussion on high altitudes. Staff will re-assess the technologies and costs through a technology check-in and provide updates to the Stationary Source Committee.

**Comment PW-11: Jed Holtzman (RMI)**

Heat pump technology has evolved and cold climate heat pump technology is currently utilized in cold climates successfully. Gas-fired residential appliances emit more than gas fired by gas power plants. Alternative compliance option for 24-month rental unit extends compliance date.

*Response to Comment PW-11:*

Staff agrees with the insight on heat pump technology. Heat pump technology that operates in cold climates can be found through the Northeast Efficiency Partnerships website<sup>(3)</sup>, where they list heat pumps that can operate down to negative 25 degrees Fahrenheit.

Staff has revised the rule proposal which no longer includes the provision for temporary rentals. The new rule concept for PAR 1111 and PAR 1121 provide flexibility for compliance by including a manufacturer alternative compliance option with compliance targets for zero-NOx emission sales.

**Comment PW-12: Wes Reutimann (Active San Gabriel Valley)**

Support of staff's efforts in the rulemaking process and urge staff to amend rule in a timely manner.

*Response to Comment PW-12:*

Staff appreciates the support. Staff recognizes the need to pursue emission reductions to address the air quality needs of the South Coast AQMD.

**Comment PW-13: Melissa Yu (Sierra Club)**

Appreciate staff for the incorporating input from the public and proposing solutions for different circumstances. Amending both rules would send a strong market signal to zero emission furnace and water heater manufacturers and suppliers.

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<sup>(3)</sup> <https://neep.org/heating-electrification/ccashp-specification-product-list>

*Response to Comment PW-13:*

Staff appreciates working with stakeholders during the rulemaking process and believes amending PAR 1111 and PAR 1121 could prompt manufacturers to innovate heat pump technologies and drive overall costs down.

**Comment PW-14: Robert Glass (Daikin Comfort Technologies)**

For PAR 1111, the labeling requirement for furnaces sold before zero emission compliance dates requires manufacturers to include, “2) After January 1, 2028, only for installation in mobile homes,” which could incur more labeling costs for manufacturers who do not manufacture a mobile home furnace. Recommend having separate labeling requirement based on whether a manufacturer manufactures a mobile home furnace or not.

After 2030, the alternative compliance option for emergency replacements and construction allow for a temporary rental installation of a natural gas-fired furnace for an additional six to 24 months. Therefore, the labeling portion that states, “3) After January 1, 2030, not compliant for use and installation in the South Coast AQMD” would suggest the rental installation is non-compliant.

Commercial furnaces, wall furnaces, and floor furnaces do not have an Annual Fuel Utilization Efficiency (AFUE) to calculate emissions.

Enforcement of rule based on installation date would create stranded inventory. Recommend enforcement based on manufacture date.

Recommend clarifying that dual fuel furnaces are not to be run with natural gas.

*Response to Comment PW-14:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Revised PAR 1111 and PAR 1121 removed the provision for temporary rentals and updated the labeling provision. The commenter’s concern on labeling requirement has been resolved.

The new rule concept also revised the proposed applicability to retain the current rule’s size applicability, meaning commercial-sized furnaces will not be included in PAR 1111. Wall furnaces, and floor furnaces are not required to calculate NOx emissions using an AFUE. AFUE is used to calculate the nanograms of NOx per joule of Useful Heat Delivered to the Heated Space to demonstrate a furnace meets the NOx limits in Table 1 of Rule 1111; wall furnaces, and floor furnaces are not subject to those NOx limits. A compliance schedule based on installation date aligned with previous amendments to Rules 1111 and Rule 1121, as well as the current version of Rule 1146.2. Future effective dates gave time for the supply chain to ensure inventory would be compliant by the compliance dates and minimize stranded inventory.

**Comment PW-15: Michael Rochmes (LA Climate Reality)**

Regulations can send a market signal to manufacturers to provide affordable solutions for the proposed amended rules.

*Response to Comment PW-15:*

Staff agrees with the commenter. It is important to set the market signal that will drive technology development and reduce costs overtime.

**Comment PW-16: Richard Markuson (Plumbing-Heating-Cooling Contractors Association (PHCC))**

Costs to replace appliances will need to be communicated by HVAC contractors. Concerns about the economic impact on local businesses and rate of implementation. The industry needs additional time to comply with the proposed amended rules. Incentives are essential for consumers to offset costs.

*Response to Comment PW-16:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Many HVAC contractors have been included in the working group meetings for this rule development. Staff has also met with several HVAC contractors to for individual discussions with regards to transitioning to zero-emission appliances. Staff will continue to work with stakeholders after the rule adoption and conduct technology check-in(s) to assess any issues with implementing zero-emission technologies. For more information on outreach, please see Response to General Comment 5. For more information on costs, please see Response to General Comment 2.

The federal, state, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help consumers offset some upfront costs. The Go Zero incentive program will launch in 2025 and will incentivize residences and small businesses to install zero-emission appliances.

Comment Letter #1: Los Angeles County Business Federation (BizFed)



Comment Letter #1

October 3, 2024

Hon. Vanessa Delgado, Chair
South Coast Air Quality Management District Governing Board
21865 Copley Dr.
Diamond Bar, CA 91765

Dear Chair Delgado and Governing Board members -

We are reaching out on behalf of BizFed, the Los Angeles County Business Federation, an alliance of more than 200 business organizations representing more than 400,000 employers in Los Angeles County, including large and small businesses in a wide range of industries throughout the South Coast Air Basin (SCAB). We are writing specifically regarding Proposed Amended Rule (PAR) 1111 and PAR 1121; many of the businesses we represent have or will be writing their own individual comment letters that specifically address the impacts to their industries. Our comments address the impacts on the business community as a whole and include overarching concerns of our diverse membership.

BizFed's concerns are related to the most recent draft rule language issued Friday, September 20. The SCAQMD's promotion of shared circuit 120v heat pump water heaters as alternatives to the devices currently permitted under Rule 1121, and the proposed January 1, 2027 compliance date for the proposed rule amendment, is of significant concern. As a result of staff's endorsement of these devices as adequate replacements for currently permitted water heaters, BizFed has sought and received an analysis of these new devices from a licensed plumbing engineer and general contractor and is providing results from that analysis below.

1-1

SCAQMD staff has taken the position that shared circuit 120v heat pump water heaters would be a cost-effective solution for owners/operators of multifamily communities and other affected entities to comply with the proposed amendments to SCAQMD's PAR 1121. Unfortunately, the data gathered by the licensed plumbing engineer shows that shared circuit 120v heat pump water heaters lack the reheating abilities provided by natural gas water heaters or dedicated circuit 240v heat pump water heaters. This is critical performance data that must be considered by the SCAQMD Governing Board when it considers amendments to PAR 1121; failing to consider this information will leave owners/operators to choose between prohibitively expensive retrofits or leaving millions of residents without sufficient hot water.

1-2

Two Simple Examples

Family of 4 living in a two bedroom / two bath apartment getting ready in the morning.

2022 California plumbing code 501.1(2) sets 49-gallon first hour rating as code. Manufacturers recommend 40-gallon natural gas hot water heaters be upsized to 60-70-gallon heat pump hot water heaters, with 60-76 gallon first hour ratings.

Ex.	First Hour Usage (Peak Hour) In Order	Hot water Usage (Gallons)	First Hour Rating	Result
1	1 Clothes washing machine (1 cycle) 1 Hand dishwashing (10 min) 1 Automatic dishwasher (1 cycle) 4 Bathroom faucets (1 min / person) <u>4 Showers (10 minutes / person)</u> Total	11 13 04 04 <u>+54</u> 86 Gal.	60-76 Gallons	<b>The fourth person runs out of hot water for their shower.</b>  3 hours and 45 minutes for shared circuit 120V unit to reheat the tank
2	1 Hand dishwashing (10min) 1 Automatic dishwasher (1 cycle) 1 bath 4 Bathroom faucets (1 min / person) <u>3 showers (10 minutes / person)</u>	13 04 26 04 <u>+40</u> 87 Gal.	60-76 Gallons	<b>The fourth person runs out of hot water for their shower.</b>  3 hours and 45 minutes for shared circuit 120V unit to reheat the tank

Water Heater	Natural Gas	Heat Pump (120V Shared)	Heat Pump (240V Dedicated)
Reheat Time	< 45 minutes	~3 hours 45 minutes (50 Gal) ~4 hours - 5 hours (60 Gal)	~ 1 hour 15 minutes



<p>Cost &amp; Scope to Install</p>	<p><b>\$1,700+</b> -New water heater -Permit</p>	<p><b>\$4,000 - \$15,000</b> -New water heater -Drain pan w/ dedicated drain line -Demo -City permit &amp; fee</p> <p><u>Likely Additions</u> -New electrical outlet -New breaker -Electrical panel upgrade -Stucco, drywall, painting -Asbestos &amp; lead abatement -Closet reframing -Utility provider permit &amp; fee -Louvered doors or ducting -Carpentry / paint -Stacked drains</p>	<p><b>\$30,000 - \$80,000</b> -New water heater -Dedicated electrical circuit -Drain pan w/ dedicated drain line -Demo -City permit &amp; fee</p> <p><u>Likely Additions</u> -Louvered doors or ducting -Electrical panel upgrade -Stucco, drywall, carpentry, painting -Asbestos &amp; lead abatement -Utility provider permit &amp; fee -Closet reframing -General contractor costs</p> <p><u>Commercial Buildings:</u> -Potential transformer upgrade -Electrical wire &amp; conduit upgrades -Site work -M.E.P engineering designs</p>
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Per the latest SCAQMD staff report posted 09/20/24, staff estimates there are 5.1 million hot water heaters impacted by rule 1121. At just \$4,000 / conversion, the economic impact across the South Coast Air Basin (SCAB) would be more than \$2 trillion dollars. In addition, this cost magnitude will be very inflationary for the local economies and lead to many of these costs being passed through to consumers, lessees, and 16+ million residents of the South Coast Air Basin.

The products, businesses, and residents of the SCAQMD are not ready for a rule change of this magnitude (\$2+ trillion) affecting millions of people. At a minimum, compliance for retrofits should be extended to coincide with the conversion of the vehicle fleet to electric in 2035, or at a minimum 2029, consistent with the timeframe included within the 2022 Air Quality Management Plan adopted by the Governing Board (Table 4-20), and there needs to be other safeguards to protect homeowners and renters from potential disproportionate financial impacts that can be associated with converting dual-fuel households to a single energy source.


1-3

Additionally, consideration should also be given to the true cost per day of tons of NOx removed, and an option provided for an in-lieu fee on the sale of gas hot water heaters as a means to support the acceleration of the SCAQMD’s incentive program, Go Zero.

1-4

Thank you for your thoughtful consideration.

Sincerely,



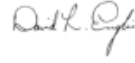
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- Action Apartment Association
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- Alhambra Chamber
- American Beverage Association
- Antelope Valley Chamber formerly Lancaster Chamber of Commerce
- Apartment Association of Greater Los Angeles
- Apartment Association of Orange County
- Apartment Association, CA Southern Cities, Inc.
- Apartment Association of California
- Arcadia Association of Realtors
- AREAA North Los Angeles SFV SCV
- Armenian American Business Association
- Armenian Trade & Labor Association
- Arts District Los Angeles
- ASCM Inland Empire Chapter
- Associated Builders & Contractors SoCal (ABC SoCal)
- Associated General Contractors
- Association of Independent Commercial Producers
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- Beverly Hills Chamber
- BioCom
- Black Business Association
- Black Professional Network
- Boyle Heights Chamber of Commerce
- Bridge Compton Org
- Building Industry Association - LA/Ventura Counties
- Building Industry Association of Southern California
- Building Industry Association- Baldyview
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- Business Resource Group
- CalAsian Chamber
- CalChamber
- California African American Chamber of Commerce
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- California Black Chamber of Commerce
- California Business Properties
- California Business Roundtable
- California Cleaners Association
- California Contract Cities Association
- California Council for Environmental & Economic Balance (CCEEB)
- California Fuels & Convenience Alliance- Formerly California Independent Oil Marketers Association (CIOA)
- California Gaming Association
- California Grocers Association
- California Hispanic Chamber
- California Hotel & Lodging Association
- California Independent Petroleum Association
- California Infrastructure Delivery Coalition
- California Life Sciences Association
- California Manufacturers & Technology Association
- California Metals Coalition
- California Natural Gas Producers Association
- California Restaurant Association
- California Retailers Association
- California Self Storage Association
- California Small Business Alliance
- California Travel Association (CalTravel)
- California Trucking Association
- Californians For Smarter Sustainability
- Carson Chamber of Commerce
- Carson Dominguez Employers Alliance
- Central City Association
- Century City Chamber of Commerce
- Chatsworth Porter Ranch Chamber of Commerce
- Citrus Valley Association of Realtors
- Civil Justice Association of California CJAC
- Claremont Chamber of Commerce
- Commerce Business Council formerly Commercial Industrial Council/Chamber of Commerce
- Compton Chamber of Commerce
- Compton Community Development Corporation
- Compton Entertainment Chamber of Commerce
- Construction Industry Air Quality Coalition
- Construction Industry Coalition on Water Quality
- Council of Infill Builders
- Crenshaw Chamber of Commerce
- Culver City Chamber of Commerce
- Downey Chamber of Commerce
- Downtown Alliance
- Downtown Long Beach Alliance
- DTLA Chamber of Commerce
- El Monte/South El Monte Chamber
- El Salvador Corridor Association
- El Segundo Chamber of Commerce
- Employers Group
- Energy Independence Now EIN
- Engineering Contractor's Association
- EXP The Opportunity Engine
- FastLink DTLA
- Filipino American Chamber of Commerce
- Friends of Hollywood Central Park
- FuturePorts
- Gardena Valley Chamber
- Gateway to LA
- Glendale Association of Realtors
- Glendale Chamber
- Glendora Chamber
- Greater Antelope Valley AOR
- Greater Bakersfield Chamber of Commerce
- Greater Coachella Valley Chamber of Commerce
- Greater Downey Association of REALTORS
- Greater Lakewood Chamber of Commerce
- Greater Leimert Park Crenshaw Corridor BID
- Greater Los Angeles African American Chamber
- Greater Los Angeles Association of Realtors
- Greater Los Angeles New Car Dealers Association
- Greater San Fernando Valley Chamber
- Harbor Association of Industry and Commerce
- Harbor Trucking Association
- Historic Core BID of Downtown Los Angeles
- Hollywood Chamber
- Hospital Association of Southern California
- Hotel Association of Los Angeles
- ICBWA- International Cannabis Women Business Association
- Independent Cities Association
- Independent Hospitality Coalition
- Industrial Environmental Association
- Industry Business Council
- Inglewood Board of Realtors
- Inland Empire Economic Partnership
- Irwindale Chamber of Commerce
- Kombucha Brewers International
- La Cañada Flintridge Chamber
- LA County Medical Association
- LA Fashion District BID
- LA South Chamber of Commerce
- Larchmont Boulevard Association
- Latin Business Association
- Latino Food Industry Association
- Latino Golfers Association
- Latino Restaurant Association
- LAX Coastal Area Chamber
- Licensed Adult Residential Care Association-LARCA
- Long Beach Area Chamber
- Long Beach Economic Partnership
- Long Beach Major Arts Consortium
- Los Angeles Area Chamber
- Los Angeles Economic Development Center
- Los Angeles Gateway Chamber of Commerce
- Los Angeles Latino Chamber
- Los Angeles LGBTQ Chamber of Commerce
- Los Angeles Parking Association
- Los Angeles Regional Food Bank
- MADIA Tech Launch
- Malibu Chamber of Commerce
- Manhattan Beach Chamber of Commerce
- Manhattan Beach Downtown Business & Professional Association
- Marina Del Rey Lessees Association
- Marketplace Industry Association
- Monrovia Chamber
- Motion Picture Association of America, Inc.
- MoveLA
- MultiCultural Business Alliance
- NAIOP Southern California Chapter
- NAREIT
- National Association of Minority Contractors
- National Association of Theatre Owners CA/Nevada
- National Association of Women Business Owners
- National Association of Women Business Owners - LA
- National Association of Women Business Owners-California

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National Federation of Independent Business  
Owners California  
National Hookah  
National Latina Business Women's Association  
Norwegian American Chamber of Commerce  
Ofiso Community Foundation  
Orange County Business Council  
Orange County Hispanic Chamber of Commerce  
Pacific Merchant Shipping Association  
Panorama City Chamber of Commerce  
Paramount Chamber of Commerce  
Pasadena Chamber  
Pasadena Foothills Association of Realtors  
PGA  
Pharmaceutical Care Management Association  
PHRMA  
Pico Rivera Chamber of Commerce  
Pomona Chamber  
Rancho Southeast REALTORS  
ReadyNation California  
Recording Industry Association of America  
Regional CAL Black Chamber, SVF  
Regional Hispanic Chambers  
San Gabriel Valley Economic Partnership  
San Pedro Peninsula Chamber of Commerce  
Santa Clarita Valley Chamber  
Santa Clarita Valley Economic Development Corp.  
Santa Monica Chamber of Commerce  
Secure Water Alliance  
Sherman Oaks Chamber  
Signal Hill Chamber  
South Bay Association of Chambers  
South Bay Association of Realtors  
South Gate Chamber of Commerce  
Southern California Contractors Association  
Southern California Golf Association  
Southern California Grantmakers  
Southern California KFC Franchise  
Southern California Leadership Council  
Southern California Minority Suppliers  
Development Council Inc.  
Southern California Water Coalition  
Southland Regional Association of Realtors  
Specialty Equipment Market Association  
Structural Engineers Association of Southern  
California  
Sunland/Tujunga Chamber  
Sunset Strip Business Improvement District  
Swiss American Chamber of Commerce  
Thai American Chamber of Commerce  
The Bridge Network  
The LA Coalition for the Economy & Jobs  
The Los Angeles Taxpayers Association  
The Two Hundred for Homeownership  
Torrance Area Chamber  
Tri-Counties Association of Realtors  
United Chambers – San Fernando Valley & Region  
United Contractors  
United States-Mexico Chamber  
Unmanned Autonomous Vehicle Systems  
Association  
Urban Business Council  
US Green Building Council  
US Resiliency Council  
Valley Economic Alliance, The  
Valley Industry & Commerce Association  
Venice Chamber of Commerce  
Vermont Slauson Economic Development  
Corporation  
Veterans in Business  
Vietnamese American Chamber  
Village of Sherman Oaks BID  
Warner Center Association  
West Covina Chamber  
West Hollywood Chamber  
West Hollywood Design District  
West Los Angeles Chamber  
West San Gabriel Valley Association of Realtors  
West Valley/Warner Center Chamber  
Westchester BID  
Western Electrical Contractors Association  
Western Manufactured Housing Association  
Western Propane Gas Association  
Western States Petroleum Association  
Westside Council of Chambers  
Westwood Community Council  
Whittier Chamber of Commerce  
Wilmington Chamber  
World Trade Center  
Yes in My Backyard  
7-Eleven Franchise Owners Association of  
Southern California

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**Response to Comment Letter #1***Response to Comment 1-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Consumers will have the choice of both zero-NOx emission units and NOx-emitting natural gas-fired units. For zero-NOx emission units, as mentioned in Chapter 2 of this report, Rule 1111 and Rule 1121 are fuel and technology neutral, meaning any technology that can meet the emission limits is compliant with the rule. Shared circuit 120V heat pumps offer a viable solution to buildings that are unable to accommodate a utility upgrade, as they can use an existing 120V circuit to power the heat pump water heater. These shared circuit 120V heat pumps are one of several options that can be used as adequate replacements for currently permitted water heaters for consumers who choose a zero-NOx emission replacement.

*Response to Comment 1-2:*

Staff recognizes that 120V heat pump water heaters and 240V heat pump water heaters have different first hour rating and recovery rates compared to their natural gas-fired counterpart. Increasing the storage capacity of the heat pump water heater can help to overcome the slower recovery rate of the zero-emission units. While manufacturer calculations can provide insight on the ability for these technologies to provide sufficient water, staff has also considered the anecdotal testimonies from residents who use heat pump water heaters for their source of hot water. The ability to provide sufficient hot water to a resident is dependent on the number of occupants, the time of use, and the extent of hot water use.

PAR 1121 establishes a market signal for manufacturers to further advance their technologies. The new rule concept for manufacturer alternative compliance option will be a slower transition to zero-NOx emission allowing further time for technology advancement.

Chapter 2 provides an example of the analysis on the replacement of a natural gas-fired residential water heater less than 75,000 Btu/hr subject to the rule, with a heat pump, which is one example of a zero-emission unit. The capital cost of a natural gas-fired unit is estimated to be \$3,000 based on the 2019 E3 “Residential Building Electrification in California”<sup>(4)</sup>, while the capital cost of the heat pump is estimated to be \$5,200 based on TECH Clean California heat pump rebate program<sup>(5)</sup> real world installation data. The commenter estimated capital costs of the heat pump replacements based on the worst-case scenarios counting all possible installation and construction work which are not expected for most cases. Therefore, staff believes those costs would not be representative for the purpose of rule analysis. Please find more discussion on the cost-effectiveness method in Response to General Comment 6.

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<sup>(4)</sup> <https://www.ethree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/>

<sup>(5)</sup> <https://techcleanca.com/public-data/>

*Response to Comment 1-3:*

PAR 1111 and PAR 1121 proposed compliance dates were determined feasible by BARCT analysis discussed in Chapter 2 and aligned with the timelines of other agencies and the 2022 AQMP Control Measures, R-CMB-01, and R-CMB-02. . . Staff recognized that cost-effectiveness of some categories by the original rule concept are over the 2022 AQMP screening threshold. The new manufacturer alternative compliance option allowing NOx-emitting units satisfies the direction set forth by 2022 AQMP addressing higher cost-effectiveness categories for zero-NOx emission standards.

*Response to Comment 1-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The cost-effectiveness analysis detailed in this report is generally used to compare alternative means of emissions control relating to the cost of purchasing, installing, and operating control equipment to achieve the projected emission reductions. For information regarding the cost per ton of NOx reduced, please refer to Chapter 2 of this report.

Staff has also prepared a Draft Socioeconomic Impact Assessment released for public review and comments at least 30 days prior to the public hearing. The analysis considers the range of probable costs or savings, impact to small businesses, and impact on employment and the regional economy. The preliminary analysis estimates overall unit lifetime savings as the lower operational costs would offset the higher upfront costs. For more discussion on the cost-effectiveness analysis, please see Response to General Comment 6.

Previous amendments to Rule 1111 and Rule 1121 provided mitigation fee alternative compliance options because no compliant technology was available in the market. The new technologies were still under development and more time was needed for commercialization. For the zero-emission market, staff has identified various technologies that are commercially available. For the new rule concept for manufacturer limits, there will be a mitigation fee component. The Control Measure, R-CMB-01, set forth by the 2022 AQMP is focused on achieving the maximum NOx emission reductions possible. Allowing an additional equipment lifetime (15 -25 years) for natural gas use would ultimately delay emission reductions.

**COMMENT LETTER #2: KORY GRIGGS**

From: kory indoorweatherhvac.com <kory@indoorweatherhvac.com>  
Sent: Friday, October 4, 2024 7:03 PM  
To: Peter Campbell <pcampbell@aqmd.gov>  
Subject: [EXTERNAL] Comment on Rule 1111 and 1121

Comment Letter #2

My name is Kory Griggs, and I am an HVAC contractor in the San Bernardino mountains.

I want to comment about the proposal the AQMD is working on to amend rule 1111 and 1121.

1. The public is unaware of the amendment's implications on their future budgets and the costs of repairs to their homes. This must be addressed.

- You recognize that as much as 13% of the structures in the SCAQMD district will require a major expense in infrastructure upgrades to install a heat pump
- You recognize that the cost of operation will increase by as much as 38%
- In climate zones that are cooler than the average SoCal locations equipment cost will be greater due to the need for specialized equipment (low ambient equipment).

2-1

2. The reliance of rebate programs to offset the cost of upgrades for the building owners of greatest need.

- These programs usually incentivize early adopters, as they are first come, first served. (Folks of less means typically do not replace equipment in advance of its failure.)
- There is no guarantee that the programs will be available from year to year. (Again, biasing people that have the budget to adapt prior to equipment failure.)
- The programs typically exclude lower efficiency equipment in favor of higher efficiency units. (Favoring higher ticket items over budget friendly equipment, ticket items that those of lower means typically do not choose due to lack of funds.)
- There are no known socioeconomic-based programs.
- There are no known programs for residential infrastructure improvements: panel upgrades, electrical home runs, disconnects, etc.

2-2

3. Cost of operation.

- In many areas in CA our electricity rates are artificially inflated (due to "over usage" penalties or TIERED rates, the rates vary from climate zone to climate zone with variable different Teir thresholds.)
- The programs offered by the utility providers for all electric homes rarely offset the cost of operation enough to be effective solutions for most users.
- Higher charges for high use times of day ie. 4-9pm

2-3

## 4. Temporary, emergency replacements.

- The current plan is not workable from a cost perspective.
- In actual emergency situations the possible length of approval times may cause a real hazard to persons or property.
- If the distributors are not allowed to sell gas-fired furnaces or water heaters, who will have the temporary equipment available?

2-4

**Kory Griggs**

Indoor Weather Heating, Air &amp; Refrigeration, Inc., President



9092896201 ext 4

<http://www.indoorweatherHVAC.com>***Response to Comment Letter #2****Response to Comment 2-1:*

Thank you for your comments.

While staff has worked hard to ensure all stakeholders are aware of the current rulemaking, we recognize that further education is needed. The outreach portion of the upcoming Go Zero incentive program is intended not only to educate consumers about the rebates, but also the upcoming compliance dates for zero-emission units. Please see Response to General Comment 5 for further discussion on outreach.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. For consumers who choose zero-NOx emission units, staff acknowledges that the upfront cost may be higher for many cases; however, based on the IEPR projected future year rates for electricity and natural gas, staff has identified operational cost savings due to the higher efficiency of zero-emission technologies. Cold climate heat pumps are built to work efficiently in conditions down to 20 degrees Fahrenheit and can operate in conditions down to negative 25 degrees Fahrenheit. Average heat pumps will achieve above 200 percent efficiency at 20 degrees Fahrenheit and beat low-temperature heat pumps will achieve 188 percent efficiency even at 0 degrees Fahrenheit.<sup>(6)</sup>

<sup>(6)</sup> <https://leammetrics.com/best-heat-pumps-for-cold-climates/>

Please see Response to General Comment 2 for discussion on cost and Response to General Comment 8 for discussion on high altitudes.

*Response to Comment 2-2:*

Incentive programs like the South Coast AQMD's Go Zero, the state's TECH Clean California are intended to accelerate the market for heat pumps and encourage adoption. This will allow the market to mature, providing lower prices and more options by the time the future effective compliance dates for manufacturers go into effect. Most incentive programs do prefer higher efficiency units to realize higher operational cost savings and lower electricity use. The existence of multiple incentive programs means lower income consumers can stack rebates to afford more expensive high efficiency heat pump systems. Finally, most incentive programs, including Go Zero include greater funds and incentive amounts for low income or otherwise overburdened communities. For example, Go Zero will allocate 75 percent of funding for overburdened communities.

*Response to Comment 2-3:*

In order to mitigate the costs of more electrical appliances in households, the state legislature passed Assembly Bill 205, which creates a flat rate for electric bills, resulting in lower per kilowatt-hour charges. In addition, the IEPR forecast projects rapidly increasing natural gas prices, while electricity rates will go up more slowly. Overall, staff expects consumers to save money in operating costs when switching to zero-emissions. Finally, staff will re-evaluate operational cost based on the updated projection on the utility rates at the technology check-in(s).

*Response to Comment 2-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. By this new rule concept, consumers may opt to install NOx-emitting gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.



**COMMENT LETTER #3: ALLEN MAIRS**

**From:** Allen Mairs <mairs1952@gmail.com>  
**Sent:** Thursday, October 10, 2024 2:56 PM  
**To:** Yanrong Zhu <yzhu1@aqmd.gov>  
**Subject:** [EXTERNAL] November 1 meeting

Comment Letter #3

Greetings,

If these measures to make Mountain communities all electric are implemented, it will be devastating for residents and the real estate market.

I have a friend that FROZE TO DEATH during Snowmagedon winter before last. She lived in an all electric home and we had extended periods where we had no electricity.

Conversion to heat pumps is cost prohibitive to most mountain residents, plus they just don't work when temperatures drop as they do in winter months, PLUS temperatures HAVE to be maintained to prevent water pipes from freezing.

People live in mountain/rural areas because they CHOOSE not to live in cities.

Please help us with this delima.

Allen Mairs

3-1

**Response to Comment Letter #3:***Response to Comment 3-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands the importance of space heating in mountain communities. By the new rule concept, consumers will have the choice of both zero-NOx emission units and natural gas-fired units for installation.

For consumers who choose zero-NOx emission units The costs are expected to decrease when the zero-emission technologies gain more market adoption. Heat pumps are currently used in cold climates, such as Maine, Vermont, and Alaska. For more information regarding cold climate heat pumps please refer to Chapter 2 of this report. Staff acknowledges the higher upfront costs to retrofit and operate heat pumps. Costs associated with retrofitting heat pumps can be offset using federal and state rebates. In addition, the South Coast AQMD's Go Zero incentive program is also expected to help minimize costs. Please see Response to General Comment 2 for further discussion on costs and Response to General Comment 8 for further discussion on high altitudes. Chapter 2 provides some discussion on grid reliability, and please see Response to General Comment 3 for further discussion. Local and state agencies are working together for a pathway in meeting the future increased electrical demand and providing local grid infrastructure upgrades.

COMMENT LETTER #4: RINNAI

Comment Letter #4



October 11, 2024

Jen Vinh
Planning, Rule Development, and Implementation
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive, Diamond Bar, CA 91765
(Submited via email to: jvinh@aqmd.gov)

RE: Proposed Amended Rule 1121. Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Water Heaters

Dear Ms. Vinh,

On behalf of Rinnai America Corporation, we appreciate the opportunity to provide comments on SCAQMD Rule 1121. As a leading manufacturer of gas water heaters and boilers, we have a long-standing commitment to reducing emissions and improving energy efficiency. However, the proposed zero-NOx emission limitations in Rule 1121 raise substantial concerns. Specifically, by requiring zero NOx emissions, Rule 1121 effectively eliminates all gas-fired appliances from the market, leaving heat pumps as the only alternative. While most of our products, such as instantaneous water heaters and boilers, fall under Rule 1146.2, as a prominent member of the water heating industry we feel the need to oppose unreasonable standards for all types of water heaters. Such restrictions could hinder the availability of affordable and high-efficiency options for consumers. This regulatory approach is not only impractical but is also inconsistent with the needs of consumers and the current state of infrastructure in Southern California.

4-1

Federal Preemption Under EPCA: The proposed limitations under Rule 1121 raise serious concerns regarding federal preemption under the Clean Air Act (CAA) and Energy Policy and Conservation Act (EPCA). EPCA prohibits states from enacting their own regulations related to the energy use of covered products, which includes water heaters and boilers regulated at the federal level. Imposing state-specific NOx limits could create a regulatory patchwork that directly conflicts with established federal standards. Additionally, these unique requirements could disrupt the national market, placing undue burdens on manufacturers to produce separate models for California and the rest of the country, thus violating the Dormant Commerce Clause.

4-2

Technical Feasibility and Lack of Alternatives: While Rinnai supports efforts to reduce emissions, the zero-NOx requirement under Rule 1121 fails to recognize that the development of technologies like hydrogen-enriched gas and advanced low-NOx combustion systems that are still evolving. Eliminating ultra-low NOx gas-fired appliances in favor of heat pumps as the sole option ignores the substantial benefits and advancements that gas technologies have achieved in improving both efficiency and emissions performance.

4-3

Rinnai America Corporation | 103 International Drive, Peachtree City, GA 30269 | 800-621-9419

Rinnai Comments on SCAQMD PAR 1121  
 October 11, 2024  
 Page 2 of 2

The zero-NOx standard would effectively exclude gas-fired water heaters and boilers, regardless of the emissions reductions they could achieve through cleaner combustion technologies. This blanket approach stifles innovation and dismisses any potential for hybrid systems or hydrogen-enriched natural gas, both of which offer promising pathways to reducing NOx without eliminating gas-fired systems altogether.

4-4

**Economic and Consumer Impact:** From an economic standpoint, the zero-NOx rule creates significant burdens for consumers. Transitioning to heat pumps, while viable in some cases, presents substantial challenges in terms of upfront costs, installation complexity, and performance in varied climates. These costs would disproportionately affect low- and middle-income households, as well as those living in older homes not readily equipped for electric retrofits. It is vital to acknowledge that heat pumps are not a one-size-fits-all solution, particularly in colder environments where gas-fired systems offer more reliable heating.

4-5

**Grid Reliability and Infrastructure Challenges:** One of the most pressing concerns associated with Rule 1121 (as well as other rules such as Rule 1111 and 1146.2) is its impact on grid reliability. Shifting the entire burden of water and space heating to electric heat pumps will place significant strain on California's already challenged electrical grid. Recent rolling blackouts and grid instability during peak demand periods underscore the fragility of the current infrastructure. Requiring widespread adoption of electric heat pumps under these conditions will exacerbate the problem, leading to greater risks of power outages and heightened energy costs for consumers. It is imperative that any regulatory approach consider the readiness of the electric grid to handle such a drastic increase in demand.

4-6

**Conclusion and Recommendation:** Rinnai urges SCAQMD to reconsider the zero-NOx emission requirement under Rule 1121. Although the majority of our products, like instantaneous water heaters and boilers, are regulated under Rule 1146.2, we believe it is crucial, as a leading member of the water heating industry, to oppose unworkable standards that affect all types of water heaters. We recommend a more pragmatic approach that encourages the continued development of ultra-low-NOx gas technologies, hydrogen-enriched natural gas systems, and hybrid solutions that combine gas and electric technologies. These alternatives can achieve meaningful reductions in emissions without eliminating consumer choice or undermining the economic feasibility of gas-fired systems.

4-7

A balanced, technology-neutral policy that fosters innovation across a range of heating solutions will be far more effective than a zero-NOx mandate that forces a costly and premature shift to electric heat pumps. Such an approach would allow the market and our industry to continue evolving toward cleaner technologies while maintaining reliable, affordable, and efficient options for consumers.

We appreciate your consideration of these concerns and look forward to continued dialogue on how best to meet the region's environmental goals in a manner that respects both consumer needs and economic realities.

Sincerely,



Marc D. Neufcourt  
 Director, Regulatory and Government Affairs

**Response to Comment Letter #4***Response to Comment 4-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1121 aligns the new building compliance date with the CEC Building Code effective date and the previous rule concept set existing building compliance dates with other agencies' proposals and the goal set by the 2022 AQMD Control Measure R-CMB-01. As discussed in Chapter 2, various technologies could achieve zero-emission standards and the South Coast AQMD is technology and fuel neutral. Nevertheless, staff understands that heat pumps are the predominant zero-emission technology in the current market. Modern heat pumps can reach 300 to 400 percent efficiency or even higher. Manufacturers suggested a clear policy direction of future effective zero-emission standards is needed to justify further product development. PAR 1121 would encourage more market adoption of highly efficient units and further advancement on product development. Staff expects the costs of zero-emission technologies to come down overtime. For further discussion on costs, please see Response to General Comment 2. For further discussion on technology readiness, please see Response to General Comment 4.

Staff would also like to point out that Rule 1146.2 was amended in June 2024 to include future effective zero-emission standards.

*Response to Comment 4-2:*

PAR 1121 is not preempted by the Clean Air Act. It is well-established that under Section 116 of the Clean Air Act, states retain the right to adopt and enforce any standard or limitation respecting emissions of air pollutants from stationary sources, including from products subject to Rule 1121. (*See* 42 U.S.C. 7416). In fact, Rule 1121 (last amended 2004) was approved into the State Implementation Plan and is federally enforceable.

Moreover, PAR 1121 is not preempted by the EPCA. Please see Response to General Comment 9.

Finally, PAR 1121 does not violate the Dormant Commerce Clause. As held by the Ninth Circuit Court of Appeals, there are two broad categories of state regulations that may contravene the Dormant Commerce Clause: “(1) those that directly burden interstate commerce or otherwise discriminate against out-of-state interests; and (2) those that incidentally burden interstate commerce.” (*Pacific Merchant Shipping Association v. Goldstene*, 639 F.3d. 1154, 1177 (9<sup>th</sup> Cir. 2011)). “Regulations falling under the first category are generally struck down, while those in the second category are reviewed under a balancing test. Under this balancing test, a regulation may violate the Commerce Clause if the burdens they impose so outweigh the putative local benefits so as to render the regulations unreasonable or irrational. ... [I]t is clear, however, that the Supreme Court used the term ‘direct’ to refer to regulations whose *central* purpose is to regulate commerce, usually in order to benefit local interests.” (*Id.* at 1177-78) (citations omitted)). Under the balancing test, courts do not substitute their judgment as to the relative value of the benefits

and burdens imposed by the regulation. Instead, “[a] statute is unreasonable or irrational when the asserted benefits of the statute are illusory or relate to goals that evidence an impermissible favoritism of in-state industry over out-of-state industry.” (*Alaska Airlines, Inc. v. City of Long Beach*, 951 F.2d 977, 983 (9<sup>th</sup> Cir. 1991)).

Here, PAR 1121 does not directly burden interstate commerce or otherwise discriminate against interstate commerce. PAR 1121 does not favor in-state manufacturers or distributors over out-of-state industry. Nor is the rule’s central purpose to regulate commerce or markets. Instead, it is a classic air pollution regulation, originally adopted in 1978, to reduce pollution from the regulated sources. Accordingly, the proposed rule amendments are valid unless they impose such a burden on interstate commerce as to be “unreasonable or irrational.” This test is only violated where the asserted benefits of the rule are “illusory” or relate to goals of economic protectionism—favoring in-state industry over out of state. There is no evidence of a protectionist motive here. And the benefits of the rule are far from illusory—it is expected that upon full implementation, PAR 1121 will obtain approximately 2.3 tons per day of NO<sub>x</sub> emission reductions.)

*Response to Comment 4-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

The 2022 AQMP’s objective is to transition to zero-emission technologies, wherever feasible, and staff identified technically feasible zero-emission control options for equipment subject to Rule 1121. South Coast AQMD is designated as “extreme” nonattainment and NO<sub>x</sub> emission reductions are critical to meet National Ambient Air Quality Standards. Zero-emission air and water heating technologies exist today and waiting for technologies to develop and emerge that will achieve fewer NO<sub>x</sub> emission reductions and take longer to become commercially viable would not meet South Coast AQMD’s air quality goals.

Cold climate heat pump technology is currently utilized in cold climates successfully. For more information regarding cold climate heat pumps please refer to Chapter 2 of this report and Response to General Comment 8.

*Response to Comment 4-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

South Coast AQMD is technology and fuel neutral and is focused on achieving NO<sub>x</sub> emission reductions. The new rule concept allows NO<sub>x</sub>-emitting natural gas-fired units. Further, should zero-NO<sub>x</sub> natural gas technologies be developed and adopted, consumers would have the opportunity to choose between newly designed natural gas and other zero-emission appliances.

*Response to Comment 4-5:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff acknowledge the higher upfront cost in many zero-emission installations; however, lower annual operational costs are anticipated. Federal, state, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help alleviate the financial burden. Moreover, staff will re-evaluate operational cost based on the updated projection on the utility rates at the technology check-in(s). Please see Response to General Comment 2 for further discussion on cost.

*Response to Comment 4-6:*

Staff recognizes the importance of electric grid reliability for electric units, but also for natural gas units, which often require electricity to operate. The CEC, CPUC, and CARB are working to coordinate efforts, identify issues not covered by ongoing efforts, and assess needed actions to better align the energy system with the state's climate targets. The new rule concept provides a slower transition that will slow demand increase and time to enhance the grid for future demand. For further discussion, please see Response to General Comment 3.

*Response to Comment 4-7:*

Staff appreciates Rinnai's comments. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

As the South Coast Air AQMD has been classified as "extreme" nonattainment for the 2015 8-hour ozone standard, staff is required to consider emission reduction for all categories and set future effective dates to reduce emissions as early as feasible. PAR 1121 is technology and fuel-neutral and is focused on achieving the maximum NOx emission reductions possible. The new rule concept provides a pragmatic approach for transition to zero-emission technologies to achieve needed NOx emission reductions, while ensuring consumer choices of zero-NOx emission and natural gas units.

COMMENT LETTER #5: LOS ANGELES CLIMATE REALITY PROJECT

Comment Letter #5



October 11, 2024

Chair Larry McCallon and Committee Members  
 Stationary Source Committee  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765

RE: SUPPORT for Proposed Amended Rules 1111 and 1121

Dear Chair McCallon and Members of the Stationary Committee:

The undersigned organizations write in strong support of Proposed Amended Rules (PAR) 1111 and 1121 to set a zero-NO<sub>x</sub> emission limit on gas-powered furnaces and water heaters, which will be on the committee agenda at your October 18 meeting.

5-1

The 2022 Air Quality Management Plan (AQMP) states that the "only way to achieve the required nitrogen oxide (NO<sub>x</sub>) reductions is through extensive use of zero-NO<sub>x</sub> technologies

across all stationary and mobile sources.”<sup>1</sup> Applying zero-NO<sub>x</sub> standards on furnaces and water heaters is critical for meeting National Ambient Air Quality Standards (NAAQS) and steering the region away from severe nonattainment.

When fully implemented, these rules will reduce NO<sub>x</sub> emissions by 10 tons per day, approximately 10% of the regional NO<sub>x</sub> pollution under Air District authority. Residential appliances alone emit more NO<sub>x</sub> than – and nearly comparable levels of direct fine particulate matter (PM<sub>2.5</sub>) as – the South Coast region’s oil and gas production, oil refineries, and cement production combined.<sup>2</sup>

Implementation of zero-emission appliance standards will have significant health benefits for people living in the South Coast region. NO<sub>x</sub> emissions negatively impact respiratory and cardiovascular health. They also contribute to the formation of ozone and secondary PM<sub>2.5</sub>,<sup>3,4</sup> which is tied to severe health issues, including respiratory, pulmonary, cardiovascular, cognitive, reproductive, and developmental problems; cancer; and premature mortality.<sup>5</sup>

5-2

The true value of zero-NO<sub>x</sub> solutions like energy efficient heat pumps also encompasses significant additional benefits, such as reduced greenhouse gas emissions and increased access to efficient cooling and air filtration during more frequent and intense extreme heat and wildfire events. This clean equipment can be powered by distributed energy resources, improving resilience for Southern California communities.

Opponents of these measures argue that further studies are needed before amending Rules 1111 and 1121. These calls for further studies serve no purpose but to delay a transition to pollution-free heating equipment in the South Coast region. Staff has made clear through the rulemaking process that technology to support this transition exists today and that these measures are feasible. Indeed, heat pumps have already outsold gas furnaces in the United States for the last two years,<sup>6</sup> with 35% year-over-year growth in the heat pump water heater market last year as well.<sup>7</sup> These technologies are proven.

As you know, zero-NO<sub>x</sub> standards on furnaces and water heaters have already passed at the Bay Area Air Quality Management District, where they are well underway on implementation planning. The South Coast region has an even greater need to pass zero-NO<sub>x</sub> standards on an expedited timeline. The region has failed to meet any national ozone standards, including

5-3

<sup>1</sup> South Coast Air Quality Management District (SCAQMD), [2022 Air Quality Management Plan](#), Executive Summary (December 2, 2022).

<sup>2</sup> U.S. Environmental Protection Agency (EPA), [2020 National Emissions Inventory](#), March 2023. Appliance emission estimates include residential & commercial emissions for the gas, oil, & other fuel categories, with commercial emissions adjusted to exclude certain non-appliance sources like pipeline compressor stations.

<sup>3</sup> J.A. Last et al., “Ozone and Oxidant Toxicity.” *Comprehensive Toxicology* 15, pp. 389-402, 2018.

<sup>4</sup> World Health Organization, [“WHO global air quality guidelines. Particulate matter \(PM2.5 and PM10\), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide.”](#) 2021.

<sup>5</sup> California Air Resources Board, [“Inhalable Particulate Matter and Health \(PM2.5 and PM10\).”](#)

<sup>6</sup> D. Reisinger (CNET), [“Heat Pumps Outsell Gas Furnaces Once Again: What’s the Difference?”](#) February 24, 2024.

<sup>7</sup> EPA, [“ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2023 Summary.”](#) 2024.



standards the U.S. EPA adopted in 1997, almost thirty years ago.<sup>8</sup> These ongoing attainment failures mean the Air District cannot afford to delay feasible measures that are known to reduce significant NO<sub>x</sub> and PM<sub>2.5</sub> emissions.

5-3

Your staff is estimating that the full implementation of these rules will not be achieved for 15-25 years after their latest compliance date.<sup>9</sup> This is already past 2050 for some sources of pollution. The longer it takes to pass these amendments and to send the important market signal they represent, the longer it will take to actualize their full benefit. These rule amendments must pass this year.

5-4

South Coast AQMD staff has undergone a thorough public process and found that zero-emission appliances are the best available control technology. Installation of heat pumps in new buildings and as replacements for existing gas-powered appliances at end of life generally provide cost savings over the life of the appliances, and these rules provided reasonable accommodation for more complicated emergency replacements, as well as master-metered mobile home parks. With the passage of the Go Zero rebate program, the South Coast AQMD has also provided financial support for compliance, with priority in the transition going to disadvantaged communities. This financial support supplements existing federal, state, and local rebates for heat pump installation.

5-5

By setting future effective compliance dates, PAR 1111 and 1121 send an important market signal to zero-emission furnace and water heater supply chains. The sooner this rule is passed, the more beneficial this market signal will be. The technology check-in planned for June 2027 will provide an opportunity to evaluate market adoption and supply of heat pump technology for small spaces, limited power supply, and mobile homes – all areas addressed in the rule by alternative compliance options and later implementation dates.

5-6

The proposal to move these equipment categories to zero-NO<sub>x</sub> alternatives has been part of the AQMP since 2022. The District must stay the course to deliver on the promise of the 2022 AQMP. We respectfully ask the Stationary Source Committee to move PAR 1111 and 1121 forward to the Governing Board expeditiously and lay the groundwork for reducing up to 10 tons of NO<sub>x</sub> per day in the South Coast region.

5-7

Sincerely,

Charles Miller  
Chapter Chair  
Los Angeles Climate Reality Project

David Diaz, MPH  
Executive Director  
Active San Gabriel Valley

<sup>8</sup> EPA, ["Finding of Failure to Attain 1997 8-Hour Ozone Standard; Los Angeles-South Coast Air Basin,"](#) August 15, 2024.

<sup>9</sup> SCAQMD, ["Preliminary Draft Staff Report \[PAR 1111 and PAR 1121\],"](#) pg. 5-3, September 2024.

Claire Robinson  
Managing Director  
Amigos de los Rios

Tomas Castro  
OC Climate Equity Advocate  
Climate Action Campaign

Lisa Swanson  
Policy Chair  
Climate Reality Project Orange County Chapter

Christopher Chavez  
Deputy Policy Director  
Coalition for Clean Air

Christy Zamani  
Executive Director  
Day One

Fernando Gaytan  
Senior Attorney  
Earthjustice

Jorge Rivera  
Executive Co-Director  
Healing and Justice Center

Margo A Reeg  
President  
League of Women Voters of Los Angeles County

Tori Kjer  
Executive Director  
Los Angeles Neighborhood Land Trust

Charlotte Matthews, Managing Director  
Jed Holtzman, Senior Associate  
RMI

Sharon Ungersma  
Chapter Chair  
San Fernando Valley Climate Reality Project

Kim Orbe  
Senior Conservation Program Manager  
**Sierra Club, Angeles Chapter**

Sam Fishman  
Sustainability and Resilience Policy Manager  
**SPUR**

Anne Pernick  
SAFE Cities Senior Advisor  
**Stand.earth**

Stuart Wood PhD  
Executive Director  
**Sustainable Claremont**

Ben Stapleton  
Executive Director  
**USGBC California**

**Response to Comment Letter #5***Response to Comment 5-1:*

Staff appreciates the comments and believes that amending PAR 1111 and PAR 1121 at its current projected date would help achieve emissions reductions more effectively.

*Response to Comment 5-2:*

Implementation of PAR 1111 and PAR 1121 will result in a NOx emissions reduction of 6 tons per day. Reduction of NOx emissions would improve air quality, which could reduce health risks associated with air pollution.

*Response to Comment 5-3:*

Since rules enforced by the South Coast AQMD cannot be less stringent than those by other air districts, unless such a rule would be infeasible, staff has considered the compliance dates of other air districts, such as BAAD, in the BARCT assessment.

*Response to Comment 5-4:*

PAR 1111 and PAR 1121 are area sources rules that regulate the product supply chain that achieves emission reductions at equipment natural turnover. This aligns with other agencies for similar rules. Staff acknowledges the benefits from full implementation of the rules. PAR 1111 and PAR 1121 have proposed implementation dates as early as feasible. Staff agrees that the public hearing should not be delayed.

*Response to Comment 5-5:*

Staff determined the feasibility of zero-emission standards through the BARCT analysis and is developing the Go Zero incentive program to help lower the upfront cost for some consumers with a focus on the overburdened communities. The new rule concept for manufacturer alternative compliance option would further address installations when zero-NOx emission technologies are not as cost effectiveness.

*Response to Comment 5-6:*

Staff agrees with the commenter.

*Response to Comment 5-7:*

Staff appreciates the support.

COMMENT LETTER #6: ANN STALWICK AND CHANA NEVO

Comment Letter #6

**Peter Campbell**

**From:** CHANA NEVO <chanalenevo@msn.com>  
**Sent:** Monday, October 14, 2024 12:18 PM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Comment on rule 1111and 1121

*I been a realtor since 1979 and have sold in northern and southern California. The real estate market is not stable at present. Migration to other states from Californian has a one percent increase (average) due to several causes ,inflation, pricing, interest rates and cost of living.*

*By implementing and having homeowners retrofit their houses to all electrical appliances will affect the market pricing on properties. Present electrical system in houses will not carry the high amperage appliances. The National Association of Builders states the cost would be \$30,000. to \$40,000. to retrofit a house. This could bankrupt people and send the housing market in a downward dive. The State Incentive Programs will not work. That money comes from the taxpayers and people still have to purchase all the appliances; stove, furnace, AC, and water heaters. What about pool and jacuzzies is that an additional cost.*

6-1

6-2

*How is the disposal of all those appliances going to affect the demand on the waste disposal system. The higher demand on the electrical grid will cause blackouts. The cost of electrical use will be quite higher to the consumer than natural gas. All this extra expenses affects buyers decision on purchase and sellers on selling.*

6-3

*This is great impact on people's lives causing a lot of stress and anxiety which will create more problems because of the waste disposals of metal, plastic, Freon, and electronics.*

**THIS WILL NOT HELP TO REACH CLEANNER AIR QUALITY!!!**

*Thank you,  
Ann Stalwick  
Crestline, California*

*In addition.*

*Regarding 1111 and 1121*

*I live in Crestline, CA which is in climate 16, snow country where the heat pumps can freeze. You would need low ambient equipment in these area at a much higher cost to the consumer. This is a big risk to resident's health and safety, Last year's storm caused state of emergency and blackouts and some people froze to death .*

6-4

*Thank you.  
Chana Neno*

**Response to Comment Letter #6***Response to Comment 6-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff has evaluated the cost of electrical upgrade and included the required cost in the cost-effectiveness analysis as discussed in Chapter 2. Given 87 percent of homes in the South Coast AQMD region have air conditioning systems, most of the homes will not require electrical upgrades if the consumer chooses a zero-emission unit to comply with PAR 1111. In addition, there are various zero-emission options that do not need electrical upgrades, such as portable heat pumps for space heating and cooling and 120V plug-in heat pump water heaters. While an increase in electrical service may be needed in some cases, some planners such as Redwood Energy<sup>(7)</sup> believe it can be avoided, even with all electric appliances in a home. For further discussion on cost, please see Response to General Comment 2.

*Response to Comment 6-2*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. For consumers that elect to install zero-NOx emission units, the proposed zero-emission standards have future effective dates that would apply at natural appliance replacement when old units break down or consumers choose to replace them, which means most consumers would have sufficient time to plan for future replacement. Federal, state, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help alleviate the financial burden for consumers who choose zero-emission appliances. Please see Response to General Comment 2 for further discussion on cost.

*Response to Comment 6-3:*

For both the original and new rule concept, the transition to zero-emission appliances would occur at the natural replacement of the furnace or water heater, so there would be no additional waste created. For a discussion on grid reliability, please see Response to General Comment 3.

*Response to Comment 6-4:*

Staff understands the importance of space heating in mountain communities. Please see Response to General Comment 8.

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<sup>(7)</sup> <https://www.redwoodenergy.net/watt-diet-calculator>

**COMMENT LETTER #7: STEVE PEARSON (DAUM COMMERCIAL REAL ESTATE SERVICES)****Comment Letter #7**

Mr. Peter Campbell  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: pcampbell@aqmd.gov

Re: Comments on PAR 1111 and PAR 1121

Dear Mr. Campbell:

DAUM Commercial Real Estate Services appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company is one of the oldest commercial real estate services companies in Southern California. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not consider issues facing commercial and industrial real estate property owners and our tenants. For example, commercial property owners already face sky high costs for rent, insurance and other daily operating necessities. 7-1

We would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that our local utility provider informs us that they can accommodate any new electrical hook-up which would be required due to the installation of a new system in order to avoid any additional delays for occupancy of our properties. 7-2

Thank you for taking into consideration our concerns. Please contact me with any questions.

Sincerely,

Steve Pearson

Principal  
 DAUM Commercial Real Estate Services

**Response to Comment Letter #7***Response to Comment 7-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability and will not expand to large size spacing heating units such as commercial furnaces. The revised PAR 1111 and PAR 1121 have minimized the impact to commercial properties.

Many installations in commercial and multifamily properties are subject to Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters which was adopted in June 2024 for zero-emission standards. Please refer to the Rule 1146.2 Public Hearing documents, which include the staff report and the socioeconomic impact assessment for more information on the analysis.<sup>(8)</sup> Staff will conduct a technology check-in and report to the Stationary Source Committees in June 2026 for the implementation of Rule 1146.2.

*Response to Comment 7-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For consumers electing to install zero-NOx emission units, the 2026 compliance date was delayed until 2027 and is for new construction only, when the building code will also require new building electric ready, and the 2029 compliance date is for existing building. These existing building compliance dates only applied to appliances that were sold or installed after the compliance effective dates. Existing units could continue to operate until natural replacement. The revised PAR 1111 and PAR 1121 will provide flexibility and more time to comply.

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<sup>(8)</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf>



**COMMENT LETTER #8: DENNIS L SANDOVAL (DAUM COMMERCIAL REAL ESTATE SERVICES)**

Comment Letter #8



"Serving Southern California Businesses since 1904!"

**SCAQMD PAR 1111 and PAR 1121**

Mr. Peter Campbell  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: pcampbell@aqmd.gov

**Re: Comments on PAR 1111 and PAR 1121**

Dear Mr. Campbell:

My associates and I appreciate the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NO<sub>x</sub> Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company provides corporate real estate consulting to a large cross section of businesses within the State of California. Our goal is to help businesses grow and expand within our incredible State. We are aiding our clients to help them not only identify quality buildings but also introduce them the architects and builders who are committed to reducing their carbon footprint while meeting the operational and economic needs of the business environment, which will create good paying jobs in a responsibly designed building.

Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout the inventory of buildings we promote and market.

We are concerned that the proposed rules do not take into account issues facing commercial and industrial real estate property business owners, property owners and tenants. Construction costs, material costs, layers of compliance regulations and operational costs are escalating to the point where we are asked much too frequently, "*What are our out of state alternatives for relocation and expansion?*"

8-1

Conversion costs in various areas of the business are compounding the cost to expand in California, let alone relocate to within the state (trucks, forklifts, ambient air issues, etc.).

We would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that our local utility providers can confidently inform us that they can accommodate any new electrical hook-up which would be

8-2

required due to the installation of a new system in order to avoid any additional delays for occupancy of our properties. The threat of “Black outs,” “Business Disruption” and “Increased Costs” are very concerning and causing much angst within our business communities. 8-2

Thank you for taking into consideration our concerns. Please contact me and my associates at DAUM Commercial Real Estate Services directly for any additional questions or concerns.

Sincerely,

*Dennis L. Sandoval*

Dennis L. Sandoval  
Executive Vice President / Principal  
DAUM Commercial Real Estate Services

Direct: 562-576-1421  
Email: dsandoval@daumcre.com

### **Response to Comment Letter #8**

*Response to Comment 8-1:*

Staff appreciates your comment. Please see Response to Comment 7-1.

*Response to Comment 8-2:*

Staff appreciates your comment. Please see Response to Comment 7-2.

**COMMENT LETTER #9: ELIZABETH ELLIOTT**

Comment Letter #9

**Peter Campbell**

**From:** Mel and Elizabeth Elliott (phoebeintheforest) <melandlizelliott@gmail.com>  
**Sent:** Monday, October 14, 2024 12:36 PM  
**To:** Curt Hagman (GBM); Supervisor.Rowe@bos.sbcounty.gov; Peter Campbell  
**Subject:** [EXTERNAL] Rules 1111 & 1121

Dear Mr. Hagman, Ms. Rowe and Mr. Campbell:

Thank you for taking the time to read my email.

I am a resident of Lake Arrowhead, CA and have lived on the mountain since 1980. While my home is a 45-minute drive away from the valley and in the county of San Bernardino, it may as well be hundreds of miles away in regards to weather! My garden reflects this difference: daffodils in the spring, peonies in the summer, autumn color, and white Christmases in the winter. Weather-wise, the mountain communities have more in common with New England than with the rest of the Inland Empire.

Because of this dramatic difference in weather and temperatures, our communities need an exception to Rules 1111 and 1121. The planned changeover mandating electric heat and water heating appliances is unnecessarily punitive! An unelected group of people who are ignorant of the different climates in our vast state are making rules for people who live in moderate-climate areas because that is where they live and what they experience.

9-1

Electric bills will soar in the mountains. Guaranteed. These rules will cause a lot of hardship on this mountain. **So I am asking that there be an exception put into place for people who live above the 3,000 ft. elevation.** It is not right...or even "scientific"...to place everyone under the same rules. There must be an exception for those living in a cold climate. One size does not fit All, or even Most.

9-2

Thank you for your consideration,

Elizabeth Elliott  
 Lake Arrowhead, CA

**Response to Comment Letter #9***Response to Comment 9-1:*

South Coast Air Basin has been classified as "extreme" nonattainment for the 2015 8-hour ozone standard and the region has the worst air quality in the nation. Therefore, there is a need to identify and propose cost-effective control/compliance options, while striving to achieve the emission reductions necessary for regional air quality attainment, especially given the magnitude of the emission reductions required to meet the ozone standards.

The South Coast AQMD Governing Board (Board), who will ultimately decide to approve or disapprove the proposed rule amendments, is comprised of elected officials and appointed officials. The Board has 13 members; ten are elected officials. Of these, four are county supervisors representing Los Angeles, Orange, Riverside and San Bernardino counties, elected to South Coast AQMD's Board by their Boards of Supervisors. Six are City Council members representing the cities in each county (because of its size, Los Angeles County has two representatives, elected by respective city selection committees, and the City of Los Angeles has one representative, selected by the Mayor of Los Angeles). The remaining three Board members are appointed by state elected officials; one by the

Governor of California, one by the Speaker of the State Assembly and one by the State Senate Rules Committee. The Board includes representatives from all areas within the jurisdiction of the South Coast AQMD to ensure the concerns of all the residents are considered.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands that the mountain communities have cold climates as compared with the other areas of South Coast AQMD; however, as discussed in Chapter 2, zero-emission technologies have been adopted in many cold climate regions. Please see Response to General Comment 8 for further discussion on high altitudes.

*Response to Comment 9-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Staff acknowledges that for consumers who choose zero-emission units, the upfront cost may be higher in many cases; however, based on the IEPR projected rates for electricity and natural gas in future years, staff has identified operational cost savings due to the higher efficiency of zero-emission technologies. Please see Response to General Comment 2 for further discussion on cost. Please see Response to General Comment 4 for more information on technology readiness.

**COMMENT LETTER #10: GREGORY RICE**

Comment Letter #10

**Peter Campbell**

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**From:** greggrice@aol.com  
**Sent:** Monday, October 14, 2024 9:53 AM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Comments on 1111 & 1112

I want to comment about the proposal the AQMD is working on to amend rule 1111 and 1121.

I understand your intent to limit emissions from natural gas fueled appliance. However, I feel the industry is not ready for that change.

First, I have directly contacted multiple manufacturers of both HVAC Heat Pumps and manufacturers of Domestic Water Heat Pumps. The response so far is that even the new high efficiency heat pumps are not really very efficient in areas above 4500 ft. elevation because of the cold temperatures in the wintertime combined with the freezing rain and snow. I even looked into geothermal units and got the same response. Although different refrigerants are available and different percentages of antifreeze could be used for a closed loop geothermal system, the installation instructions and comments to questions asked resulted in a low ambient temperature of 20 degrees to prevent the heat pumps from ceasing.

10-1

Some recommended dual fuel systems, but of course the second fuel would be natural gas which you are intending to eliminate. A few (like Trane) provide efficiency charts of their most efficient cold climate units based on ambient temperature. Below 20 degrees, the efficiency really drops off. Some use a cycle to provide heat to the heat pump and heat exchanger to provide the unit from ceasing up. Unfortunately, it is taking heat back from the conditioned space and cooling the inside of the house or using heat elements that draw a lot of power. When it is below 20 degrees outside, the inside is provided with colder air at a time when the occupants need warmth. Additionally, the heat pumps are designed to run continuously. Therefore, the cold air can't even be turned off.

10-2

I was also informed, and I verified that the typical house electrical would have to be upgraded to 200 Amp services for the heating and water heating heat pump systems. Additionally, your likely next step will be to require other gas fueled appliance follow suit and be converted to heat pumps. The additional demand for the additional appliance (stoves, dryers, etc.,) would require the services be upgraded to 400-amp services. Something SCE does not approve for residences in

10-3

**the mountain areas. Because of the temperature limits on lithium batteries, battery backups for solar is also considered a fire hazard.**

10-3

**I doubt SCE has grid upgrade plans in place to cover the capacity needed for your proposed rule changes.**

**In fact, SCE currently recommends gas fueled generators be in place for the mountain areas because of the many power outages caused by maintenance or periods of fire hazards. In the area I live, over the past 4 years we have averaged at least two such outages a month, mostly during cold weather.**

10-4

**I truly believe that you are proposing rule changes that will likely cause illness, or death to many residents in the mountains above 4500 ft elevation. Having worked in both the north and south deserts for many years, I believe it will have similar health impacts in those areas as well. Contrary to common belief, the deserts get very cold during winter. And the electrical power grid is not at the same level in the deserts or mountains.**

10-5

**That doesn't even take into consideration the financial impact to residents or business owners.**

**A final note: Your reason for the rule changes is to improve air quality for health of the residents in your region. As you propose these changes, are you also amending your budget for the potential of a class action lawsuit because of the more immediate negative health impacts to the residents in the mountain and desert areas and the of higher fire risk from battery backup to solar? The efficiency of solar during winter months really drops because of shading from the tall trees, cloud cover, fog, or snow on the panels. Thus, some type of backup is necessary, which generally seems to require natural gas.**

10-6

**Gregory Rice  
PO Box 1455  
Crestline CA 92325**

**Response to Comment Letter #10***Response to Comment 10-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Cold climate heat pumps are available on the market and can operate at outside air temperatures as low as negative 25 degrees Fahrenheit. Geothermal heat pumps are not reliant on outside air and can operate even in very cold conditions. For further discussion on cold climate heat pumps, please see Response to General Comment 8.

*Response to Comment 10-2*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Heat pumps, especially ones designed for cold climates, often have a defrost mode to prevent the outside unit from freezing over. Cold climate heat pumps are built to work down to negative 25 degrees Fahrenheit, and to work efficiently down to 20 degrees Fahrenheit. Average heat pumps will achieve above 200 percent efficiency at 20 degrees Fahrenheit and cold climate heat pumps will achieve 188 percent efficiency even at 0 degrees Fahrenheit.<sup>(9)</sup> This efficiency is much higher than the most efficient gas furnace with efficiency below 100 percent. Dual fuel systems using a natural gas furnace will have higher emissions and less energy efficiency. Please see Response to General Comment 8 for further discussion on high altitudes.

*Response to Comment 10-3*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Many homes with 100 amps never get close to maxing out that limit, according to Blake Herrschaft, building electrification programs manager at Peninsula Clean Energy, a California provider of 100 percent carbon-free electricity. Technology advances in the last few years, from low-power 120V heat-pump water heaters to smart electrical panels that automatically flatten demand peaks by pausing nonessential loads, make 100-amp electrification feasible. That is especially true for single-family homes that are under 2,500 square feet.<sup>(10)</sup> Please see Response to General Comment 4 for further discussion on technology readiness.

*Response to Comment 10-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

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<sup>(9)</sup> <https://learnmetrics.com/best-heat-pumps-for-cold-climates/>

<sup>(10)</sup> <https://www.canarymedia.com/articles/electrification/yes-its-possible-to-electrify-a-home-on-just-100-amps>

The topic of grid infrastructure was brought up during the public process, and staff has been in contact with utilities and other state organizations on grid reliability topics. Staff recognizes there are challenges for certain situations, and the new proposed rule concept addresses the concern. Through conversations with utilities, staff found there are existing efforts on the utility and state level to address future electricity demand and reliability, and some of these points are described in Chapter 2 of this staff report. For more information on the electric grid, please refer to Response to General Comment 3.

Staff also recognizes the health benefit to communities. BAAD evaluated ambient air quality and health impacts from NO<sub>x</sub>-emitting natural gas-fired furnaces and water heaters in commercial and residential buildings in support of the zero-emission standards BAAD adopted in March 2023. According to the BAAD staff report, the proposed zero-emission space and water heaters in residential and commercial buildings will result in reductions in NO<sub>x</sub> emissions and reductions in secondary PM<sub>2.5</sub> across the Bay Area. These reductions in secondary PM<sub>2.5</sub> avoid an estimated 23 to 52 deaths per year and about 71 new cases of asthma per year. Reductions in total PM<sub>2.5</sub> attributable to the targeted appliances, including reductions in primary PM<sub>2.5</sub> from adoption of electric appliances, would avoid an estimated 37 to 85 premature deaths per year and about 110 new cases of asthma each year. The valuations of the health impacts from total PM<sub>2.5</sub> were estimated to be between 400 to 890 million U.S. dollars annually. Similar benefits would accrue to communities in the South Coast AQMD.

#### *Response to Comment 10-5*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

The rules are proposed for cleaner air to protect public health. Regarding the previous rule concept, the BARCT assessment determined the proposed zero-emission standards with future effective implementation dates were feasible. Staff is committed to monitoring the rule implementation after rule adoption, providing periodic updates to the Stationary Source Committee, and conducting technology check-in(s).

#### *Response to Comment 10-6*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

Staff also understands that residents in the mountain areas may consider back-up power generation technologies as important resources in case of power outages during the winter months. PAR 1111 and 1121 do not contain any back up power requirements that would require or limit the use of or types or back-up power technologies. For further discussion on high altitudes, please see Response to General Comment 8.

It is essential for electrical generation and local grid infrastructure to meet demand. Local utilities such as SCE are mapping service areas, including the mountain communities, to determine where upgrades are needed. On the other hand, as the country transitions to a cleaner power grid, researchers are searching for the best ways to integrate energy storage



for backup power.<sup>(11)</sup> Staff will maintain regular contact with utilities and monitor the implementation. For further discussion on the electric grid, please see Response to General Comment 3.

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<sup>(11)</sup> <https://www.nrel.gov/news/program/2024/how-mountains-could-store-mountains-of-clean-energy.html>

**COMMENT LETTER #11: BOB HELBING****AIR-TRO HEATING & AIR CONDITIONING**

1630 S. Myrtle Ave. Monrovia, CA 91016  
 (626) 357-3535 [www.airtro.com](http://www.airtro.com)  
 CSLB Lic. #258228

October 14, 2024

Comment Letter #11

SCAQMD

ATTN: Peter Campbell

Via email at:

pcampbell@aqmd.gov

21865 Copley Dr.

Diamond Bar, CA 91765

SUBJECT: PAR 1111 &amp; PAR 1121

Dear Mr. Campbell:

The purpose of this letter is to comment on Proposed Amended Rules (PAR) 1111 and 1121. The proposed changes to PAR 1111 and PAR 1121 are flawed to the point of being unworkable. They will not improve air quality within the District, but they will inflict significant economic harm to the residents of the District.

My credentials on the topic come from being a fourth-generation contractor, a third generation engineer with a B.S. in Mechanical Engineering from the California Institute of Technology (Caltech), 30 years as owner and manager of a \$15 million HVAC firm (Air-Tro, Inc.), past President of the Institute of Heating and Air Conditioning Industries (IHACI) as well as past President of the Monrovia Chamber of Commerce. This has given me practical experience, academic and technical education, and decades of work within the community as a tradesman, advocate and industry leader.

The proposed changes ignore basic scientific facts about ozone formation. The economic analysis is based on bad numbers. And the conclusions are made in defiance of recent court cases that deny local agencies the power to ban gas appliances. Staff should withdraw these proposals and rework them using better scientific models and more accurate economic projections and with a consciousness of legal limits to SCAQMD authority.

PAR 1111 and PAR 1121 ban the sale of gas appliances for comfort heating and water heating on the basis that these appliance emit oxides of nitrogen (NOx) which are precursor chemicals to ozone. Ozone is a major component of smog, and ozone levels in the District routinely exceed EPA limits.

11-1



However, gas appliances don't emit very much NOx. The District sees close to 400 tons of NOx emissions daily. Of that total, only about 10 tons (or about 2.5%) come from gas furnaces and water heaters. By way of comparison, a single container ship by itself emits just over 10 tons of NOx daily (assuming a 40,000 kw power plant emitting 10g/kwh).

Not only that, but the small amounts of emissions from these units occurs when ozone formation is already at its lowest level due to natural conditions. NOx also does not create ozone by itself. It requires energy from solar ultraviolet rays to break off oxygen ions from N<sub>2</sub>O. These free oxygen ions then combine with oxygen molecules to form ozone. The more sunshine, the more ozone. We can see this if we look at SCAQMD data for peak ozone days at their Rubidoux Riverside sampling station, which records some of the worst ozone conditions in the district. (Attachment #1). *All* occurrences where ozone levels exceed the EPA's one-hour limit (90 parts per billion) take place on afternoons where high mean outdoor temperatures exceed 84°.

11-1

What are these units doing when natural conditions favor ozone creation? They aren't running. Furnaces operate on cold winter nights, not hot summer afternoons. The highest ozone level in the dataset is 139 ppb on August 29 at 2pm, on a 103° day, and we can be assured no one had their furnace running when it's 103° out. Water heating is more distributed, but domestic hot water is most in demand in the early morning or early evening for use in showers, laundry, and washing dishes. Few people shower at 2pm.

In short, PAR 1111 will achieve *no* changes in peak ozone levels, and PAR 1121 will have an impact too small to be measured. Neither rule will bring district ozone closer to EPA compliance.

The economic calculations provided by staff are equally flawed. A ban on gas furnaces and water heaters will force customers to rely on electrically driven heat pumps. By the calculations of district staff (Slide #25 of the Working Group #4 presentation, available at <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm4-april-2024.pdf?sfvrsn=14>), residents currently pay the gas company 6¢ per kilowatt-hour of energy while electricity costs 26¢/kwh, over 4 times as much. That 26¢/kwh estimate is far too low. As an Edison customer, I currently pay winter rates of 43¢/kwh (Attachment #2). In addition, on that same slide district staff assumes that gas prices will rise 50% while electricity will only go up 21%. In fact, the CEC's Integrated Energy Policy Report California Energy Commission Report cited by staff (<https://efiling.energy.ca.gov/GetDocument.aspx?tm=254463>) predicts "gas price projections out to 2050 remain relatively steady," while Edison has requested a 46% electricity rate hike by 2028 (<https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/pao/customer-notices/cn-2023/sce-grc-2025--a2305010--final.pdf>). That will take rates from 43¢/kwh to 63¢/kwh, more than ten times the 6¢/kwh cost that same amount of energy costs when purchased as natural gas. Increasing energy costs by a factor of ten is an unconscionable burden on the communities that make up the district.

11-2

In addition, district staff overestimate the energy efficiency of heat pump technology. One of the major benefits of heat pumps is that they don't create heat. Instead they move it (or pump it). They capture outdoor heat and bring it inside to heat the home (or the home's hot water). As a



result, for every kilowatt of energy used, several kilowatts of heat result. The ratio of heating to consumption is called the COP (coefficient of performance). Unfortunately for their analysis, district staff assumed a COP of 5, or five times as much heat is generated for every unit of energy consumed. There are indeed heat pumps capable of this high level of performance. They are called “ground source heat pumps” and rely on coiled heat exchangers buried or submerged below grade to use soil or water as a heat source. Such systems are used successfully in other parts of the country, but to function they need at least a half-acre of land or an adjacent water feature such as a lake or pond.

There are few residential lots of such size or with access to such water features within the district. Even for homes with large lots, the cost of trenching to lay the lines runs into the tens of thousands. Trenching for typical ground source heat pump system in the Midwest can run over \$50,000. It’s hard to imagine what the cost would be in Southern California, which has some of the highest construction costs in the nation. It’s also unclear if such work could even be permitted; no local building department has the expertise to oversee such work.

Air source heat pumps, on the other hand, are frequently installed in Southern California. These require no trenching or other exotic techniques. In fact, they look and operate just like residential central air conditioning units. But their efficiencies don’t match ground source models. The very best air source heat pumps have COPs of 3 (or just a bit less). By using a COP of 5 rather than 3 district staff overestimated heat pump performance and underestimated energy use by 66%. Combine this with the miscalculated electricity rates, and calculated costs for one kwh of heat rises from staff estimates of 6¢/kwh to an expected cost of 21¢/kwh, or three and a half times higher.

11-2

Similar errors exist in district staff’s estimates of first costs. They used historical information from the TECH fuel swapping program for the cost of a heat pump installation, which yielded a figure of \$7,000 for installation. But the majority of heat pumps installed under that program were mini ductless systems. The majority of furnaces installed in the district are for ducted central heating systems. Replacing these with ducted heat pumps would cost at least \$15,000 and that presumes no major electrical upgrades are needed. A new electrical service would add another \$5,000 to \$8,000.

District staff similarly used incorrect numbers to estimate expected equipment life. They used estimates of TECH staff that heat pumps and furnaces have similar lifespans of about 20 years. However, furnaces only run in the winter while heat pumps provide summer cooling as well as winter heating. The increased run time means increased wear and tear, and in fact heat pumps only last 10 to 15 years. This raises life cycle costs from staff estimates of \$350/yr (\$7,000 divided by 20 years) to actual costs of either \$1,000/yr (\$15,000 divided by 15 years) or \$1,330/yr if electrical improvements are needed. Again, costs will prove to be three to four times higher than staff estimates.

Staff frequently refer to a proposed “Go Zero” rebate program being offered to disadvantaged communities or homeowners to help mitigate these costs. The proposed funding of \$50 million will not go far in a District with 17 million residents; the funding amounts to about \$3/resident.

11-3



Let's touch briefly on the legal issues, with SCAQMD potentially embarrassing itself through regulatory overreach. In 2019 the city of Berkeley banned gas hookups to new structures built within their city. Within two years dozens of other California cities and counties passed similar bans. The California Restaurant Association sued to overturn the ban and earlier this year prevailed before the Ninth Circuit Court of Appeals. The court ruled that the only authorities that can issue such a ban are the US Congress and the Federal Department of Energy. If the district moves forward with this ban, they can expect to see it swiftly overturned by the courts.

11-4

If the Board approves PAR 1111 and 1121, the response from industry trade groups like PHCC (Plumbing, Heating and Cooling Contractors) and AHRI (American Heating and Refrigeration Institute) will likely be swift. SCAQMD will likely find itself in prolonged, expensive and ultimately embarrassing legal action, seeing its efforts set aside by the Federal courts.

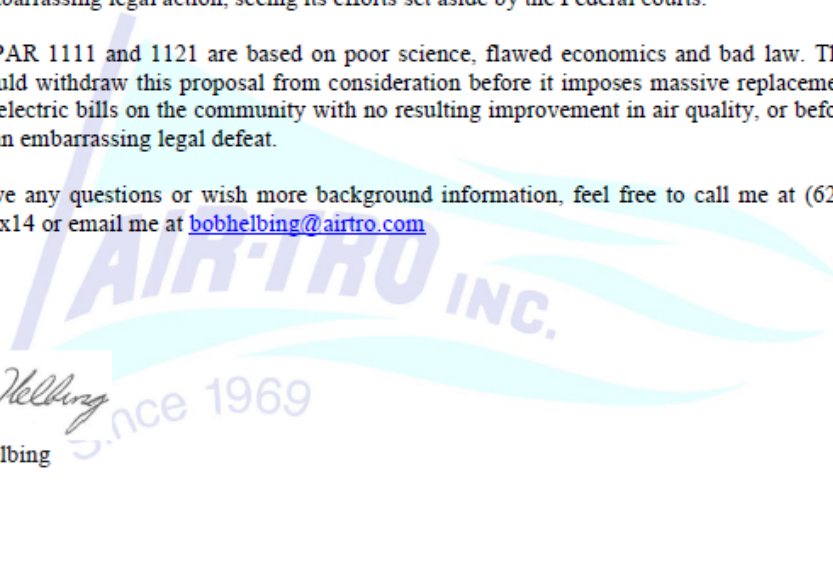
In short, PAR 1111 and 1121 are based on poor science, flawed economics and bad law. This board should withdraw this proposal from consideration before it imposes massive replacement costs and electric bills on the community with no resulting improvement in air quality, or before it suffers an embarrassing legal defeat.

If you have any questions or wish more background information, feel free to call me at (626) 357-5315 x14 or email me at [bobhelbing@airtro.com](mailto:bobhelbing@airtro.com)

Sincerely,



Robert Helbing  
President



**Response to Comment Letter #11***Response to Comment 11-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1111 and PAR 1121 are technology and fuel-neutral and are focused on achieving the maximum NOx emission reductions possible. Equipment that meets the NOx emission limits, regardless of the energy source, is not prohibited by PAR 1111 or PAR 1121.

For information regarding the emissions inventory, please refer to Response to Comment PW-4. By reducing NOx emissions, PAR 1111 and PAR 1121 would achieve control on both ozone and PM2.5 formation. While ozone formation is most efficient during peak UV production hours, it still occurs during other daylight hours and NOx concentrations are still relevant outside of those peak hours. In addition, NOx emitted in the early morning, even though it may still be dark, will have a much longer chemical lifetime for daytime reactions or be transferred to eastern part of the region for warmer daytime reactions. NOx is also an important PM2.5 precursor making NOx reductions from the ozone control strategy instrumental in attaining federal standards for PM2.5. Additionally, PM2.5 levels are highest in the winter months during the overnight hours with nearly all exceedances of the 24-hour federal standard occurring between November and February.

*Response to Comment 11-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

As discussed in Chapter 2 for zero-NOx emission unit installations, staff analysis relied upon the fuel price estimates which are based on a combination of the CEC's 2023 IEPR and EIA national level forecasts extended to 2050. Electricity forecasts are based on the LADWP and SCE planning areas. Natural gas forecasts are based on SoCalGas forecasts. Forecasted prices will not match observed electric and natural gas prices in any given year and may differ materially.

The commenter mentioned "gas price projections out of 2050 remain relatively steady" is modeled prices at California's Malin and Topock border hubs, which reflect what utilities or large end users (for example, power plants and industrial) pay for gas delivered to the state's borders from out-of-state suppliers (shippers, supply basins, third party marketers). Those wholesale prices at the border do not reflect retail prices. Staff believe the IEPR and EIA forecasted rates for consumers are more appropriate for the purpose of this rule analysis.

Staff analysis on the fuel switch/operational cost is based on the 2019 RASS released by the CEC. The RASS includes information on the energy use of both electrical and natural gas appliances in Californian's homes. Heat pump energy efficiency rate was not utilized in the calculation; however, staff has included the discussion of the technologies and their efficiencies with the references to information sources in Chapter 2.

Most of the homes in the region have a 100-amp or 200-amp panel, which means minimum construction for electrical upgrade would be needed for those homes if the consumer chooses a zero-emission unit. Staff recognizes that there may be some cases where a utility upgrade is required and could include trenching, which adds to the cost. While trenching is costly, the end user would not bear the full cost when the trenching is required before the facility's meter. For homes that require construction, PAR 1111 and PAR 1121 provide flexibility in the new rule concept.

Regarding the upfront cost, staff understands a ducted heat pump could cost \$15,000. However, the rules apply at natural replacement when a new installation is needed with or without the rule requirements. Therefore, analysis would count the incremental cost, which is the difference of installing a zero-emission unit versus a conventional unit.

The expected equipment life used in staff analysis is appropriate. The California Public Utilities Commission recently conducted a Residential HVAC and DHW measure Effective Useful Life Study<sup>(12)</sup> and summarized the effective useful life as 23 years for heat pump HVAC and 38 years for heat pump water heaters. Effective useful life is defined as an estimate of the median number of years that the measures installed under a program are still in place and operable.

*Response to Comment 11-3:*

The upcoming Go Zero pilot incentive program will have future phases of the program with potential expansion of a fivefold increase of the funding level. By the new rule concept, mitigation fees will be collected from the sales of gas units to further support Go Zero incentive program. Staff anticipates that Go Zero rebates may be layered with other federal, state, or local incentives, such as: TECH Clean California.

*Response to Comment 11-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The South Coast AQMD rules are technology and fuel-neutral and are focused on achieving the maximum NOx emission reductions possible. Please see Response to General Comment 9 for more details regarding the comment on banning gas appliances.

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<sup>(12)</sup>[https://www.calmac.org/publications/CPUC\\_Group\\_A\\_2023\\_Res\\_HVAC\\_and\\_DHW\\_EUL\\_Study\\_Final\\_Report.pdf](https://www.calmac.org/publications/CPUC_Group_A_2023_Res_HVAC_and_DHW_EUL_Study_Final_Report.pdf)

**COMMENT LETTER #12: BERNARD CANE**

Comment Letter #12

**NAIOP SOCIAL MEMBERS  
SCAQMD PAR 1111 and PAR 1121**

Mr. Peter Campbell  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: pcampbell@aqmd.gov

Re: Comments on PAR 1111 and PAR 1121

Dear Mr. Campbell:

I appreciate the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

I am committed to reducing my carbon footprint while meeting the needs of my poor and struggling tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout my properties and most of these underperforming Pieces of Dog Schiff are made in communist Chyna and last less than a used piece of toilet paper, thus causing another form of waste that you guys created to soil Mother Earth! Shame Shame shame!

12-1

I am concerned that the proposed rules do not consider issues facing commercial and industrial real estate property owners, humanity as a whole, and/or tenants. For example, like all PUC and related regulations and policies emanating from Sacto and the California GOOBERMINT you guys can't get anything right, so all of this is an absolute waste of time until we get some smart people with common sense in Sacto's GOOBERMINT. The level of stupidity and contrarianism boggles the mind!

12-2

I would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that my local utility provider informs me that they can accommodate any new electrical hook-up which would be required due to the installation of a new system in order to avoid any additional delays for occupancy of my bankrupt properties, due to the idiots ruining this state.

12-3

Thank you for taking into consideration my concerns. Please contact a psychiatrist and a priest to confess your sins and stupidity before you all ruin this once great state! If you have any questions, we are already doomed!

Sincerely,

Bernard Cane  
 We, the People///



**Response to Comment Letter #12***Response to Comment 12-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff appreciates the comments and the effort for a better environment. There are many heat pump manufacturers worldwide, with several located in the United States. A list of heat pump manufacturers for space heating and water heating can be found on the Department of Energy website<sup>(13)</sup>.

*Response to Comment 12-2:*

The new rule concept also revised the proposed applicability and will not expand to large size spacing heating units such as commercial furnaces. The revised PAR 1111 and PAR 1121 have minimized the impact to commercial and industrial properties. Please see Response to Comment 7-1 regarding the similar comment.

*Response to Comment 12-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please refer to Response to Comment 7-2 and Response to General Comment 3 for electricity demand and grid sustainability.

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<sup>(13)</sup> <https://www.regulations.doe.gov/eecompass/consumer-products>

**COMMENT LETTER #13: RAQUEL J. COMSTOCK**

Comment Letter #13

**Peter Campbell**

**From:** Raquel Comstock (Rocky) <realtorraq@gmail.com>  
**Sent:** Tuesday, October 15, 2024 1:12 PM  
**To:** Raquel Comstock; Peter Campbell; Jivar Afshar; Jennifer Vinh; PICRequests  
**Subject:** [EXTERNAL] Comment about the proposal the AQMD is working on to amend rule 1111 and 1121.

For our Mountain Communities Temporary, emergency replacements are not practice:

- The current plan is not workable from a cost perspective. 13-1
- In actual emergency situations the possible length of approval times may cause a real hazard to persons or property. 13-2
- If the distributors are not allowed to sell gas-fired furnaces or water heaters, who will have the temporary equipment available? 13-3
- Can all the California Mountain Communities receive an exemption the same as the mobilehome parks? 13-3
- Our weather system in the California Mountains differs from other areas, we need gas as a backup supply because we do not have solar energy available on most of the North Face communities at all. 13-4

Please kindly reply to verify receipt of this email.

Grateful One,  
 Raquel J. Comstock, R.E. Broker  
 CA.DRE lic 02240817

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**Response to Comment Letter #13***Response to Comment 13-1:*

The cost-effectiveness analysis for PAR 1111 and PAR 1121 are included in this report. Please refer to Response to Comment 7-1, Response to General Comment 6, and Chapter 2 of this report for information regarding the cost-effectiveness analysis.

*Response to Comment 13-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

By this new rule concept, consumers may opt to gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.

*Response to Comment 13-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept provides more flexibility and consumer choice. Consumers, including residents in mountain community, may choose to install gas units for challenging situations. Moreover, based on stakeholder comments, PAR 1111 is retaining the exemption of downflow furnaces for high-altitude installation.

*Response to Comment 13-4:*

Staff understands the need for grid reliability and back-up power for installing zero-NOx emission units. For further information, please see Response to General Comment 3.

**COMMENT LETTER #14: TURNER WHITE (DAUM COMMERCIAL REAL ESTATE SERVICES)**

Comment Letter #14

**SCAQMD PAR 1111 and PAR 1121**

Mr. Peter Campbell  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [pcampbell@aqmd.gov](mailto:pcampbell@aqmd.gov)

Re: Comments on PAR 1111 and PAR 1121

Dear Mr. Campbell:

Daum Commercial appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company focuses on Industrial Real Estate in Orange county. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not take into account issues facing commercial and industrial real estate property owners and our tenants. For example, with the price of running a business there are already so many extra fees that most businesses struggle to get a location that works for them when it's time to sign a new lease and these additional costs are only going to make it more difficult for small businesses to grow as they immediately have to

14-1

We would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that our local utility provider informs us that they can accommodate any new electrical hook-up which would be required due to the installation of a new system in order to avoid any additional delays for occupancy of our properties.

14-2

Thank you for taking into consideration our concerns. Please contact Steve Pearson at [steve.pearson@daumcommercial.com](mailto:steve.pearson@daumcommercial.com) 714-307-6511 with any questions.

Sincerely,

Turner White

Salesperson  
DAUM COMMERCIAL

**Response to Comment Letter #14***Response to Comment 14-1:*

Staff appreciates the comment on PAR 1111 and PAR 1121. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability and will not expand to large size spacing heating units such as commercial furnaces. The revised PAR 1111 and PAR 1121 have minimized the impact to commercial and industrial properties. Please refer to Response to Comment 7-1 and Response to General Comment 2 for cost and affordability.

*Response to Comment 14-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Please refer to Response to Comment 7-2 and Response to General Comment 3 for electricity demand and grid sustainability.

**COMMENT LETTER #15: JOSH LEITE (ECM MANAGEMENT)**

Mr. Peter Campbell  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: pcampbell@aqmd.gov

Re: Comments on PAR 1111 and PAR 1121

Comment Letter #15

Dear Mr. Campbell:

ECM Management LLC appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company is involved in ground up development and construction of industrial buildings. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not take into account issues facing commercial and industrial real estate property owners and our tenants. For example, the need to install electric water heaters and furnaces will have added cost implications both for these components (which are costlier than their natural gas options) as well as the added cost for increased electrical service components and usage. Modifying the size of an already design electrical system requires both additional schedule considerations as well as design costs.

15-1

We would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that our local utility provider informs us that they can accommodate any new electrical hook-up which would be required due to the installation of a new system in order to avoid any additional delays for occupancy of our properties.

15-2

Thank you for taking into consideration our concerns. Please contact myself, Josh Leite, with any questions.

Sincerely,



Josh Leite  
Senior Development Manager  
ECM Management LLC

**Response to Comment Letter #15***Response to Comment 15-1:*

Staff appreciates the comment on PAR 1111 and PAR 1121. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability and will not expand to large size spacing heating units such as commercial furnaces. The revised PAR 1111 and PAR 1121 have minimized the impact to commercial and industrial properties. Please refer to Response to Appendix C Comment 7-1 and Response to General Comment 2.

*Response to Comment 15-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use. Please refer to Response to Appendix C Comment 7-2 and Response to General Comment 3.

**COMMENT LETTER #16: HEATHER COLLINS****Peter Campbell**

**From:** Heather Collins <heatherashlyncollins@gmail.com>  
**Sent:** Tuesday, October 15, 2024 3:58 PM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Gas Appliance Issues for Mountain Areas

Comment Letter #16

Hello

As a recent resident of Crestline it came to my attention that there is a measure that would require us to get rid of all our gas appliances. After going to a few meetings and talking with neighbors who lived through the large ice storm, I feel this would be detrimental to people's health and may even cause unintentioned death. Many of my neighbors relied on their gas appliances to stay warm and cook when they were trapped in the blizzard. Trees fell on the power lines in the area and made using electricity impossible. I also heard of a few people who didn't have gas appliances pass away during this time, since they were trapped for weeks on end and eventually froze to death here. I understand the importance to try and do what we can for the environment, I feel like most people that live up here have a respect and love for the planet and trees that surpass most people that live in the large cities but I dont feel like forcing communities that have such drastic weather to install something that could be a potential hazard and potential legal liability is the answer.

16-1

Please reconsider this mandate  
 Thank you

--

Heather Ashlyn Collins  
 BG Designer/Painter  
<http://www.heatherashlyndesign.com/>  
 IG: HeathBarDraws  
 TRAUST OG VIRÐING

**Response to Comment Letter #16***Response to Comment 16-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands that the mountain communities have a cold climate and heating in wintertime is essential. As discussed in Chapter 2, zero-emission technologies have been adopted in many cold climate regions. PAR 1111 and PAR 1121 are technology neutral, and the new rule concept addresses concerns for high altitudes. Please see Response to General Comment 4 and Response to General Comment 8 for more about the zero-emission technologies adopted in cold climate regions. For further discussion on grid reliability and back-up power sources, please refer to Response to General Comment 3.



**COMMENT LETTER #17: NANCY HOSKINS****Peter Campbell**

**From:** nancy nieto <nancynieto36@yahoo.com>  
**Sent:** Tuesday, October 15, 2024 7:37 PM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Rules 1111 and 1121

**Comment Letter #17**

In 1952, my parents bought out home in the San Bernardino Mountains. I was 8 years old and now I am 80. The house is 100.

It is important to note that the environmental study for Rules 11 11 and 11 21 did not review the mountain ranges of Southern California. Winter weather in the mountains includes freezing temperature, snow, sleet and powerful winds. The elevation where I live is 5,000 feet. From my research, it appears that the unique mountain conditions were not considered in the AQMD Board's evaluation.

A heavy winter snow storm regularly causes a power outage that leaves freezing temperatures in homes. Roads are laden with snow and in non-maintained County roads, they are not plowed. That means that there is no way out and no way in. During the blizzard 2 years ago, I was snowed in for 3 weeks.

The feeling of isolation is very scary: no heat, no lights, no tv, WiFi or landline. There is no way to order a delivery of food. I live with my cousin and we depend on these services.

Solar power is not practical when there is heavy snow. No sunshine; no electricity. Fog can do the same thing

: no sunshine, no electricity. Fierce winds break the branches off trees; they fall on the power lines and take them down. No electricity is the result. My generator and fire place saved my life. Two warm

dogs were also a help. We would cuddle in front of the fireplace.

Nancy

Hoskins.

25131 Grandview Dr.

Crestline, CA. 92325.

(909) 589-0439

Sent from my iPhone

17-1

**Response to Comment Letter #17***Response to Comment 17-1:*

Staff appreciates your comments. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Staff evaluated the feasibility of heat pumps in cold climates as part of the BARCT assessment, which can be found in Chapter 2 of this report. Cold climate heat pumps can pull heat from the air even at sub-zero temperatures and are utilized in colder climates in the U.S. and abroad. Please see Response to General Comment 8 for more about the zero-emission technologies adopted in cold climate regions. Please refer to Response to General Comment 3 for information regarding electricity demand and grid sustainability. Sustainable electricity supply is essential for both zero-NOx emission and NOx-emitting units. Many natural gas appliances also rely on electricity to operate. For example, all gas-fired fan-type central furnaces currently regulated by Rule 1111 require electricity to operate and therefore cannot operate during a power outage. Some older model water heaters may not need electricity to operate; however, newer features on modern water heaters require electricity to operate. Further, for tank type water heaters, the water in the tank will stay warm for several hours in the event of a power outage.

**COMMENT LETTER #18: C. C. SONG (CLEAN POWER ALLIANCE)**

October 16, 2024

South Coast Air Quality Management District  
Planning, Rule Development, and Implementation  
21865 Copley Dr.  
Diamond Bar, CA 91765

Comment Letter #18

**Re: Clean Power Alliance Comments on SCAQMD PARs 1111 and 1121**

Clean Power Alliance of Southern California ("CPA") appreciates the opportunity to provide comments on South Coast Air Quality Management District's ("SCAQMD") Proposed Amended Rules 1111 and 1121 ("PARs"). CPA is generally supportive of the PARs' approach to reduce nitrogen oxide ("NOx") emissions from natural gas-fired furnaces and water heaters by implementing zero-emission appliance standards. CPA commends SCAQMD's development of the Go-Zero Rebate Program which will help customers and the market prepare for and adapt to the PARs.

CPA recommends the following modifications to, or related to, PARs 1111 and 1121:

- Expand current public outreach efforts to a broader stakeholder base before the SCAQMD Board votes to adopt the PARs;
- If adopted, develop and implement a thorough public education, engagement, and outreach strategy focusing on the general public and community-based organizations;
- Incorporate panel upgrades, equipment rentals, and construction costs associated with transitioning to PAR-compliant appliances in the Go-Zero Rebate Program; consider requiring decommissioning non-compliant equipment as part of the program; and align the program with other complementary incentives; and
- Consider additional incentives for demand response enabled appliances and controls to enable responsiveness to periods of peak demand to reduce customer operational costs and increase grid reliability.

CPA further recommends SCAQMD coordinate among:

- Stakeholders to identify and develop opportunities to stack the Go-Zero Rebate Program with other incentives to maximize their impact; and
- Local permitting agencies to encourage the acceleration of permitting process timelines and mitigate unnecessary delays associated with appliance electrification.

CPA appreciates SCAQMD's substantial considerations of the impacts of increased electrical load as a result of implementing the PARs on the state's resources. SCAQMD's analysis of grid reliability in their



801 S. Grand Ave., Suite 400, Los Angeles, CA 90017  
[cleanpoweralliance.org](http://cleanpoweralliance.org)

draft staff report<sup>1</sup> demonstrates SCAQMD has invested the time and resources to address such an important and pressing issue.

#### **Background**

CPA is California's largest community choice aggregator ("CCA"), serving over three million residents and one million customers across 35 communities in Los Angeles and Ventura counties. CPA is governed by a Board of locally elected officials who represent and serve our communities. CPA has been ranked the number one green power provider in the United States by the National Renewable Energy Laboratory ("NREL") for two years in a row.<sup>2</sup>

CPA helps our customers and communities enhance resilience, conserve energy, reduce harmful greenhouse gas emissions, and save money on their electric bills. We seek to recognize and address the importance of healthy communities, including those disproportionately affected by air pollution and climate change. CPA advances the efforts noted above, in part, through our customer programs. CPA offers programs that provide incentives and benefits for low-income customers and disadvantaged communities that mitigate energy affordability challenges while advancing clean energy solutions.

The PARs and Go-Zero Rebate Program will help equitably improve the air quality, reduce emissions, and mitigate costs associated with the clean energy transition for CPA's customers and the communities we serve.

#### **CPA Supports SCAQMD's Approach in PARs 1111 AND 1121**

CPA understands the potential long-term health, climate, and cost benefits associated with expanding use of zero-emission appliances and electrification in general. With improved indoor air quality and no combustion and greatly reduced fire risk, all-electric buildings are safer and healthier to live in along with being cost effective. The potential benefits of zero-emission appliance standards are magnified in CPA's service territory considering CPA is recognized as the leading green power provider among all utilities in the country.

CPA also understands there are challenges with electrification that must be addressed to achieve emissions reduction. Cost impacts associated with electrification, including upfront and capital costs, especially to low-income customers, are of particular concern to CPA.

CPA therefore recommends SCAQMD adopt the PARs after incorporating the recommendations and considerations discussed below.

#### **SCAQMD Should Pursue Wider Education, Engagement, and Outreach Strategies and Practices**

CPA recommends SCAQMD 1) immediately identify and coordinate with community partners who may not have been engaged in the development process to solicit feedback and expand awareness of the

18-1

<sup>1</sup> Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NOx Emissions From Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NOx Emissions From Small Natural Gas-Fired Water Heaters ("Preliminary Draft Staff Report"), September 2024, at pp. 2-23 – 2-26.

<sup>2</sup> NREL 2023 Utility Green Power Rankings, 2024, at pp. 3 and 6. Found here: <https://www.nrel.gov/analysis/assets/pdfs/green-pricing-top-10-2022-data-plus-archives-28aug2024.pdf>

PARs before the SCAQMD Board votes to adopt the PARs, and 2) if the PARs are adopted, build upon those identified stakeholders to further expand general public and consumer awareness of the PARs through the end of the PARs compliance timelines. CPA would be happy to work with SCAQMD staff to collaborate on options and strategies to connect with community partners, local governments, and utilities both before and following the potential adoption of the PARs.

A thorough public education, engagement, and outreach strategy is important to the success of SCAQMD's PARs and will improve customers' abilities to plan for potential changes in costs and installation needs or time that may result from compliance with the standards. SCAQMD staff have driven an extensive and ongoing outreach process to seek, receive, and incorporate input throughout the development of the PARs. However, it is apparent that the stakeholders SCAQMD has been able to engage with have been largely limited to those who will have compliance obligations: manufacturing and contractor experts. Unfortunately, members of (or representatives of) the general public, energy consumers, and community-based organizations ("CBOs") have not been extensively engaged across the development of the PARs to the same extent as manufacturing and contractor experts.

18-1

Though SCAQMD's engagement efforts are extensive they are often conducted through e-newsletters and email distribution lists, meaning stakeholders who are 1) aware of SCAQMD and its purpose, and 2) savvy enough to sign up for the proper distribution lists will be most aware of and prepared to provide their input on SCAQMD efforts.

In the immediate term, CPA urges SCAQMD rapidly engage community partners (such as CBOs representing low-income residents and disadvantaged communities) to solicit further input and perspectives before SCAQMD votes on the adoption of PARs 1111 and 1121. CPA suggests SCAQMD engage members of its Environmental Justice Advisory Group<sup>3</sup> ("EJAG") to help identify and solicit input from regional CBOs who have not yet provided input on the PARs before SCAQMD's Board votes on the PARs. SCAQMD staff could coordinate with the CBOs SCAQMD and the EJAG are already engaging regarding application assistance under the Go-Zero Rebate Program ("Rebate Program").<sup>4</sup> Given the compressed timeline between submitting these comments and the anticipated Board vote in December 2024, CPA reiterates our interest in assisting SCAQMD staff identify and engage community partners and local governments.

18-2

Assuming the PARs are adopted, CPA then recommends SCAQMD continue to identify and engage community partners to develop and execute a thorough education, engagement, and outreach strategy through the end of the final compliance deadline to improve public awareness of the standards and Go-Zero Rebate Program. CPA suggests SCAQMD continue its collaboration with members of its EJAG and expand those efforts to members of similar groups and committees, such as the California Air Resources Board ("CARB") Environmental Justice Advisory Committee<sup>5</sup> and the Disadvantaged

<sup>3</sup> <https://www.aqmd.gov/nav/about/groups-committees/environmental-justice-advisory-group>

<sup>4</sup> SCAQMD EJAG meeting presentation, August 30, 2024, at slide 12, found here: <https://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/rescheduled-2024-ejag-agenda-august-30.pdf?sfvrsn=9>

<sup>5</sup> <https://ww2.arb.ca.gov/environmental-justice-advisory-committee>

Communities Advisory Group<sup>6</sup> advising California Public Utilities Commission (“CPUC”) and California Energy Commission (“CEC”) actions.

CPA also suggests SCAQMD incorporate efforts to collaborate with local governments and utilities regarding solutions to unnecessarily prolonged service upgrade processes in its strategy. Some installations of appliances compliant with the PARs will require service and/or panel upgrades which can take more than 12 months to complete.<sup>7</sup> As an example, the alternative compliance option for emergency replacements could be particularly burdensome to low-income customers who need to upgrade to electrical appliances as a result of an unexpected equipment failure. That could add months or years of rental costs and could potentially exceed the 6-month alternative compliance rental option afforded to emergency replacements in the PARs. Similarly, CPA urges SCAQMD to coordinate with local permitting agencies to resolve challenges to quickly reviewing electrification upgrade permit applications to help streamline the process and reduce the need for temporary gas equipment.

18-3

The PARs will affect millions of customers across SCAQMD’s jurisdiction and SCAQMD’s engagement of and coordination with the impacted public should reflect the scope of the PARs’ impacts.

#### **The Go-Zero Rebate Program Should Address Additional Incentives Opportunities**

CPA supports the Rebate Program and recommends SCAQMD to make the following changes:

- Expand the scope of its Rebate Program to mitigate costs, borne by low and moderate-income customers, of necessary infrastructure upgrades (e.g. panel upgrades) or construction to transition to appliances that comply with PARs 1111 or 1121;
- Ensure the Rebate Program is stackable with other incentives that will help ease upfront compliance costs;
- Coordinate with stakeholders to identify and expand access to other incentives, including those not associated directly with the upfront costs of the appliances themselves. This could include panel upgrades, equipment rentals, permitting fees and other required costs to electrify;
- Consider requiring decommissioning non-compliant equipment as a requirement for participation in the Rebate Program; and
- Consider higher incentives for demand response-enabled devices and controls to enable grid responsiveness and increase customer abilities to lower operational costs.

18-4

SCAQMD’s Rebate Program will appropriately direct fees collected for non-compliance with the PARs and reinvest those funds in compliant appliance incentives. Even with the Rebate Program’s incentives, customers may still face significant upfront costs associated with compliance with the PARs – including costs that extend beyond the capital costs of the appliances which are not currently considered in the Rebate Program. The cost of a panel upgrade, increasing the size of a space that houses equipment, or costs related to service upgrades can make upgrades prohibitive.

<sup>6</sup> <https://www.energy.ca.gov/about/campaigns/equity-and-diversity/disadvantaged-communities-advisory-group-dcacq>

<sup>7</sup> San Francisco Bay Area Planning and Urban Research Association (“SPUR”) Policy Brief: “Solving the Panel Puzzle,” May 14, 2024, at p. 6. Found here: [https://www.spur.org/publications/policy-brief/2024-05-14/solving-panel-puzzle?utm\\_medium=redirect&utm\\_source=solvingthepanelpuzzle](https://www.spur.org/publications/policy-brief/2024-05-14/solving-panel-puzzle?utm_medium=redirect&utm_source=solvingthepanelpuzzle).

The PARs will result in millions of customers transitioning from natural gas-fired appliances to electric appliances.<sup>8</sup> CPA is aware that this transition sometimes requires infrastructure upgrades or construction work to accommodate electrification before or during installation work. This additional work often results in higher parts and labor costs and protracted construction and installation timelines and is likely to disproportionately impact low-income customers. Additional resources and funding should be made available to assist low- and moderate- income customers make this transition.

Relatively few programs currently provide rebates for installation costs and those that do – such as the Technology and Equipment for Clean Heating Program (“TECH”)<sup>9</sup> and Southern California Edison Company’s (“SCE”) Energy Assistance Savings Program<sup>10</sup> – do not cover all costs and do not always have funding available. The Rebate Program may be able to supplement those incentive gaps and provide stackable rebates to make water heater and furnace upgrades at low-to-no cost for low- income and disadvantaged residents. CPA also suggests SCAQMD consider incorporating into the Rebate Program a requirement to decommission non-compliant equipment at the time of replacement, as a condition to receiving the rebate, to avoid the potential for second markets for or customer retention of non-compliant equipment. Further, the education, engagement, and outreach strategy addressed above would provide SCAQMD staff the opportunity to also identify other programs (including regional programs) that may be stackable with the Rebate Program.

18-4

#### Conclusion

CPA appreciates SCAQMD staff’s hard work on the PARs and looks forward to collaborating with staff throughout the remaining development and potential implementation processes.

If you have any questions, please contact C.C. Song at [csong@cleanpoweralliance.org](mailto:csong@cleanpoweralliance.org) and Clark McIsaac at [cmcisaac@cleanpoweralliance.org](mailto:cmcisaac@cleanpoweralliance.org).

Sincerely,

C.C. Song  
Senior Director of Regulatory Affairs  
Clean Power Alliance of Southern California

<sup>8</sup> Preliminary Draft Staff Report, Table 5-1: PAR 1111 and PAR 1121 Baseline Emissions Estimate, at p. 5-2.

<sup>9</sup> <https://techcleanca.com/>

<sup>10</sup> <https://www.sce.com/residential/assistance/energy-saving-program>

**Response to Comment Letter #18***Response to Comment 18-1:*

Staff understands that outreach and community engagement regarding the rules are important for adoption of the rules and, moreover, emissions reductions. In addition to newsletter and newspaper postings, staff conducted numerous meetings with manufacturers, contractors, environmental groups, building owners, business associations, energy providers, local and state government agencies, consulting firms, etc. Staff also conducted many site visits to installations in various buildings, including single family homes, mobile home parks, low-rise and high-rise apartment buildings, office buildings, and grocery stores. Staff will continue the public outreach after rule adoption. In addition, the Go Zero incentive program has an outreach, education, and application assistance element. Please refer to Response to General Comment 5 for further information regarding outreach.

*Response to Comment 18-2:*

Through the public process, staff has engaged with environmental groups including EJAG, CBOs, and utilities, such as SoCalGas and SCE, for the development of PAR 1111, PAR 1121, and the Go Zero incentive program. In addition, education to disadvantaged communities is a key objective for the Go Zero incentive program that is projected to launch in early 2025. Please refer to Response to General Comment 5 for further information regarding outreach.

*Response to Comment 18-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

By this new rule concept, consumers may opt to gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules. Please see Response to General Comment 7 for discussion on emergency replacements.

*Response to Comment 18-4*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The Go Zero incentive program pilot phase has 75 percent of funds allocated to overburdened communities identified by CalEnviroScreen. To further help ease upfront costs, staff is exploring ways to identify other eligible incentive programs to stack with Go Zero incentives. In addition, a key objective of the Go Zero incentive program is to educate residents and small businesses about incentives and rebates that they can use with the Go Zero incentive program. The Go Zero incentive program will launch as a pilot program with the opportunity to expand and integrate any findings made during the pilot phase in future phases. Staff will consider stakeholder's suggestions for the pilot and future phases of the program.

# COMMENT LETTER #19: PAUL GRANILLO (INLAND EMPIRE ECONOMIC PARTNERSHIP)

**Executive Board**

- Richard Egger, *Chairman*  
*Rest, Best, & Krueger*
- John Chapman, *First Vice-Chair*  
*San Antonio Regional Hospital*
- Baroness Pacific, *Second Vice-Chair*  
*Bank of America*
- Lupe Valdez, *Immediate Past-Chair*  
*Union Pacific Railroad*
- Dan Rendler, *Treasurer*  
*Southern California Gas Co.*
- Ron Voss, *Legal Counsel*  
*Vera & Barbosa Law*
- Fran Izzan, *At-Large Member*  
*Majestic Realty*
- Maggie O'Sullivan, *At-Large Member*  
*J.P. Morgan*
- Patric Villages, *Immediate Past-Chair*  
*Acton, LLC*
- Paul Granillo, *Secretary*  
*Inland Empire Economic Partnership*

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- Dr. Ron Carter  
*Loma Linda Medical Center*
- Ikko Benzevi  
*Highland Fairview*
- Patty Senecal, *WSPA*
- Dr. Ray Wolfe, *SBCTA*
- Derek Armstrong, *County of San Bernardino EDA*
- Dr. Kurt Wilson, *WRCCO*
- Dr. Kim Wilson  
*University of California, Riverside*
- Jerrod McNaughton  
*Inland Empire Health Plan (IEHP)*
- Sandra Culler, *Charter Spectrum*
- Manfred Keil, Ph.D.  
*Chief Economist, IEEP*
- Asif Elkadi, *Ontario Airport Authority*
- Mayer Eranio Ulloa  
*City of Chino*
- Mayer L. Dennis Michael  
*City of Rancho Cucamonga*
- Mayer Deborah Robertson  
*City of Rialto*
- Mayer Acquanetta Wieren  
*City of Fontana*
- Mayer Eddie Tejeda  
*City of Redlands*
- Mayer Ulises Cabrera  
*City of Moreno Valley*
- Dr. Tomas Morales  
*President, California State University, San Bernardino*
- B.J. Patterson  
*Pacific Mountain Logistics*
- Lena Kent, *BNSF Railway*
- Phil Serghini, *Walmart*
- Trini Jimenez, *Watson Land Company*
- Col. Paul Cook (Ret.)  
*Supervisor 1<sup>st</sup> District, County of San Bernardino*
- Hon. Karen Springs  
*Supervisor, 2<sup>nd</sup> District, County of Riverside*
- Suzanne Holland, *County of Riverside EDA*
- Lin Anderson  
*IMA Consulting Group*
- David Ambrose, *Amazon*
- Pat Merin, *California Steel Industries*
- Omar Cobian, *SWRCC*
- Frank Pine, *Southern California News Group*
- Michael Burrows, *San Bernardino Airport*
- Lowell King, *Goodwill Southern California*
- Walter Marquez, *Fairplex*
- Michael Curley, *Southern California Edison*
- Michael D'Elia, *PNC Bank*
- Georgina Garcia, *Kaiser Permanente*



October 16<sup>th</sup>, 2024

The Honorable Vanessa Delgado  
Chair South Coast Air Quality Management District Governing Board  
21865 Copley Dr.  
Diamond Bar, CA 91765

To: The Honorable Vanessa Delgado

From: Inland Empire Economic Partnership

Comment Letter #19

**RE: Proposed Amended Rules (PAR) 1111 & 1121**

Dear South Coast Air Quality Management District Governing Board and the Honorable Vanessa Delgado,

The Inland Empire Economic Partnership (IEEP) is writing to express our opposition to Proposed Amended Rules 1111 and 1121. While we recognize and value the intention of the South Coast Air Quality Management Board (SCAQMD) in reducing NOx emissions to promote clean energy usage and protect the longevity of our changing environmental needs, PAR 1111 and PAR 1121 directly place our Inland Empire communities in a disadvantageous fiscal position that harms the residents and businesses within our region.

**Economic Impact on the Region**

With an average personal annual income nearly doubled below the state average, our concern lies with the anticipated increase in costs for installation, maintenance, and compliance for Inland Empire residents. The disproportionate fiscal impact PAR 1111 and 1121 would have on the region, in an effort to effectively meet zero-emission compliance standards, would further the financial disparity already seen across the Inland Empire, creating a wider divide between economic mobility and a stagnant or decreasing financial standing of Inland Empire residents.

19-1

**Burden on Small Businesses**

PAR 1111 and 1121 act as foundational efforts in the rise of burgeoning costs for small businesses, including, but not limited to, installation fees, certification and labeling fees, and mitigation fees. These additional costs have a realistic potential force to reduce the profitability of local small business, and in some cases, aid in closure of regional businesses altogether.

19-2

3403 Tenth Street, Suite 300  
Riverside, California, 92508  
Phone: (909) 944 – 2201  
www.ieep.com



While we support the goal of adapting our environmental plans for the betterment of our regional and state-wide communities, PAR 1111 and 1121 create unrealistic standards and schedules that place Inland Empire residents and businesses in an immovable and detrimental financial position, with the potential for long-term counterproductive effects.

We urge SCAQMD to continue their efforts in reducing NOx emissions in a feasible manner, with a manageable and flexible schedule that best serves the individuals and businesses that will be directly impacted by their installation.

Thank you for your consideration,



Paul Granillo  
President & CEO  
Inland Empire Economic Partnership

3403 Tenth Street, Suite 300  
Riverside, California, 92508  
Phone: (909) 944 - 2201  
[www.ieep.com](http://www.ieep.com)

**Response To Comment Letter #19***Response to Comment 19-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For consumers electing to install zero-NOx emission units, staff understands that the upfront cost may be higher for some units; however, the socioeconomic analysis for this rule development estimates overall unit lifetime savings as the lower operational costs for zero-emission heat pumps would offset the higher upfront costs. In addition, zero-emission appliances such as heat pumps have significantly lower maintenance costs than those of traditional heating systems, meaning they will require a smaller annual budget for their proper functioning.<sup>(14)</sup> The upfront cost of zero-emission appliances for units subject to PAR 1111 is comparable to the cost of conventional replacements in buildings with preexisting AC. According to the U.S. Census' American Community Survey, almost 96 percent of homes in the Inland Empire region have AC, resulting in very little additional cost for homes in the region. PAR 1111 and PAR 1121 will provide regulatory certainty for the manufacturers to further advance the zero-emission technologies and provide more products to the market. Staff expects unit and installation costs will decrease when the market adoption increases during the future rule implementation. Federal, state, and local incentives, including the South Coast AQMD Go Zero Incentive Program, could offset some upfront costs for zero-emission appliances. Please see Response to General Comment 2 for more information on cost.

*Response to Comment 19-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1111 and PAR 1121 do not have certification or mitigation fee requirements for zero-NOx emission appliances. There are limited labeling requirements for manufacturers, but not for consumers. The socioeconomic analysis for this rule development estimates overall unit lifetime savings for zero-NOx emission units such as heat pumps as the lower operational costs would offset the higher upfront costs. Furthermore, the Go Zero incentive program has allocated funding for small businesses. Finally, staff will conduct a technology check-in(s) to assess the market adoption of zero-emission technologies and re-evaluate the cost and provide updates to the Stationary Source Committee. Please see Response to General Comment 2 for more information on cost.

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<sup>(14)</sup><https://mygreenhome.io/heatpumps/heat-pumps-pros-and-cons#:~:text=Indeed%2C%20the%20cost%20of%20yearly%20maintenance%20of%20a,a%20smaller%20annual%20budget%20for%20their%20proper%20functioning.>

**COMMENT LETTER #20: JEFFREY BALL (ORANGE COUNTY BUSINESS COUNCIL)**



2 Park Plaza, Suite 100, Irvine, CA 92614 | P 949.476.2242 | F 949.476.0443 | www.ocbc.org

October 16, 2024

The Honorable Vanessa Delgado, Chair  
South Coast Air Quality Management District Governing Board  
21865 Copley Drive  
Diamond Bar, CA 91765

Comment Letter #20

**Re: Delayed Action Requested on Proposed Amended Rules 1111 & 1121**

Dear Chair Delgado:

Orange County Business Council (OCBC), the leading voice of business in Orange County, kindly requests that the South Coast Air Quality Management District (SCAQMD) Governing Board postpone any action on Proposed Amended Rules (PAR) 1111 & 1121.

OCBC supports sustainable public and private infrastructure that protects public health, facilitates a well-educated public and workforce, and supports a robust economy – all while providing for reliable natural gas and electric transmission, distribution, and storage systems and supports sufficient “green” and open space infrastructure to promote quality of life. However, OCBC has serious concerns regarding PAR 1111 & 1121 – namely, we simply believe that there has not been enough time to collect a robust set of data and information regarding the overall impact these rules would have on the business communities throughout the district.

20-1

If these PARs are adopted as written, it could have a significantly negative impact on the housing market, which is already a point of contention for Orange County’s resident workforce. Mandating building owners to refurbish their facilities to be in compliance with these regulations, especially when done at scale, will cost owners an excessive amount in costs – which will likely be passed down to renters. This comes at a time in which the cost of living is at an all time high across the region.

20-2

These PARs will also have a significant impact on the hospitality industry – which is one of Orange County’s most vibrant and diverse economic sectors. Many in the hospitality industry are still recovering from losses that were experienced during the state mandated lockdowns during the COVID-19 pandemic. Adding expansive regulatory burdens only a mere few years removed from the pandemic could prove to be detrimental.

20-3

OCBC will continue to support a comprehensive approach, and inclusive dialogue, to addressing the state’s infrastructure needs and will continue to work with government entities, such as SCAQMD, to ensure that the voice of the Orange County business community is engaged when discussing comprehensive infrastructure improvements – such as natural gas infrastructure, among other things.

Orange County Business Council appreciates your consideration of our concerns on this matter.

Sincerely,

Jeffrey Ball  
President/CEO

THE LEADING VOICE OF BUSINESS IN ORANGE COUNTY

**Response to Comment Letter #20***Response to Comment 20-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural "gas-fired units to be sold and installed for use.

Staff has been working with business associations (e.g., Bizfed), businesses, and installers since the prior zero-emission rule development for Proposed Amended Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters and with the development of the 2022 AQMP. The public process for PAR 1111 and PAR 1121 started in October 2023, and staff held eight working group meetings, one public workshop, and one public consultation for stakeholders' engagement. Further, staff conducted many individual meetings and site visits with stakeholders regarding the feasibility of zero-emission standards. Some of the site visits were conducted in Orange County to single family homes, apartment buildings, hotels, and grocery stores. The PAR 1111 and PAR 1121 BARCT assessment includes real world installation data from TECH Clean California, which include costs for both single-family and multifamily installations since 2021. Finally, staff will conduct technology check-in(s) to assess market adoption of zero-emission technologies and re-evaluate the cost and provide updates to the Stationary Source Committee. For further discussion on outreach, please refer to Response to General Comment 5.

*Response to Comment 20-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For consumers electing to install zero-NOx emission units, PAR 1111 and PAR 1121 had future effective compliance dates to allow for the technology and market to evolve as a response to regulatory requirements and for consumers to plan for future installations. Additionally, the Go Zero incentive program is expected to launch in 2025 to encourage retrofitting zero-emission appliances in single-family homes, multifamily homes, and small businesses. Staff presented current legislation regarding tenant protections, rent control, and pass-through costs in Working Group Meeting #5<sup>(15)</sup>. For more information regarding the Go Zero incentive program, please refer to Appendix C Response to Comment 18-4.

*Response to Comment 20-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands the financial impacts the pandemic took on all industries, especially the hospitality industry. The proposed rule requirements will not take effect until future effective dates and only upon natural unit replacement, when existing units fail and must be replaced. The extended compliance schedule is designed to minimize the financial

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<sup>(15)</sup> [http://sfdev.aqmd.gov/home/news-events/calendar\\_v2?month=6&day=20&year=2024](http://sfdev.aqmd.gov/home/news-events/calendar_v2?month=6&day=20&year=2024)

impact. The proposed amended rules are critical to meet National Ambient Air Quality Standards, as healthy ambient air is important to protect public health and can help encourage tourism to the region. The new rule concept further addresses consumer concerns as it will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

## COMMENT LETTER #21: ROSALIE BARCINAS (SOUTHERN CALIFORNIA EDISON)



October 16, 2024

Michael Krause  
 Assistant Deputy Executive Officer  
 South Coast Air Quality Management District  
 21865 Copley Dr.  
 Diamond Bar, CA 91765

Comment Letter #21

**RE: Public Workshop for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause,

Southern California Edison (SCE) appreciates the opportunity to provide the following comments based on the Public Workshop (Workshop) for Proposed Amended Rules on Reduction of NO<sub>x</sub> emissions from Natural-Gas-Fired Furnaces (Rule 1111) and Reduction of NO<sub>x</sub> Emissions from Small Natural-Gas-Fired Water Heaters (Rule 1121), held on October 3, 2024, by the South Coast Air Quality Management District (SCAQMD).

**SCE supports the proposed revisions to SCAQMD Rules 1111 and 1121 as outlined on October 3, 2024.**

Under Rules 1111 and 1121, SCAQMD has introduced zero-emission regulations for new space and water heating equipment. This marks a significant step towards California's goal of achieving carbon neutrality by 2045, a goal that requires coordinated efforts and strategic actions across all sectors. These zero-emission regulations also pave the way for improved air quality, aiming to meet federal air pollution standards by 2037 within the SCAQMD area, while continuously promoting cleaner technologies to safeguard public health and the environment.

At SCE, we commend SCAQMD for its thorough rule update assessments, developed through extensive public engagement, numerous workshops, site visits, and collaboration with various stakeholders, including SCE.

**SCE supports SCAQMD's proposed compliance dates and technology check-in.**

The proposed rule by SCAQMD states that no person shall manufacture, supply, sell, resell, offer for sale, import, or install equipment for use within the SCAQMD, according to the Zero-Emission Limits and Compliance Schedule identified in Tables 1-2 of the Proposed Amended Rules. This provides a clearer path compared to using the manufactured date, as some entities have suggested. This proposed language helps prevent the issue of unsold equipment from outside the SCAQMD area being transferred and installed within the SCAQMD area, potentially delaying the intended air emission reductions by up to two years or more, depending on manufacturers' and distributors' inventory levels. Additionally, the compliance dates for the Bay Area AQMD Rules 9-4 and 9-6, which are equivalent to the SCAQMD Rules 1111 and 1121, are also not based on the manufactured date. Therefore, allowing the addition of the manufactured date could incentivize the transfer of unsold equipment from other areas to SCAQMD. Consequently, SCE supports SCAQMD's proposed compliance dates.

21-1

In addition, SCE supports a future technology check-in to identify updates on market supply of zero-emission technology for all equipment categories, market adoption of new technologies, reevaluation of fuel switching costs, and evaluation of building readiness addressing issues on small spaces, limited power supply, mobile home application, and any equity issues.

**SCE is transforming the grid to enable the transition to a zero-carbon economy while managing the impacts of these rules.**

SCE is proactively transforming the electric grid to accommodate significant advancements in decarbonized generation, the widespread adoption of customer-owned distributed energy resources, and the increasing use of electric vehicles and zero-emission appliances like heat pumps. As outlined in Edison's whitepapers "Countdown to 2045"<sup>1</sup> and, most recently, "Reaching Net Zero,"<sup>2</sup> electrification is the most cost-effective path to decarbonize California's economy and we are proactively working to plan for grid infrastructure needs, the necessary grid planning efforts required. "Countdown to 2045" calls for 100% of retail sales of electricity to be decarbonized, 90% of vehicles to be electrified, and 95% of buildings to be electrified and found that even accounting for grid upgrades required, customers would save about 40% on their energy bills by 2045. As California progresses towards its goal of becoming carbon neutral by 2045, the grid also must evolve to remain safe, reliable, resilient, and affordable. "Reaching Net Zero" expands on this analysis to look at Edison International's specific impacts, examining how "challenge scenarios" can inform potential risks and opportunities, and identifies certain policy solutions (such as proactive grid planning and reducing permitting timelines) to enable a rapid and equitable clean energy transition.

21-2

We are collaborating closely with the California Public Utilities Commission (CPUC), the California Independent System Operator (CAISO), and the California Energy Commission (CEC) to identify and ensure the state's energy needs are captured in the integrated energy policy reports and other planning processes. Through these coordinated efforts, California strives to make the electric grid ready to support the state's clean energy future. With a combination of diffuse adoption of new equipment and sufficient planning horizons, SCE should be able to accommodate these impacts with the traditional load planning processes. Preliminary analysis of adopting heat pumps for space and water heating in residential buildings is not expected to significantly impact the remaining capacity of distribution circuits serving these buildings.

Lastly, technology that allows for demand flexibility will help further reduce the grid impacts of these rules. The CEC has identified the need for 7GW of flexible demand by 2030 and is developing flexible demand appliance standards and partnering with other agencies to help enable the rapid expansion of flexible demand. Locally, SCE is developing innovative incentives and flexible demand programs to promote the market adoption of clean and energy-efficient technologies.

**SCE acknowledges the critical role of workforce education and equity in implementing the proposed Rules 1111 and 1121 and is eager to collaborate with SCAQMD.**

While the current market share of heat pump technologies in the SCAQMD area remains relatively low compared to traditional gas-fired technologies, the market is rapidly transitioning towards cleaner, more efficient solutions. According to ENERGY STAR's 2022 report, heat pump water heaters sales have increased by 26%, while gas-fired water heaters have decreased by 17%.<sup>3</sup> Additionally, the California Energy Commission's (CEC) recently adopted 2025 Building Energy Efficiency Standards are expected to

21-3

<sup>1</sup> Countdown to 2045. Edison International. <https://www.edison.com/clean-energy/countdown-to-2045>

<sup>2</sup> Reaching Net Zero. Edison International. <https://www.edison.com/clean-energy/reaching-net-zero>

<sup>3</sup> Heat Pump Water Heater Sales in 2022 Signal a Decisive Shift in Water Heating Trends. CleanTechnica. <https://cleantechnica.com/2023/10/25/heat-pump-water-heater-sales-in-2022-signal-a-decisive-shift-in-water-heating-trends>

drive 500,000 heat pump installations within the first three years of adoption<sup>4</sup>, significantly accelerating market growth.

As heat pump adoption increases, SCE acknowledges the critical need for contractor education and awareness. SCE's Energy Education Centers offer a variety of heat pump and related courses, which are continually updated based on industry needs and insights. These courses, offered free of charge, cover best installation practices and emphasize the benefits of heat pumps, ensuring contractors, installers, and market actors are equipped to meet customer and regulatory expectations.<sup>5</sup> SCE has also developed a Contractor Demand Building Program that provides a free heat pump water heater for contractors who attend a series of trainings on proper installation techniques for heat pump water heaters.<sup>6</sup>

While drawing lessons learned from CEC's Building Initiative for Low-Emissions Development (BUILD) Program<sup>7</sup> and Technology and Equipment for Clean Heating (TECH) Clean California, SCE also supports statewide initiatives to accelerate the adoption of clean space and water heating technology across California homes to help create an equitable pathway to carbon-free homes by 2045. The TECH Clean California program provides essential support for contractors installing heat pumps, including heat pump water heaters. The program offers technical and sales training from certified instructors and manufacturers, with a focus on installation techniques and incentives designed to ease the transition to heat pump technologies.<sup>8</sup> These programs not only provide financial incentives but also enhance contractor training relevant to SCAQMD's proposed Rules 1111 and 1121. Additionally, SCE's certified, expert-led training classes ensure contractors are equipped to deliver optimal performance and customer satisfaction.<sup>9</sup>

At a statewide level, there is significant momentum behind electrification initiatives. In October 2023, ten major heating and cooling equipment manufacturers joined the CEC in a public commitment to help the state achieve its climate target of installing six million heat pumps in California's buildings by 2030.<sup>10</sup> This collaboration includes workforce development support to ensure that contractors are well-prepared to meet growing demand, including in the Southern California region.

Equity considerations remain at the forefront of SCE's strategy, ensuring that these communities can benefit from heat pump installations. SCE's Energy Savings Assistance (ESA) Program further complements these efforts by providing income-qualified customers with no-cost installations of energy-efficient equipment, including heat pumps and other energy-saving measures. This program helps reduce energy costs while improving comfort in low-income households, making it a key

21-3

<sup>4</sup> Energy Commission Adopts Updated Building Standards Expanding Requirements for Heat Pumps and Electric-Ready Buildings. California Energy Commission. <https://www.energy.ca.gov/news/2024-09/energy-commission-adopts-updated-building-standards-expanding-requirements-heat>

<sup>5</sup> HVAC Heat Pump Systems. Your guide to efficient heating and cooling. Southern California Edison.

[https://www.sce.com/sites/default/files/inline-files/Heat\\_Pump\\_Overview\\_Fact\\_Sheet\\_WCAG.pdf](https://www.sce.com/sites/default/files/inline-files/Heat_Pump_Overview_Fact_Sheet_WCAG.pdf)

<sup>6</sup> HPWH Installation Solutions. Southern California Edison. <https://www.sce.com/business/contractor-demand-building-program>

<sup>7</sup> Building Initiative for Low-Emissions Development Program – BUILD. California Energy Commission.

<https://www.energy.ca.gov/programs-and-topics/programs/building-initiative-low-emissions-development-program-build>

<sup>8</sup> TECH Clean California. <https://www.switchison.org/contractors/tech-clean-california>

<sup>9</sup> HPWH Installation Solutions. Southern California Edison. <https://www.sce.com/business/contractor-demand-building-program>

<sup>10</sup> Top Global Building Appliance Manufacturers and Distributors Commit to Help California Achieve Six Million Heat Pump Goal. California Energy Commission. October 10, 2023. <https://www.energy.ca.gov/news/2023-10/top-global-building-appliance-manufacturers-and-distributors-commit-help>



component of California's equity and energy efficiency goals. Additionally, TECH Clean California allocates 40% of its budget to equity communities, including those within the SCAQMD area. These efforts are crucial to ensuring that disadvantaged and low-income communities benefit from the transition to zero-emission technologies. SCE is committed to collaborating with SCAQMD to expand its efforts in these communities, ensuring an equitable transition to clean energy solutions.

21-3

We look forward to working with SCAQMD to enhance both workforce readiness and equity as part of the broader transition to zero-emission space and water heating technologies.

**Conclusion**

We thank SCAQMD for taking into consideration the above comments on the Public Workshop for Proposed Amended Rule 1111 and 1121 and look forward to working with SCAQMD staff and other stakeholders throughout this process. Please do not hesitate to contact me at (626) 302-9652 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Sincerely,

*/s/ Rosalie Barcinas*

Rosalie Barcinas  
she/her  
Director – Electrification & Customer Services Policy  
Strategy and Regulatory Affairs  
Southern California Edison  
2244 Walnut Grove Ave, Rosemead, CA 91770  
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CC: Peter Campbell  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District

Jen Vinh  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District

**Response to Comment Letter #21***Response to Comment 21-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff appreciates the support on the rule proposal and acknowledges that enforcement of PAR 1111 and PAR 1121 through the supply chain, as opposed to the manufacture date, can remedy the issue of sales and installations of non-compliant units. Staff will conduct a technology check-in(s) to assess the market inventory and adoption of zero-NOx emission technologies and provide updates to the Stationary Source Committee.

*Response to Comment 21-2:*

Staff appreciates SCE transforming the grid, collaborating with other agencies, and developing programs such as flexible demand to enable the transition to zero-emission standards. The impacts of PAR 1111 and PAR 1121 on the electric grid infrastructure area matter of concern with increased adoption of zero-emission technologies. Increased supply and strategic distribution of energy are essential to support increased energy demands. Staff anticipates technologies will emerge as a response to regulations to offer solutions for effective use of energy. Finally, the new rule concept will provide a slower transition to zero-NOx emission and more time for the grid enhancement to meet future demand.

*Response to Comment 21-3:*

Staff agrees that education regarding installation and use of zero-emissions technologies is of utmost importance for the workforce and owners and operators of zero-emission equipment. The Go Zero incentive program will educate both contractors and residents about the logistics of installing and operating zero-emission equipment, in addition to the potential impacts of the proposed amended rules. Moreover, the Go Zero program will allocate 75 percent of its funding to overburdened communities as identified by CalEnviroScreen. Staff will explore opportunities to collaborate with other organizations including SCE for the Go Zero incentive program.

**COMMENT LETTER #22: DAVID L. NEARING****Peter Campbell**

**From:** Dave Nearing <ibdave236@gmail.com>  
**Sent:** Wednesday, October 16, 2024 9:13 PM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Required Heat Pumps

Comment Letter #22

Mr. Hagman I am totally against this effort to make it mandatory to install heat pumps.

I arrived in Crestline in 1957, my family purchased the existing home in 1958, and we have managed to live without heat pumps for many years.

Last year Farmers dropped me, only a few months ago I was finally accepted by Calif. "fair" plan. after some tree cutting and installing new breakers. With the wrap around policy I am now paying \$5484.00 /yr. 2023 I was paying \$1846. Now the "Government" wants to tell me what I need to do to the homestead.

22-1

Please find some workaround to eliminate the proposed requirements further putting the Mountain Community financially behind.

Sincerely  
 David L. Nearing

**Response to Comment Letter #22***Response to Comment 22-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For consumers electing to install zero-NOx emission units, staff understands the higher upfront cost for some cases; however, the socioeconomic analysis estimates overall unit lifetime savings as the lower operational costs would offset the higher upfront costs. There are also federal, state, and local incentives that could offset some upfront costs. South Coast AQMD is expecting to launch the Go Zero incentive program in 2025 and allocate 75 percent of its funding for overburdened communities. In addition, staff has revised the rule proposals for PAR 1111 and PAR 1121 to provide more flexibility. Staff expects the costs of zero-emission appliances will come down over time when there is more market adoption. Please see Response to General Comment 1 for discussion on flexibility, Response to General Comment 2 for discussion on cost, and Response to General Comment 8 for discussion on heat pumps used in cold climates.

**COMMENT LETTER #23: KORY GRIGGS (INDOOR WEATHER INC.)**

**Peter Campbell**

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**From:** kory indoorweatherhvac.com <kory@indoorweatherhvac.com>  
**Sent:** Thursday, October 17, 2024 7:21 AM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Rule 1111 and 1121 Comment Letter #23

Public comments on Rules 1111 and 1121 proposed amendments.  
Submitted by Kory Griggs

These amendments need to be delayed further to allow more time for the many reasons listed below

Both 1111 and 1121- It's obvious that the stakeholders do not have a grasp on the costs associated with this proposal that they will be required to shoulder, and therefore have not had enough time to make public comments.

Both 1111 and 1121 - The ongoing need to "shore up" the workings of the proposal. Issues range from inaccurate cost analysis, lack of studies in all climate zones in SoCal (particularly zone 16's more extreme cases of operating cost, installation cost and infrastructure upgrade costs), lack of available funding on socioeconomic need basis and funding directed at infrastructure upgrades.

Both 1111 and 1121- A proper study and cost analysis needs to be done using actual data (not internet searches for the "average" cost of XYZ).  
 Staff at a minimum need to have the data from the manufacturers on the products available - heat pump HVAC systems both standard and low ambient \*standard scroll or reciprocating, inverted, ducted, ductless, unitary, and proper knowledge of needs or lack thereof of backup heat requirements. AND heat pump tanked water heaters both 120 volt and 240 volt- and have a better working knowledge of the installation requirements of these products (which include permitting requirements involving both health a safety). Get real world estimates from actual HVAC contractors, electricians and plumbers for the installation and infrastructure upgrade requirements on the various building types and ages in the district to install these products. As in all state and government work there should be at least three different estimates for the cost of installation. Once staff has this data a real-world cost analysis can be made.

23-1

Both 1111 and 1121- The various building types should not be averaged together to provide a cost analysis. The operating cost, and installation requirement vary greatly from building type to building type, with data that is not averaged out across all types a better cost analysis can be made.

1111 - In the comparison of Gas furnace operating cost vs new heat pump technology cost, the data points are off.  
Both the gas furnace and heat pump equipment that are being compared are unspecified. Based

on the numbers used we can only assume the following.

A. The furnace is of average size 60-80k 3 ton, is of average efficiency 80% AFUE is a 40 NOx unit, and uses a PSC blower motor.

B. The heat pump is an inverted type, is of the highest SEER and of a smaller tonnage (3 tons or less).

In this comparison multiple assumptions are made.

1. That if the furnace were to be replaced it would be replaced with the same type using the same amount of energy BUT no furnace produced today by law is allowed to use PSC motor technology, therefore the wattage data of this data point is off. All furnace replacements in the district must be 14 NOx or less. The option for greater than 80% AFUE also exists, as well as multiple stage, modulating and variable speeds.

2. Unlike the gas furnace assumption, the data point for the heat pump assumes the highest SEER 2 rating (I'm guessing 18 SEER 2 or greater based on assumed size of 3 tons and wattage figures provided) when calculating wattage. This causes the wattage data to be skewed lower. The minimum efficiency and average efficiency installed is 14 SEER 2.

THESE ASSUMPTIONS AND THE EQUIPMENT COMPARISONS LEAD TO FALSE DATA POINTS.

These data points need to be straight across, equipment size and efficiency types to be able to properly assess cost thresholds.

1111- all heat pump refrigerants will be changing next year. Currently we in the industry have little to no data on cost of new equipment and are just now receiving training on installation requirements. Leaving a proper cost analysis further skewed due to unknown costs of equipment and unknown cost of new installation requirements. Currently we are hearing that equipment will be as much as 20% more, and new installation requirements look like they may add 2-4 additional hours of work, which will add as much as a 20% increase in labor costs.

23-2

Both 1111 and 1121- At a minimum, a media campaign or public outreach program needs to be funded in advance of the passage of these amendments. The cost that will be incurred directly by the stakeholders are so great in many instances that the lack of effort to inform the public is unjust.

23-3

1121- Having a technology check-up in 2027 after the amendments have already taken effect in new construction and once the amendments take affect for "replacement" tanked water heaters is unworkable. Plumbers have nearly zero working knowledge and very little exposure to this new technology.

Unlike HVAC heat pump technology that has been in use and is well known by those that install, maintain, and repair the equipment, for years and years, plumbers have little to no working knowledge of the technology and equipment they will be required to install in all applications in just slightly more than two years from now. A major effort needs to be put forth to get the plumbing industry involved prior to the adoption of amendment 1121 to avoid the foreseeable technological and installation pitfalls after the passage of this amendment.

23-4

Both 1111 and 1121- Having a known need prior to the passage of the amendments for more financial assistance to bring cost thresholds in alignment and then propose after passage a

"follow-up" is not a workable solution. Not only does the AQMD not have a proper grasp of cost adoption, but they are going to rely on a hopeful future analysis in 2027 far too deep into the dates of effect of the amendments to allow for proper analysis of the cost thresholds used to justify the passage in the first place.

23-4

Both 1111 and 1121 - temporary or rental "emergency" replacement issues. As of now the proposal as written is completely unworkable. The cost to the stakeholders that will need access to this "emergency" temporary or rental is outsized. As an HVAC contractor I can tell you there is no such thing as a "temporarily" installed furnace or water heater, both are permanently installed items in a home's infrastructure, they require permits and inspection. Typically, a manufacturer requires knowledge of the location and installation date to provide a full factory warranty. Once this "temporary" furnace or water heater is installed it will then be required to be removed in as little as 6 months (not sure if we have a right to gain access to a private property and forcibly remove this product.. TBD (?). Therefore, the cost to temporarily install and "rent" a furnace is greater than just a regular install. Additional labor will be required to remove the equipment. Additional cost will be incurred in tracking and reporting needed to the AQMD.

23-5

1121 - Health department codes for the recovery time and temp of hot water in all public food establishments, hospitals etc. etc. The data I'm seeing with heat pump tanked water heaters does not appear to support the requirements, this needs to be accounted for due to public health and safety requirements.

23-6

Kory Griggs  
Indoor Weather Inc  
9092896201 ext 4  
indoorweatherhvac.com

### *Response to Comment Letter #23*

#### *Response to Comment 23-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff started to solicit technology and cost information from manufacturers in the 2023 manufacturer survey during the process of the Rule 1146.2 amendment. The survey questions included appliances for residential and commercial buildings. At the first working group meeting for PAR 1111 and PAR 1121, staff discussed the survey outcome and continued to urge stakeholders to share the cost information or offer feedback on the information staff collected.

The PAR 1111 and PAR 1121 BARCT assessment used real world installation data from TECH Clean California installations, which include upfront costs for both single-family and multifamily installations since 2021 and included cold climate applications. Please see Chapter 2 and Response to General Comment 6 for more discussion about the analysis and Response to General Comment 8 for more discussion on cold climate heat pumps.

Through previous rulemaking, staff gathered a list of installers for mountain communities. Those installers have been notified of all public meetings and documents released for this

rulemaking. Further, staff reached out to certain individual high-altitude installers to ensure participation.

Manufacturers have expressed that the regulatory certainty that comes with zero-NOx emission standards would have enhanced future product development. As BAAD adopted zero-emission standards for space and water heaters in residential and commercial buildings in March 2023 and CARB is also in rule development for similar requirements, the previous rule concept prior to the current rule concept for PARs 1111 and 1121 aligned with other agencies and with their policy direction. A group of manufacturers and agencies joined the California Heat Pump Partnership (CAHPP) and committed to advancing the state toward Governor Newsom's goal to install 6 million heat pumps by 2030.<sup>(16)</sup> Chapter 2 has detailed discussion on various types of heat pumps technologies and staff analysis has considered different building types and ages. Please refer to Response to General Comment 4 for more discussion on technology readiness and Response to General Comment 6 for more discussion on analysis.

Staff evaluated the high-altitude applications and understood that in cold climates and mountain communities, cooling by AC systems is less common. Cold climate heat pumps can pull heat from the air even at sub-zero temperatures and are utilized in colder climates in the U.S. and abroad. Recent technology development has also resulted in various zero-emission options that minimize building or electrical upgrades during installation and thus reduce the cost. Please see Response to General Comment 4 for more information. The new rule concept for PARs 1111 and 1121 further addresses the concern. Staff expects the technologies will further advance, market adoption will increase with clear policy direction, and costs of zero-NOx emission units will come down over time.

Staff analysis on the fuel switch/operational cost is based on the 2019 RASS released by the CEC. The RASS includes information on the energy use of both electrical and natural gas appliances in Californian homes. Heat pump energy efficiency rate was not utilized in the calculation; however, staff has included discussion of the technologies and their efficiencies with references of information sources in Chapter 2. Please refer to Response to General Comment 6 for more information.

*Response to Comment 23-2:*

Staff understands that effective in 2025 (or 2028 for window units), refrigerants with a global warming potential of over 750 will no longer be able to be used in new equipment. It is expected that most contractors' day-do-day work will not change and it will be "business as usual".<sup>(17)</sup> Manufacturers have chosen future compliant refrigerants (e.g., R-32 and R-454B) for zero-emission appliances and those refrigerants are designed to be more efficient. In addition, in the previous rule concept prior to the new rule concept, PAR 1111 and PAR 1121 zero-emission effective dates were one to five years after the effective dates of refrigerant transition and the installations are based on appliance natural turnover.

*Response to Comment 23-3:*

Staff understands that outreach and community engagement regarding the zero-emission rules are important. In addition to newsletter and newspaper postings, staff conducted

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<sup>(16)</sup> <https://heatpumppartnership.org/>

<sup>(17)</sup> <https://www.rheem.com/air-conditioning/articles/what-to-know-about-the-2025-hvac-refrigerant-change/>

numerous meetings with manufacturers, contractors, environmental groups, building owners, business associations, energy providers, local and state government agencies, consulting firms, etc. Staff also conducted many site visits to installations in various buildings, including single family homes, mobile home parks, low-rise and high-rise apartment buildings, office buildings, and grocery stores. Staff will continue the public outreach after rule adoption. In addition, the Go Zero incentive program has an outreach, education, and application assistance element. Please refer to Response to General Comment 5 for additional information regarding outreach.

*Response to Comment 23-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff will provide updates/technology check-in(s) on the rule implementation to the Stationary Source Committee prior to major rule milestones. The effective date for zero-emission appliances installed in new building aligns with building code; therefore, installers will have to install the zero-emission technology in new buildings with or without PAR 1111 and PAR 1121.

There are many training opportunities offered to contractors through manufacturers, various incentive programs (e.g., TECH), utility companies, and local agencies. They could include in-person and virtual trainings. The Go Zero incentive program has also allocated funds for installer training. The training sessions will present contractors with the intricacies of installations and also provide training on permit processes and improve their ability to secure permits to complete electrical and mechanical connections. The anticipated launch of the Go Zero incentive program is 2025. For financial assistance, please see Response to General Comment 2 for more information.

*Response to Comment 23-5:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please see Response to General Comment 2 regarding the cost concern and Response to General Comment 7 regarding emergency replacements.

*Response to Comment 23-6:*

Staff understands the difference of recovery time between heat pumps and conventional gas units and included that in the analysis and working group meeting discussion. Water heaters used in restaurants and hospitals and the health code were discussed during the rulemaking for Rule 1146.2. Please check the Rule 1146.2 Public Hearing documents including staff report and socioeconomic impact assessment for analysis related to costs.

(18)

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(18) <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf?sfvrsn=6>



**COMMENT LETTER #24: JEANINE JUST**

**Peter Campbell**

**From:** jeanine.jeaninejust.com <jeanine@jeaninejust.com>  
**Sent:** Thursday, October 17, 2024 7:58 AM  
**To:** Peter Campbell  
**Cc:** jeanine.jeaninejust.com  
**Subject:** [EXTERNAL] MOUNTAIN RESIDENT JEANINE JUST ....Commenting on the AQMD Rule 1111 and 1121

TO: Peter Campbell,

Comment Letter #24

**I want to comment about the proposal the AQMD is working on to amend rule 1111 and 1121.**

- My name is Jeanine Just. I lived in Laguna Beach for over 20 years, before making Crestline my home for the past 15 years. Unlike Laguna Beach, it's common for electricity to frequently go out and sometimes for days. I'm a single woman in my 70s, and I'm happy to report that I have safely survived lots of tough mountain weather conditions. Why? Because I used my commonsense and selected from several options—gas, electric, fireplaces, candles and backup food supplies. I know for certain that electricity requirements in the mountains—are very different than in the Southern CA basin. I feel it's very important for AQMD to do a study specific on the mountains, to determine the detrimental effects of this proposal—and to consider making exceptions to the proposed rules that would apply to 4000 feet and above. California's power grid is already strained. The mountain needs a solution that would work for both the environment and the economy—not a one-size-fits all solution.

- Just as air quality is important to AQMD .... air quality is very important to mountain residents. In fact, many mountain residents moved here to get away from the poor air quality in the S. CA basin. We don't appreciate it when the wind blows the smog up to our mountains and creates unhealthy air quality. 24-1

- I'm also concerned about the proposal for "all electric mountain homes." Yesterday, the electric company sent a text that says, "Alert: High winds and fire conditions are forecast for Friday morning through Saturday afternoon. We may have to shut off your power to decrease risk during this time. Power restoration typically takes 8 hours and will start after the wind subsides. Delays may occur if daylight is required for safe inspections." My question is ... how will mountain residents stay alive during cold winter weather—when their only option is electricity? 24-2

- I've been a business consultant and entrepreneurs' advocate for over 40 years. I know for certain that small businesses in America, and especially in the mountains, are struggling to stay in business. There are lots of reasons, but California small business laws over the past 10 years, have reduced small businesses profitability. On top of that the Covid business closures forced lots of business to close their doors. IF ... mountain business property owners or business renters have to pay all the fees and money required to upgrade their utilities to all electric (and then pay extra electric bills) —it will be the "straw that breaks the camels back" for lots of our mountain businesses. Lots of buildings are older and would require huge amounts of money to bring them up to AQMD standards. We need our small businesses!!! 24-3

- Our mountain has some upper socio-economic residents—but lots of residents are mid to lower socio-economic status, who moved here because the cost of living was affordable. We also have lots of retirees and seniors that are on fixed incomes. Many people are suffering from the home/property damage caused by Snowmageddon in 2023—and struggling financially because they had to take out SBA loans to rebuild their damaged property. Now insurance cancellation and/or huge increases in 24-4

home insurance costs have many people living in fear of losing their homes or are losing their homes. The AQMD proposal would further devastate the mountain economy and the lives of many mountain residents. 24-4

I am asking AQMD to seriously reconsider the unique mountain challenges and our unique weather environment. I believe the AQMD proposal would have major unintended negative consequences. Thanks for your consideration,

Sincerely,  
Jeanine Just

23581 Lake Drive, Crestline, Ca  
909-338-1313

## Response to Comment Letter #24

### *Response to Comment 24-1:*

Staff appreciates the comments on PAR 1111 and PAR 1121 and the understanding of importance of air quality to the mountain communities.

### *Response to Comment 24-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff recognizes there are buildings in the mountain communities that are already all-electric, and that there is concern about grid reliability during extreme weather conditions. As electricity is required to operate not only zero-emission appliances but also many NOx-emitting natural gas units (e.g., gas furnaces), it is essential to ensure electric grid reliability. Please see Response to General Comment 3 on electric grid reliability. As zero-emission technologies advance, some new technologies will enter the market that require minimal electrical upgrade and construction, for example, currently available 120V heat pump water heaters and portable heat pumps for HVAC. Please see Response to General Comment 4 for more discussion on technology readiness.

### *Response to Comment 24-3:*

State and local incentives could offset some upfront costs for small businesses, including the ongoing state-wide TECH Clean California rebates; local or utility programs for commercial applications such as the SCE program implemented by Willdan Energy Solutions; and the upcoming South Coast AQMD pilot incentive program, Go Zero, which will have \$5 million allocated for small businesses to transition natural gas units to heat pumps. Go Zero will allocate 75 percent of funding for overburdened communities, and there is potential for a fivefold funding increase for future phases of the program. The new rule concept also includes mitigation fees for NOx-emitting units sold which will create a revenue stream for future Go Zero rebate funding. Staff anticipates that Go Zero rebates

for small businesses may be layered with other applicable rebates and tax credits, as well as local incentives, and the application assistance funding will allow for further guidance to program applicants on the incentive stacking process.

Heat pumps can be over 300 percent more efficient than conventional natural gas or electric resistance units, leading to operational cost savings over the lifetime of the unit. For more information on cost, please see Response to General Comment 2.

Regarding the rule applicability, installations in small businesses may subject to Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters which was adopted in June 2024 and includes future effective zero-emission standards. Please check the Rule 1146.2 Public Hearing documents including staff report and socioeconomic impact assessment for analysis related to costs.<sup>(19)</sup>

*Response to Comment 24-4:*

For consumers choosing to install zero-NOx emission units, despite capital cost funding opportunities and operational cost savings mentioned in above Response to Appendix C Comment 24-3, staff understands there may still be cost concerns. A status update/technology check-In will re-evaluate the market for zero-emission technology and the associated costs. As manufacturers provide the market with more heat pump models, costs may decrease overtime. PAR 1111 and PAR 1121 are applicable to new installations at end of unit life, or at natural turnover, meaning that existing units can continue to operate until they naturally break down, resulting in long implementation timelines. In addition, staff has proposed a new rule concept which addresses the concern. Please see Response to General Comment 1.

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<sup>(19)</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf?sfvrsn=6>

**COMMENT LETTER #25: BIZFED**

Comment Letter #25

October 17, 2024

Hon. Vanessa Delgado, Chair  
South Coast Air Quality Management District Governing Board  
21865 Copley Dr.  
Diamond Bar, CA 91765

Dear Chair Delgado and Governing Board members –

We are reaching out on behalf of BizFed, the Los Angeles County Business Federation, an alliance of more than 200 business organizations representing more than 400,000 employers in Los Angeles County, including large and small businesses in a wide range of industries throughout the South Coast Air Basin (SCAB).

We are writing specifically regarding Proposed Amended Rule (PAR) 1111 and PAR 1121; many of the businesses we represent have or will be writing their own individual comment letters that specifically address the impacts to their industries. Our comments address the impacts on the business community as a whole and include overarching concerns of our diverse membership.

Recently BizFed has hosted SCAQMD staff and Governing Board members to demonstrate the impact of the proposed rulemaking on multifamily residential properties. These proposed rules, with their expedited implementation timelines, will be the highest cost for the lowest amount of NOx reduction in the agency's history. We are extremely concerned about the impact on the southern California economy and on an already overburdened and constrained housing market.

25-1

We have attached the presentation that was shared with SCAQMD staff and Governing Board members that illustrates the real-world costs of these proposed rules on multifamily residential properties. In each case a licensed professional HVAC/mechanical engineer was retained to develop a scope of work to implement the proposed rules for water and space heating at two separate residential properties. The scope was then provided to a licensed general contractor to obtain quotes to complete the work.

As you will see from the attached, the costs are astronomical. In the first case, the buildings will need to be retrofitted to eliminate the existing hydronic space heating system, which is common for larger multifamily buildings built since the late 1980's. In that case, the total retrofit cost exceeds \$37,000 per unit.

25-2

In the case of the older property which will require much more extensive site and electrical system updates to accommodate Proposed Amended Rules 1111 and 1121, the cost exceeds \$72,000 per unit. Properties similar to this exist throughout the South Coast Air

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Basin and this example is reflective of the tremendous cost and detrimental impact these proposed rules will have if adopted as written.

It is our desire that these real- world costs and impacts be included in the record of this rulemaking should the Governing Board decide to move forward. However, we strongly recommend that the Governing Board conduct further due-diligence to better understand these significant costs and impacts to housing in southern California before moving forward. At the minimum, we recommend that the Board modify both PAR 1111 and 1121 to align implementation with the district’s own Air Quality Management Plan which identifies 2029 as the implementation date for each proposed rulemaking.

25-2

Further, we appreciate that staff has somewhat recognized the significant challenge that implementing these rules will be for single family and multifamily owners by allowing for an extension of time for projects that will require construction and/or utility upgrades. We believe this a good first step but that the rule needs to go farther to address what could be devastating cost impacts to homeowners and renters. Specifically, there should be a further extension of time for implementation in buildings where the existing hydronic heating systems will need to be replaced. Additionally, homeowners facing costs of \$20,000 or more should be given additional time to secure financing and/or let the market mature to see implementation costs come down with new technologies.

25-3

Thank you for your attention to these critical issues. We look forward to continuing to collaborate with you to make these proposed rules less onerous and impactful to homeowners and renters in the South Coast Air Basin.

Thank you for your thoughtful consideration.

Sincerely,



Fran Inman  
BizFed 2024 Chair  
Majestic Realty



David Fleming  
BizFed Founding Chair



Tracy Hernandez  
BizFed Founding CEO  
IMPOWER, Inc.



David Englin  
BizFed President

### BizFed Association Members

Action Apartment Association  
Advanced Medical Technology Association  
Alhambra Chamber  
American Beverage Association  
Antelope Valley Chamber formerly Lancaster Chamber of Commerce  
Apartment Association of Greater Los Angeles  
Apartment Association of Orange County  
Apartment Association, CA Southern Cities, Inc.  
Apartment Association of California  
Arcadia Association of Realtors  
AREAA North Los Angeles SFV SCV  
Armenian American Business Association  
Armenian Trade & Labor Association

Arts District Los Angeles  
ASCM Inland Empire Chapter  
Associated Builders & Contractors SoCal (ABC SoCal)  
Associated General Contractors  
Association of Independent Commercial Producers  
AV Edge California  
Azusa Chamber  
Bell Chamber  
Beverly Hills Chamber  
BioCom  
Black Business Association  
Black Professional Network

Boyle Heights Chamber of Commerce  
Bridge Compton Org  
Building Industry Association - LA/Ventura Counties  
Building Industry Association of Southern California  
Building Industry Association- Baldyview  
Building Owners & Managers Association of Greater Los Angeles  
Burbank Association of Realtors  
Burbank Chamber of Commerce  
Business and Industry Council for Emergency Planning and Preparedness  
Business Resource Group  
CalAsian Chamber

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CalChamber	LA Fashion District BID	Unmanned Autonomous Vehicle Systems Association
California African American Chamber of Commerce	LA South Chamber of Commerce	Urban Business Council
California Apartment Association- Los Angeles	Larchmont Boulevard Association	US Green Building Council
California Asphalt Pavement Association	Latin Business Association	US Resiliency Council
California Bankers Association	Latino Food Industry Association	Valley Economic Alliance, The
California Black Chamber of Commerce	Latino Golfers Association	Valley Industry & Commerce Association
California Business Properties	Latino Restaurant Association	Venice Chamber of Commerce
California Business Roundtable	LAX Coastal Area Chamber	Vermont Slauson Economic Development Corporation
California Cleaners Association	Licensed Adult Residential Care Association-LARCA	Veterans in Business
California Contract Cities Association	Long Beach Area Chamber	Vietnamese American Chamber
California Council for Environmental & Economic Balance (CCEEB)	Long Beach Economic Partnership	Village of Sherman Oaks BID
California Fuels & Convenience Alliance- Formerly California Independent Oil Marketers Association (CIOMA)	Long Beach Major Arts Consortium	Warner Center Association
California Gaming Association	Los Angeles Area Chamber	West Covina Chamber
California Grocers Association	Los Angeles Economic Development Center	West Hollywood Chamber
California Hispanic Chamber	Los Angeles Gateway Chamber of Commerce	West Hollywood Design District
California Hotel & Lodging Association	Los Angeles Latino Chamber	West Los Angeles Chamber
California Independent Petroleum Association	Los Angeles LGBTQ Chamber of Commerce	West San Gabriel Valley Association of Realtors
California Infrastructure Delivery Coalition	Los Angeles Parking Association	West Valley/Warner Center Chamber
California Life Sciences Association	Los Angeles Regional Food Bank	Westchester BID
California Manufacturers & Technology Association	MADIA Tech Launch	Western Electrical Contractors Association
California Metals Coalition	Malibu Chamber of Commerce	Western Manufactured Housing Association
California Natural Gas Producers Association	Manhattan Beach Chamber of Commerce	Western Propane Gas Association
California Restaurant Association	Manhattan Beach Downtown Business & Professional Association	Western States Petroleum Association
California Retailers Association	Marina Del Rey Lessees Association	Westside Council of Chambers
California Self Storage Association	Marketplace Industry Association	Westwood Community Council
California Small Business Alliance	Monrovia Chamber	Whittier Chamber of Commerce
California Travel Association (CalTravel)	Motion Picture Association of America, Inc.	Wilmington Chamber
California Trucking Association	MoveLA	World Trade Center
Californians For Smarter Sustainability	MultiCultural Business Alliance	Yes in My Backyard
Carson Chamber of Commerce	NAIPO Southern California Chapter	7-Eleven Franchise Owners Association of Southern California
Carson Dominguez Employers Alliance	NAREIT	
Central City Association	National Association of Minority Contractors	
Century City Chamber of Commerce	National Association of Theatre Owners CA/Nevada	
Chatsworth Porter Ranch Chamber of Commerce	National Association of Women Business Owners	
Citrus Valley Association of Realtors	National Association of Women Business Owners - LA	
Civil Justice Association of California CJAC	National Association of Women Business Owners-California	
Claremont Chamber of Commerce	National Federation of Independent Business Owners California	
Commerce Business Council formerly Commercial Industrial Council/Chamber of Commerce	National Hookah	
Compton Chamber of Commerce	National Latina Business Women's Association	
Compton Community Development Corporation	Norwegian American Chamber of Commerce	
Compton Entertainment Chamber of Commerce	Ofiso Community Foundation	
Construction Industry Air Quality Coalition	Orange County Business Council	
Construction Industry Coalition on Water Quality	Orange County Hispanic Chamber of Commerce	
Council of Infill Builders	Pacific Merchant Shipping Association	
Crenshaw Chamber of Commerce	Panorama City Chamber of Commerce	
Culver City Chamber of Commerce	Paramount Chamber of Commerce	
Downey Chamber of Commerce	Pasadena Chamber	
Downtown Alliance	Pasadena Foothills Association of Realtors	
Downtown Long Beach Alliance	PGA	
DTLA Chamber of Commerce	Pharmaceutical Care Management Association	
El Monte/South El Monte Chamber	PhRMA	
El Salvador Corridor Association	Pico Rivera Chamber of Commerce	
El Segundo Chamber of Commerce	Pomona Chamber	
Employers Group	Rancho Southeast REALTORS	
Energy Independence Now EIN	ReadyNation California	
Engineering Contractor's Association	Recording Industry Association of America	
EXP The Opportunity Engine	Regional CAL Black Chamber, SVF	
FastLink DTLA	Regional Hispanic Chambers	
Filipino American Chamber of Commerce	San Gabriel Valley Economic Partnership	
Friends of Hollywood Central Park	San Pedro Peninsula Chamber of Commerce	
FuturePorts	Santa Clarita Valley Chamber	
Gardena Valley Chamber	Santa Clarita Valley Economic Development Corp.	
Gateway to LA	Santa Monica Chamber of Commerce	
Glendale Association of Realtors	Secure Water Alliance	
Glendale Chamber	Sherman Oaks Chamber	
Glendora Chamber	Signal Hill Chamber	
Greater Antelope Valley AOR	South Bay Association of Chambers	
Greater Bakersfield Chamber of Commerce	South Bay Association of Realtors	
Greater Coachella Valley Chamber of Commerce	South Gate Chamber of Commerce	
Greater Downey Association of REALTORS	Southern California Contractors Association	
Greater Lakewood Chamber of Commerce	Southern California Golf Association	
Greater Leimert Park Crenshaw Corridor BID	Southern California Grantmakers	
Greater Los Angeles African American Chamber	Southern California KFC Franchise	
Greater Los Angeles Association of Realtors	Southern California Leadership Council	
Greater Los Angeles New Car Dealers Association	Southern California Minority Suppliers Development Council Inc.	
Greater San Fernando Valley Chamber	Southern California Water Coalition	
Harbor Association of Industry and Commerce	Southland Regional Association of Realtors	
Harbor Trucking Association	Specialty Equipment Market Association	
Historic Core BID of Downtown Los Angeles	Structural Engineers Association of Southern California	
Hollywood Chamber	Sunland/Tujunga Chamber	
Hospital Association of Southern California	Sunset Strip Business Improvement District	
Hotel Association of Los Angeles	Swiss American Chamber of Commerce	
ICBWA- International Cannabis Women Business Association	Thai American Chamber of Commerce	
Independent Cities Association	The Bridge Network	
Independent Hospitality Coalition	The LA Coalition for the Economy & Jobs	
Industrial Environmental Association	The Los Angeles Taxpayers Association	
Industry Business Council	The Two Hundred for Homeownership	
Inglewood Board of Realtors	Torrance Area Chamber	
Inland Empire Economic Partnership	Tri-Counties Association of Realtors	
Irwindale Chamber of Commerce	United Chambers - San Fernando Valley & Region	
Kombucha Brewers International	United Contractors	
La Cañada Flintridge Chamber	United States-Mexico Chamber	
LA County Medical Association		

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**Response to Comment Letter #25***Response to Comment 25-1:*

Staff appreciates BizFed's work with staff during the rulemaking and for providing comments.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

South Coast Air AQMD has been classified as in "extreme" nonattainment for the 2015 8-hour ozone standard with the worst air quality in the nation. Therefore, there is a need to identify and propose cost-effective control/compliance options, while striving to achieve the emission reductions necessary for regional air quality attainment, especially given the magnitude of the emission reductions required to meet the ozone standards. Implementation of PAR 1111 and PAR 1121 will result in a NOx emissions reduction of 6 tons per day, which means 10 percent of 2018 NOx emissions from all stationary and area sources in the region.

The proposed rules are based on the BARCT assessment as discussed in Chapter 2 of this report. The cost-effective analysis of the BARCT assessment utilizes real world installation data from TECH Clean California, which includes costs for both single-family and multifamily installations since 2021. The new manufacturer alternative compliance option addresses the concern for cases that may not be cost effective by installing zero-NOx emission units, when consumers may choose to install natural gas-fired units.

*Response to Comment 25-2:*

PAR 1111 and PAR 1121 apply at the unit natural turnover when a replacement unit must be installed, often at unit breakdown. The rules evaluate the incremental cost of installing a zero-emission appliance versus a conventional gas unit. Retrofitting work such as eliminating the existing system would not be considered in the incremental cost, as the existing unit would have to be removed even to install like-for-like units. Furthermore, as zero-emission technologies advance, technologies may emerge that can serve as drop-in replacements for existing systems, saving considerable costs, such as heat pump hydronic heating systems<sup>(20)</sup>.

Staff analysis has considered the required electrical upgrades in the costs to retrofit a zero-emission appliance. Further, Chapter 2 provides discussion on new and emerging technologies that are less likely to require a panel upgrade. Please see Response to General Comment 4 for more information.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

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<sup>(20)</sup> <https://www.harvest-thermal.com/product#air-handler>

*Response to Comment 25-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff will continue to work with stakeholders after the rule adoption for the implementation. Staff is also committed to the technology check-in to reassess the technologies and cost.

Incentive programs such as South Coast AQMD's Go Zero and the state's TECH Clean California, will help alleviate the financial burden of installing zero-emission appliances.

Hydronic heating systems are most likely subject to Rule 1146.2 which was amended in June 2024 for zero-emission standards with later compliance dates for installations in existing buildings. Please check the Rule 1146.2 Public Hearing documents for the staff analysis.<sup>(21)</sup>

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<sup>(21)</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf?sfvrsn=6>



**COMMENT LETTER #26: KEN BELDING**

Comment Letter #26

**Jennifer Vinh**

**From:** Ken Belding <kbelding@empirecomfort.com>  
**Sent:** Thursday, October 17, 2024 11:49 AM  
**To:** Jennifer Vinh  
**Cc:** Peter Campbell  
**Subject:** [EXTERNAL] ARLO: RE: Proposed Amended Rule 1111Control of Nitrogen Oxides from Residential-Type, Natural Gas-Fired Space Heating Equipment

Dear Ms. Vinh,

On behalf of Empire Comfort Systems, we appreciate the opportunity to provide comments on SCAQMD Rule 1111. As a leading manufacturer of gas space heating appliances, we have a long-standing commitment to reducing emissions and improving energy efficiency. While this may seem like ancient history our company worked with The Gas Research Institute (GRI) in the 1990's reducing NOx on our Gravity Wall Furnaces. After many months of trying to establish a test method that would work consistently and accurately we then turned to reducing the NOx generated from the units. Again, after many months we were able to accomplish this feat. Again, we spent many months and more dollars developing tooling to create the parts to build and sell this product only to be told that it wasn't necessary. This new initiative by the SCAQMD is something unanticipated and of course has potential dangerous consequences.

This rule essentially eliminates all gas-fired appliances needlessly and recklessly. This rule is throwing the baby out with the bathwater. Our products generally and for the most part require no electricity to operate except what is supplied from the thermocouple on the unit. Those people who live in areas of the SCAQMD that require at least some heat in the winter to stay alive should have the ability to install one of our space heating appliances as back-up when the power goes out. They are as efficient as can be made and still run off of no externally supplied electricity. The DOE recognized this about 10 years ago when it gave space heaters ( Direct Heating Equipment) in a Federal Register Listing the ability to not have to try and increase their efficiency. It was recognized that they were important appliances and also losing sales rapidly except in those areas where backup heat was necessary due to the adverse effect of cold weather combined with power outages. A good example of this was the power outages experienced in Texas a few years ago when people died due to hypothermia in the very widespread power outage due to an ice storm. Jf course mountainous regions such as those in the SCAQMD have the same potential on a yearly basis. These heaters are supplemental and in general do not replace a central heat pump system but give the homeowner confidence that when the power goes out, they will be protected. This is hoping your friends and or relatives won't suffer this same fate as the Texans did and certainly in many other areas around the country.

26-1

Speaking of EPCA, the proposed limitations under Rule 1111 raise the issue of federal preemption under the Clean Air Act (CAA) and Energy Policy and Conservation Act. EPCA denies states the ability to enact their own regulations related to the energy use of covered products, including Direct Heating Equipment, which in fact they have had to protect in the past. NOx limits create a regulation that directly goes against federal standards. The requirements will disrupt markets not only in the SCAQMD but across the country because of different models being needed if in fact one can be made to emit zero NOx. This of course will violate the Dormant Commerce Clause.

26-2

Make no mistake about it, Empire Comfort Systems and our industry certainly support efforts to reduce emissions. As reported before, we were an industry leader on this issue 30 years ago. We are now involved with the Hydrogen infused gas and the advanced low NOx combustion systems that are still being researched and developed.

The consumer burden from this rule is obvious. Low-income folks and even those who aren't will suffer greatly and needlessly in order to switch from low NOx appliances to a zero NOx system. The estimates to do what is suggested by the creation of PAR 1111 is in the low thousands of dollars to a minimum of 20,000 dollars to upgrade a gas home to all electric heating. It will at a minimum put lives in danger to the point where there will be hypothermia victims in the SCAQMD. This will come with the already overburdened and very fragile California electrical grid system. The NOx produced by the site of creating the electric for this region will be off the charts again needlessly if a more even-keel approach is taken to what is a perceived issue. 26-3

An approach that uses a combined and long-term low NOx strategy versus one that will be a massive burden on a large percentage of your population. Not only in the higher elevations but in the low-income housing in the more populated areas that are using Gravity Wall furnaces as a sole source of heat and could certainly not afford a new heat pump system. 26-4

Please consider a slower phase in of low NOx versus this quick 12 month impossible turn-around schedule.

I hope you consider my topics carefully and for the good of the citizens of the SCAQMD please consider a more blended approach.  
Thank you for your time and consideration.

**Ken Belding** | Director Government Affairs  
**Empire Comfort Systems, Inc.**  
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## Response to Comment Letter #26

### *Response to Comment 26-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff recognizes the importance of electric grid reliability not only for zero-emission technologies, but also NOx-emitting natural gas technology, which often requires electricity to operate. Please see Response to General Comment 3 for discussion on grid reliability.

### *Response to Comment 26-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1111 and PAR 1121 do not ban natural gas or otherwise regulate the amount of natural gas used by the equipment subject to PAR 1111 and PAR 1121. This rulemaking was not

any different from previous rulemakings lowering NOx emission limits of various equipment. PAR 1111 and PAR 1121 are technology and fuel-neutral and are focused on achieving the maximum NOx emission reductions possible. Equipment that meets the NOx emission limits, regardless of the energy source, is not prohibited by PAR 1111 and PAR 1121.

With the new rule concept, consumers will be able to choose either zero-emission appliance options or NOx emitting appliance options in the market. Please see Response to General Comment 1.

*Response to Comment 26-3:*

Staff acknowledge the higher upfront cost in many zero-emission installations; however, lower annual operational costs are anticipated. State, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help alleviate the financial burden. Finally, staff will re-evaluate operational cost based on the updated projection on the utility rates at the technology check-in. Please see Response to General Comment 2 for more information on cost.

*Response to Comment 26-4:*

Staff understands that the mountain communities have a colder climate and heating in wintertime is essential. Please see Response to General Comment 8 for discussion about cold climate regions.

**COMMENT LETTER #27: AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE**

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Phone 703 524 8800 | Fax 703 562 1942  
www.ahrinet.org

**Comment Letter #27**

October 17, 2024

Mr. Peter Campbell  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Ms. Jen Vinh  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

(Submitted electronically via [pcampbell@aqmd.gov](mailto:pcampbell@aqmd.gov) and [jvinh@aqmd.gov](mailto:jvinh@aqmd.gov))

**RE: AHRI Comments in Response – South Coast Air Quality Management District (SCAQMD) Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121)**

Dear Mr. Campbell and Ms. Vinh:

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) respectfully submits this letter in response to the Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121) from South Coast Air Quality Management District (SCAQMD or District).

AHRI represents more than 330 manufacturers of air conditioning, heating, water heating, and refrigeration equipment. It is an internationally recognized advocate for the HVACR industry and certifies the performance of many of the products manufactured by its members. In North America, the annual economic activity resulting from the HVACR industry is more than \$211 billion. In the United States alone, AHRI member companies, along with distributors, contractors, and technicians employ more than 704,000 people.

AHRI and its members are committed to, and support, greenhouse gas (GHG) emission reductions, while promoting sustainable, safe, reliable, and affordable access to the essential air and water heating and cooling provided by the products they manufacture.

AHRI Comments – SCAQMD PAR 1111 and PAR 1121  
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**I. General Comments for PAR 1111 and PAR 1121**

**A. AHRI Member Products Provide Critical Services to California**

Space and water heater products<sup>1</sup> include a wide range of manufactured goods, which provide comfort and ensure public health and safety. These space and water heater products serve and support nearly every major sector in California, providing life critical products and services for medical facilities and hospitals; government agencies; the U.S. military; law enforcement, first responders, and public safety; energy; public works and infrastructure support services; critical manufacturing; defense industrial base; and conservation. Often, the health, safety, and the functioning of society depend on these products. Overly burdensome regulations could impair the HVACR and water heating sector's ability to meet these critical needs.

27-1

**B. AHRI Members Have Greatly Reduced Emissions**

AHRI and its members are committed to the overall health of the environment and have a long history of developing products to meet ever-more-challenging aspirational carbon neutrality and emission-reduction goals. Over the past 20 years, the industry has made significant investments toward reducing its emissions and its carbon footprint by creating cleaner technologies and products.

However, on the path to carbon reductions, there are many significant challenges and technological constraints to what can be achieved.

**C. Emergency Replacements**

In most cases, space and water heating equipment is replaced upon failure of the appliance. If this occurs and the house needs a panel upgrade or other alterations to accommodate a zero-NOx solution, that house could go without space- or water heating for several days, if not weeks, while the retrofits occur. If such an event were to happen during a cold snap, there could be significant concern for the health and safety of the occupant(s). AHRI recommends for the District to continue to consider solutions to the emergency replacement issue, including proactive replacement programs, such that the impact of proposed PAR 1111 and PAR 1121 does not compromise safe and reliable access to services.

27-2

The California Statewide Codes and Standards Reach Codes Team (Statewide Reach Code Team) performed a cost effectiveness study for upgrading existing buildings in 2019.<sup>2</sup> In its report, the team recognized the challenges associated with emergency replacements of space

<sup>1</sup> Space heating products include space heaters, room heaters, ventless room heaters, infra-red heaters, heat pumps, furnaces, boilers, heating elements, burners, boiler equipment and associated parts and accessories, anti-scaling agents, filters, venting, and their associated spare parts, and similar products. These examples are meant to be representative, not exhaustive, of heating products. Water heating products include products which heat water for potable uses; water heating equipment that utilizes gas, oil, or electric (via electric resistance heating elements or a heat pump); storage water heaters; tankless water heaters; and others. Water heater products utilize oil, gas, or electricity to heat potable water for use outside the heater upon demand, and similar products. These examples are meant to be representative, not exhaustive, of water heater products.

<sup>2</sup> California Statewide Codes and Standards Reach Codes, "2019 Cost-Effectiveness Study: Existing Single Family Residential Building Upgrades" Prepared by: Frontier Energy, Inc. and Misti Bruceri & Associates, LLC. (2019), [https://localenergycodes.com/download/826/file\\_path/fieldList/2019%20Res%20Cost-Eff%20Report-Glendale-2021-03-10.pdf](https://localenergycodes.com/download/826/file_path/fieldList/2019%20Res%20Cost-Eff%20Report-Glendale-2021-03-10.pdf)

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and water heating when moving from gas to electric, and outlined specific exceptions for these issues:

- Exception 1: Non-ducted space conditioning systems and systems without central air conditioning.
- Exception 2: Ducted space conditioning systems where only the gas furnace is replaced.
- Exception 3: The main service panel does not have the capacity or space to accommodate an additional 240V, 30 A circuit, and the cost to upgrade the main service panel and run required electrical service to the heat pump air handler is prohibitive as determined by the jurisdiction.

For heat pump water heaters, the Statewide Reach Code Team identified the need for the following exceptions:

- Exception 1: The proposed location of the new water heater is located within conditioned space.
- Exception 2: The proposed location of the replacement water heater is not large enough to accommodate a heat pump water heater (HPWH) equivalent in size and one-hour capacity rating to the existing water heater or the next nominal size available.
- Exception 3: The main service panel does not have the capacity or space to accommodate an additional 240 V, 30 A circuit, or the cost to upgrade the main service panel and run required electrical service to the water heater is prohibitive as determined by the jurisdiction.
- Exception 4: A solar water heating system is installed meeting the installation criteria specified in Reference Residential Appendix RA4.20 and with a minimum solar savings fraction of 60 percent.

27-2

AHRI recommends for the District to consider and address these exceptions in the continued development of PAR 1111 and PAR 1121.

## II. Comments specific to Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural-Gas-Fired Furnaces (PAR 1111):

### A. Dual-Fuel Systems

AHRI requests that the District reconsider its exclusion of dual-fuel systems as a compliance pathway for the ultra-low NO<sub>x</sub> requirements in PAR 1111. Dual-fuel systems provide an ideal pathway to lower NO<sub>x</sub> emissions and reach the average NO<sub>x</sub> emissions of less than 14ng/j required in the section. Not only would a dual-fuel pathway limit NO<sub>x</sub> emissions but it also would help homeowners move to heat pumps sooner, at a reasonable cost, and provide increased resiliency to the grid by reducing winter peak loads.

27-3

**SCAQMD should include a definition of dual-fuel systems in the proposed rule with control requirements to ensure the weighted average NO<sub>x</sub> emissions are below the requirements. Dual-fuel systems also should be considered as an option in the environmental analysis, especially given the impact to low- and medium-income consumers.**

### B. Product Labeling

AHRI members do not support the requirement for a label on furnaces to enforce PAR 1111.

27-4

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Manufacturers do not have a way to know where the equipment will ultimately be installed, as our members work through distributors and wholesalers, labeling specific to a state air district is impractical and overly burdensome. SCAQMD maintains a database<sup>3</sup> of equipment with NOx levels and an inspection agency therefore could look up equipment compliance.

27-4

#### C. Alternate Compliance – Rental Furnaces

AHRI members are concerned with the suggested alternate compliance options related to rental furnaces. The emergency replacement exemption for furnaces involves the temporary installation of ultra-low NOx furnaces for a very short period of time until electrical upgrades can be completed. This amounts to an unreasonable amount of labor and upgrade charges to the consumer.

27-5

AHRI believes a short-term rental furnace option will be costly for homeowners and contractors: requiring that almost twice the work be completed for one furnace replacement. If the District believes rental equipment will enable this option for alternate compliance, then AHRI recommends the District develop, administer and fund a program, as opposed to relying on the market to create such an offering.

### III. Comments specific to Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121):

#### A. Residential Applications

As referenced in the Preliminary Staff Report<sup>4</sup>, the New Buildings Institute (NBI) worked closely with 120V HPWH manufacturers and utilities in California on a statewide 120-volt HPWH field validation program from 2021 to 2023<sup>5</sup>. AHRI reminds the District that notwithstanding 120V HPWHs ability to be “plugged in” to a standard 120V outlet, many utility closets, basements, and garages do not currently have a 120V outlet located by the water heater. This means that even when these products are readily available, an electrician would be required to install a dedicated outlet for the water heater. Further HPWHs require condensate removal. If a drain does not exist near the water heater, a plumber would be required to install one. These are just a few of the technical barriers and costs that need to be considered for the wide-scale adoption of these products, which are not accounted for in the Preliminary Staff Report’s analysis.

27-6

A rushed technology transition may lead to unintended consequences with respect to installation and performance of the products, which would only serve to damage public perception and slow the adoption in other jurisdictions. Given the status of this market, the 2027 transition date for existing construction is unreasonable. A reasonable timeframe must be established for these products to be developed and matured, such that the supply chain can handle this regulation and contractors and technicians have time to be trained in proper installation and maintenance.

<sup>3</sup> <http://www.aqmd.gov/home/programs/business/business-detail?title=certified-equipment>

<sup>4</sup> <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf>

<sup>5</sup> [https://newbuildings.org/wp-content/uploads/2023/07/PlugInHeatPumpWaterHeaterFieldStudyFindingsAndMarketCommercializationRecommendations\\_NBI202308.pdf](https://newbuildings.org/wp-content/uploads/2023/07/PlugInHeatPumpWaterHeaterFieldStudyFindingsAndMarketCommercializationRecommendations_NBI202308.pdf)

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#### B. Product Labeling

AHRI members do not support the requirement for a label on water heaters to enforce PAR 1121. SCAQMD maintains a database<sup>5</sup> of equipment with NOx levels and an inspection agency therefore could look up equipment compliance.

If the District continues to use labels as an enforcement mechanism, AHRI suggests the label language in PAR 1121 be consistent with the language adopted in Rule 1146.2, "For use in existing buildings only."

The label wording in PAR 1121 (g)(1) – *Labeling Water Heaters for Installation and Use in Existing Buildings* implies that any water heater is suitable for use in mobile homes:

"If Installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings; 2) After January 1, 2027, only for installation in mobile homes; and 3) After January 1, 2030, not compliant for use and installation in South Coast AQMD."

However, because of specific space constraints and plumbing requirements, not all water heaters are suitable for use in mobile homes. This wording could be misinterpreted by stakeholders that any water heater with this label is suitable for use in a mobile home setting.

27-7

#### C. Alternate Compliance – Rental Water Heaters

AHRI members are concerned with the suggested alternate compliance options related to rental water heaters. Generally, warranties apply to water heaters installed in a specific dwelling and it is transferable between owners, but not between locations. Any contractor intending to use a water heater as a short-term rental for different locations could void the warranty.

AHRI believes a short-term rental water heater option will be costly for homeowners and contractors: requiring that almost twice the work be completed for one water heater replacement. If the District believes rental equipment will enable this option, then AHRI recommends for the District to develop, administer and fund a program, as opposed to relying on the market to create such an offering.

AHRI questions how a rental water heater option would permit contractors who rent water heaters to purchase equipment for rental purposes from manufacturers, when manufacturers are making every effort not to ship non-compliant product into the district.

27-8

#### D. Annual Reporting Requirements

AHRI members emphasize that the data that District staff is requiring to be provided under paragraph (g)(4)(E) is proprietary information of product manufacturers. It is unclear as to why the District believes this information is necessary to fulfill its enforcement obligations related to this rule. AHRI strongly urges District staff to add language to paragraph (g)(4)(E) of PAR 1121 clarifying that the District will treat such data as Confidential Business Information and will not be shared by the District with third parties. Such language would also provide assurances to manufacturers that they are not being compelled to directly or indirectly disclose confidential

27-9

<sup>5</sup> <http://www.aqmd.gov/home/programs/business/business-detail?title=certified-equipment>



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information, specific to their organization, to which other parties would not otherwise have access.

#### IV. Conclusion

Two fundamental pillars of industry are certainty and consistency. The proposals in these comments address certainty for industry. Consistency can only be achieved by local air quality management districts working to align on NOx requirements so that there is one clear, consistent path forward for manufacturers in California. Incentives should be provided for early adoption, and programs should be put in place to help low-income households afford this transition. This approach will aid in an equitable transition and remove the main hurdle for emergency replacements, which is cost. This approach will also allow for optimal environmental benefits.

AHRI appreciates the opportunity to submit these comments and welcomes the opportunity for further discussion. If you have any questions regarding this submission, please do not hesitate to contact me.

Sincerely,



Nicole Colantonio  
Director, Regulatory Affairs  
Direct: (703) 600-0332  
Email: [ncolantonio@ahrinet.org](mailto:ncolantonio@ahrinet.org)

### Response to Comment Letter #27

#### *Response to Comment 27-1:*

Staff appreciates AHRI's comment on PAR 1111 and PAR 1121. Staff recognizes the importance of the public process to receive input and feedback from stakeholders in various industries and appreciates AHRI's participation in this process. The public process included a series of working group meetings and numerous individual meetings with stakeholders who may be impacted by this rulemaking. Staff conducted multiple site visits to various stakeholders and continues to be open to stakeholder feedback and input during the rulemaking process. Please see Response to General Comment 5 for more information on outreach.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

#### *Response to Comment 27-2:*

The commenter mentioned the 2019 study was based on 240V heat pumps. Since then, installers have gained more experience from greater heat pump adoption and more new technologies have been developed to address various installation challenges. Chapter 2

provides discussion on new and emerging technologies that are less likely to require a panel upgrade and construction. Some examples are 120V plug-in heat pump water heaters, portable heat pumps for space heating/cooling, and multi-function heat pumps for water heating and space heating/cooling. Split systems for both HVAC and water heating have been developed to address space constraints. Moreover, the utility companies are launching a meter collar technology that provides a connection path between the utility meter and the existing panel<sup>(22)</sup>. The meter collar can be used for connecting photovoltaic systems, electric vehicles, and other distributed energy resources such as home batteries. Additionally, it can be utilized to create a circuit for heat pumps used in water heating and space heating applications. Both SCE and PG&E are evaluating this meter collar under various programs, including pilot programs. As such, this meter collar presents a viable solution to the market barrier posed by panel upgrades. For further discussion on technology readiness, please refer to Response to General Comment 4.

Staff acknowledges the higher incremental costs when replacing only a furnace without simultaneous replacement of a cooling system and that cooling systems are less common in high-altitude regions. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

*Response to Comment 27-3:*

Dual fuel systems were discussed in previous rulemakings for Rule 1111 but did not gain support from some manufacturers. Space heating/cooling dual fuel system is composed of an electric heat pump that provides heating and cooling paired with a gas furnace that provides heat below a certain external temperature threshold. While some manufacturers supported the dual fuel system, some other manufacturers opposed it as this allowance would undercut the development and commercialization of lower emission technologies which were zero-emission technologies.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use, which also includes dual fuel units.

Staff understands it is essential for electrical generation and local grid infrastructure to meet demand. Please see Response to General Comment 3 for further discussion on the electric grid.

Due to the South Coast AQMD being in extreme nonattainment for various federal ozone standards, aggressive control measures targeting NOx emission reductions are the priority. PAR 1111 and PAR 1121 are technology and fuel neutral and are focused on achieving the maximum NOx emission reductions possible. Should zero-NOx natural gas technologies

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<sup>(22)</sup> <https://connectder.com/>

be made available in the South Coast AQMD, such as natural gas fuel cell water heaters, consumers would have the opportunity to choose between zero-NOx emitting natural gas and other zero-emission appliances. With the current rule proposal and based on space and water heating appliances currently available in the South Coast AQMD, customers will have the choice to purchase NOx emitting natural gas units or other zero-NOx emission appliances.

*Response to Comment 27-4:*

With the new rule concept, the revised PAR 1111 and PAR 1121 have removed previously proposed alternative compliance options and the associated annual report requirement. Staff recognizes the need for a compliance tool to differentiate the units allowed to be installed in new and existing buildings. Labeling requirements are common for area source rules and are important tools for enforcement, especially when some units distributed to the market can only be installed under certain conditions. Manufacturers may elect to send a sticker or label to distributors to be applied upon unit installation.

Manufacturers that elect to comply by the new ZEM alternative compliance option will not be subject to labeling requirement for selling NOx-emitting natural gas-fired units.

*Response to Comment 27-5:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please refer to Response to General Comment 7 for discussion on emergency replacements.

*Response to Comment 27-6:*

Minimal or no electrical work is required for installing 120V plug-in heat pump water heaters. They are available in dedicated and shared circuit models and they require a 120V/15A outlet, which is the most common outlet in all homes, including older homes. It is also common for homes to have 120V/15A outlets next to the water heater or in the area with appliances. Chapter 2 provides more discussion on 120V heat pump water heaters which are commercially available in big box shops such as Home Depot and Lowes. <sup>(23),(24)</sup> Manufacturers are also developing 120V split system heat pump water heaters to further alleviate the concern on electrical outlets and space constraints.

Condensate removal is required for high efficiency units, including high efficiency gas units. For example, all condensing (high efficiency) furnaces need condensate removal lines. Manufacturers expressed to staff that CEC requirements are driving the adoption of high-efficiency furnaces.

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<sup>(23)</sup> <https://www.homedepot.com/b/Plumbing-Water-Heaters-Tank-Water-Heaters-Heat-Pump-Water-Heaters/N-5yc1vZckra>

<sup>(24)</sup> <https://www.lowes.com/pl/water-heaters/hybrid-heat-pump-technology/120-volt/4294859099-4294400540-4294639144?msocid=06cbfa22943064fb081eeea095de6582>

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff will continue to work with stakeholders after the rule adoption on implementation and market transformation to zero-emission appliances. Staff is also committed to conducting technology check-in(s) to reassess the technologies and cost.

*Response to Comment 27-7:*

Regarding the label wording that commenter mentioned), staff has made revisions to address the concern.

In addition, by the new rule concept, manufacturers that elect to comply by the new manufacturer alternative compliance option will not be subject to labeling requirement for selling NOx-emitting natural gas-fired units.

*Response to Comment 27-8*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For more information regarding emergency replacements, please refer to Response to General Comment 7.

*Response to Comment 27-9:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The revised PAR 1111 and PAR 1121 no longer include the report requirement mentioned in the comment. By the new rule concept manufacturers electing to comply by the new manufacturer alternative compliance option will report the sales of NOx-emitting natural gas units and Zero-NOx emission units after each compliance year to demonstrate the compliance target.

## COMMENT LETTER #28: SAN GABRIEL VALLEY ECONOMIC PARTNERSHIP (SGVEP)

Comment Letter #28



October 17, 2024

Hon. Vanessa Delgado, Chair  
 South Coast Air Quality Management District Governing Board  
 21865 Copley Dr.  
 Diamond Bar, CA 91765

RE: PROPOSED AMENDED RULE 1111 & 1121

Dear Chair Delgado and Governing Board members,

On behalf of the San Gabriel Valley Economic Partnership (Partnership), I write to respectfully urge for more caution and ask for you as a board to defer consideration of Proposed Amended Rules 1111 and 1121 to allow South Coast Air Quality Management District (SCAQMD or District) Governing Board members and staff to receive additional information, data, input and dialogue from the numerous stakeholders potentially impacted by this proposed rule.

The Partnership is a regional non-profit organization committed to advancing the economic vitality of the San Gabriel Valley, representing small businesses, large industrial corporations, healthcare organizations, colleges and universities, local governments, non-profit organizations, and all other regional stakeholders. The Partnership supports efforts and policies that aim to provide clean air and water to our communities. We have significant concerns, however, regarding the scale of the mechanical, electrical, plumbing and other requirements necessary to comply with retrofits of existing commercial and multifamily residential properties, as well as the accuracy of the District's estimates of the utility costs associated with upgraded service, and the dramatic cost implications to hundreds of thousands of families who rent their homes.

**Examine the cost impacts to homes and businesses that would require electrical upgrades.** For many homes, installing an electric water heater would necessitate an upgrade to the electrical panel. Electric water heaters typically require more power, often running on a 240-volt circuit, which many older homes are not equipped to handle. Upgrading an electrical panel can cost anywhere from \$1,000 to \$3,000 or more, depending on the complexity of the work and the region. This is a substantial, unexpected expense for homeowners, particularly in low- to middle-income households, who may already be struggling with rising energy costs. We urge the District to examine the cost implications to homes requiring various levels of upgrades.

28-1

**Consult with Investor and Municipal Electric Utilities to ensure their systems can handle the increased load.** Electric water heaters would add considerable load to the already stressed electrical grid. During periods of peak demand, especially in colder months or during heatwaves, utilities often struggle to meet energy needs. Adding millions of electric water heaters to the grid could exacerbate this problem. To accommodate the surge in demand from millions of homes switching to electric water heaters, significant upgrades to the electrical grid would be required. These upgrades—such as increasing the capacity of transmission lines, substations, and local distribution systems—come at a huge financial cost, which would likely be passed down to consumers in the form of higher utility bills. We urge the District to work with electric utilities to understand the impacts such a policy could have from an implementation perspective but also to a cost one.

28-2

**Provide offramps in cases of high cost or delays in installation.** If a policy mandating electric water heaters is implemented, it is crucial to include offramps that allow for exceptions in cases where electric water heaters are either cost-prohibitive or installation cannot be done in a timely manner for consumers.

- *Cost prohibitive:* As mentioned earlier, for many homes installing an electric water heater requires significant electrical upgrades. These upgrades can cost thousands of dollars—far more than the cost of a new water heater itself. For homeowners facing these substantial costs, it would be unreasonable to require the installation of an electric water heater. Allowing them to opt for a gas water heater instead would provide a practical, cost-effective alternative. Without such an offramp, these homeowners could face severe financial strain or be forced to delay replacing an essential household appliance, which could affect their quality of life.
- *Delay in Installation:* Another practical concern is unreasonable delays in installing an electrical water heater due to extended installation time, especially if it involves complex electrical upgrades. Some of the required upgrades may not be in the control of the customer and rely upon upgrades to their local electrical system. Homes in underserved areas might face even longer wait times due to a shortage of qualified electricians or contractors. In these situations, homeowners should not be forced to wait weeks or months without hot water simply because an electric heater installation is delayed. Providing an offramp for the use of gas water heaters in cases where installation timelines are extended ensures that customers can maintain a functional home without unnecessary inconvenience.

28-3

The Partnership appreciates the time, work, and dedication the SCAQMD Governing Board and staff have put into ensuring that our region's air quality is clean and safe. In this instance, it is important that we respectfully urge the SCAQMD Governing Board to delay consideration/adoption of PAR 1111/1121 to allow District staff to continue to work with owners of a variety of commercial and incorporate the information gleaned from these visits and other sources in order to prepare a proposed rule and socioeconomic impact study that incorporates all available information. Thank you.



Luis Portillo  
President & CEO

**Response to Comment Letter #28***Response to Comment 28-1:*

Staff appreciates the comment on PAR 1111 and PAR 1121.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Please refer to Response to General Comment 2 for further discussion on cost.

*Response to Comment 28-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1111 and PAR 1121 are technology and fuel neutral but have identified all-electric heat pumps as the promising technology in the current market as discussed in Chapter 2. Conventional electric resistance water heaters can achieve zero-emission but are not preferred considering the low efficiency and higher power demand. Modern heat pumps can reach 300 to 400 percent efficiency or even higher which mitigates some challenges for grid reliability.

The topic of grid infrastructure was brought up during the public process, and staff has been in contact with utilities and other state organizations on grid reliability topics. Staff is continuing to be in communication with investor-owned utilities, municipal utilities, and community choice aggregators. Through conversations with utilities, staff found there are existing efforts on the utility and state level to address future electricity demand and reliability, and some of these points are described in Chapter 2 of this staff report. For more information, please refer to Response to General Comment 3 on grid reliability.

*Response to Comment 28-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff analysis has considered the required electrical upgrades in the costs. Incentive programs like South Coast AQMD's Go Zero and the state's TECH Clean California, will help lower the upfront cost of zero-emission appliances.

Further, Chapter 2 provides discussion on new and emerging technologies that are less likely to require a panel upgrade. Some examples are 120V plug-in heat pump water heaters, portable heat pumps for space heating/cooling, and multi-function heat pumps for water heating and space heating/cooling.

Please see Response to General Comment 2 for further discussion on cost, Response to General Comment 4 for further discussion on technology readiness, and Response to General Comment 7 for further discussion on emergency replacements.



**COMMENT LETTER #29: CARRIER****Comment Letter #29**

**Jason Thomas**  
Director Regulatory Affairs  
HVAC North America  
jason.m.thomas@carrier.com

October 17, 2024

Mr. Peter Campbell  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Submission via email: pcampbell@aqmd.gov

**RE: Carrier Comments on Preliminary Draft PAR 1111**

Dear Mr. Campbell,

Carrier is a global leader in intelligent climate and energy solutions. With more than a century of expertise, we drive innovation while pursuing our customers first and helping protect our planet. Our range of products include residential and commercial heating, ventilation, and air conditioning (HVAC) products, transport refrigeration products, chillers, and HVAC building services.

In the proposed rule, (d)(2) states *"On and after the applicable Table 2 compliance date, no person shall manufacture, supply, sell, resell, offer for sale, import, or Install, any Furnace for use in the South Coast AQMD, that exceed the Table 2 NOx emission limits. The applicable Table 2 compliance dates for New Building types shall be determined based on the construction or alteration completion date."* If our understanding is correct, new buildings that are started in 2025 but completed in 2026 would require zero NOx equipment. The timeline of equipment specification, purchase, manufacturing, installation, and building completion creates significant compliance challenges. Builders, equipment manufacturers, distributors, and contractors may be unable to change course in a short timeline, which will lead to significant delays in building projects. Additionally, restricting installation for existing buildings in January 1, 2028 will likely create issues in the market as well. Manufacturers, distributors, and contractors have uncertainty when predicting demand. This will inherently lead to misalignment in supply and demand. Carrier requests South Coast Air Quality Management District to allow the sale of product built prior to the compliance date to be sold and installed for both new and existing buildings.

29-1

30 S. Meridian Street, Suite 500, Indianapolis, Indiana 46204

Thank you for consideration of these suggestions. If you have questions or would like to have a deeper conversation on HVAC supply chain dynamics, please email to coordinate time for discussion.

Sincerely,



Jason Thomas  
Director, Regulatory Affairs  
Carrier

## **Response to Comment Letter #29**

### *Response to Comment 29-1:*

Staff appreciates the comment on PAR 1111. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

Staff recommends maintaining the zero-emission requirement upon installation in new buildings but is proposing to exempt furnaces from meeting the zero-emission limit if the unit is installed into a new building with a building permit approved for the building construction by the appropriate enforcement agency prior to the date of rule adoption.

A compliance schedule based on installation date aligns with previous amendments to Rules 1111 and Rule 1121, as well as the current version of Rule 1146.2. Future effective dates will provide time for the supply chain to have adequate compliant inventories by the effective dates and to address any stranded asset concerns.

**COMMENT LETTER #30: ALISE DAVIS**

Comment Letter #30

**Peter Campbell**

**From:** Alise Davis <alh.davis99@gmail.com>  
**Sent:** Thursday, October 17, 2024 1:22 PM  
**To:** Curt Hagman (GBM); supervisor.rowe@bos.sbcounty.gov; Peter Campbell  
**Subject:** [EXTERNAL] SCAQMD proposed changeover to electric appliances

October 17, 2024

Dear Supervisor Curt Hagman, Supervisor Dawn Rowe, and Mr Peter Campbell,

I have been a resident of the Lake Arrowhead area since 1978. I am a retired teacher from The Rim of the World School District and I am on a fixed income.

I am one of Southern California's mountain residents severely affected by the South Coast Air Quality Management's planned change mandating electric heat and water heating appliances. In our area, electrical shut downs often occur. If I don't have a gas water heater, **I could freeze to death in winter as some people have during harsh isolating storms.**

30-1

It is not right that an unelected group that does not understand our needs and does not represent the mountain residents should arbitrarily impose unrealistic, exorbitantly priced changes to the homes we have worked so hard to purchase and keep.

**I am very concerned about the SCAQMD's proposed plans, and I beg you to understand how devastating and life-threatening they will be for me and other retired residents of the California mountains.**

Sincerely,

Alise L.H. Davis

**Response to Comment Letter #30***Response to Comment 30-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands that the mountain communities are located in a colder climate and that heating in wintertime is essential. Please see Response to General Comment 8 for further discussion about zero-emission technologies adopted in cold climate regions.

Staff appreciates the comment on the proposed amended rules and recognizes the importance of electric grid reliability for electric units, but also for NOx-emitting natural gas units, which often require electricity to operate. The CEC, CPUC, and CARB are working to coordinate across efforts, identify issues not covered by ongoing efforts, and assess needed actions to better align the energy system with the state's climate targets.

Please see Response to General Comment 3 for further discussion on electric grid reliability.

Staff recognizes the need to monitor the cost and market for zero-emission technologies and will conduct a status update/technology check-in and report back to the Stationary Source Committee.

COMMENT LETTER #31: CYPRESS LAND COMPANY

Comment Letter #31



Mr. Peter Campbell
Planning, Rule Development, and Implementation
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765
Email: pcampbell@aqmd.gov

Re: Comments on PAR 1111 and PAR 1121

Dear Mr. Campbell:

Cypress Land Company appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company owns and manages 37 industrial buildings throughout Southern California. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not take into account issues facing commercial and industrial real estate property owners and our tenants. For example, replacing a natural gas HVAC system or water heater with an electric unit at one of our properties would add significant costs to run power infrastructure to the equipment. This would be a burden on us as a landlord and on our tenants.

31-1

We would respectfully request that the District revise PAR 1111 and PAR 1121 to provide commercial and industrial property owners with greater flexibility and time to deal with already existing leases set to renew by the end of 2026 or until such time that our local utility provider informs us that they can accommodate any new electrical hook-up which would be required due to the installation of a new system in order to avoid any additional delays for occupancy of our properties.

31-2

Thank you for taking into consideration our concerns. Please contact Mathew Doss, Chief Operations Officer at Cypress Land Company, with any questions.

Sincerely,
[Handwritten signature: Mathew Doss]

Mathew Doss
Chief Operations Officer
Cypress Land Company
310.208.8077 x 114
Mathew@cypressland.com

10940 Wilshire Blvd., Suite 1900 • Los Angeles, California 90024 • (310) 208-8077 • FAX (310) 208-8127

**Response to Comment Letter #31***Response to Comment 31-1:*

Staff appreciates the comment on PAR 1111 and PAR 1121. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept also revised the proposed applicability and will not expand to larger size spacing heating units typically used at commercial facilities. The revised PAR 1111 and PAR 1121 are applicable to residential-sized units, minimizing any potential impact to commercial properties.

Please see Response to General Comment 2 for further discussion on cost.

*Response to Comment 31-2:*

Staff appreciates your comment. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

## COMMENT LETTER #32: NAIOP SoCAL



## Comment Letter #32

October 17, 2024

Mr. Peter Campbell  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: pcampbell@aqmd.gov

**Re: Comments on PAR 1111 and PAR 1121**

Dear Mr. Campbell,

NAIOP SoCal appreciates the opportunity to provide comments on Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121).

With nearly 1,300 Members, NAIOP SoCal is the leading nonprofit organization for commercial property owners, developers, owners, investors, brokers, general contractors, architects, engineers and finance professionals in the industrial, office, retail, and mixed-use multifamily real estate sectors across the counties of Los Angeles and Orange.

Our Members are committed to reducing their carbon footprint while meeting the needs of our tenants. Installation of solar energy panels, energy efficient lighting controls, outdoor water conservation devices and other energy-reducing measures can be found throughout the region on commercial and industrial buildings. And, due to updates to California's building codes, commercial and industrial properties are much more energy efficient than similar properties built several decades ago.

32-1 NAIOP SoCal is concerned that the proposed rules do not consider issues facing commercial and industrial real estate property owners and our tenants. The fact that commercial property owners are not considered an affected industry by the District staff highlights this concern. The Preliminary Draft Staff Report for PAR 1111 and PAR 1121 states that the proposed regulations would affect “manufacturers, distributors, retailers, resellers, and installers” of natural gas-fired furnaces and water heaters. We believe that commercial and industrial property owners and their tenants should also be considered an affected industry since they will eventually shoulder the costs of complying with the regulations.

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Jose Cornejo, Senior Director of Government Relations

Mihran Toumajan, Government Relations Manager

Becky Ezell, Director of Administration

Shelby Donine, Marketing &amp; Communications Manager

Dianna Xochitlotzi, Coordinator, Programs and Events

Chapter Office: 918 E. Santa Ana Blvd., Santa Ana, CA 92701 Tel: (714) 550-0309

In addition, we are concerned that the socioeconomic analysis to be conducted by District staff will be flawed and will not represent an accurate picture of the costs to comply with the proposed regulations, since our industry is not considered an affected industry and impacts to our industry may not have been included in the analysis.

32-1

For example, office buildings built in the 1970s were built without central heating and air. Property owners would be faced with large expenses to retrofit such buildings in order to comply with PAR 1111 and PAR 1121.

Another example will be the expenses required to retrofit more commonly installed “split systems.” These types of systems usually have one portion of its unit outside and the other mounted on the inside. An increase in capital expenses on buildings with existing AC will be the replacement of these split systems, since the building owner will not be allowed to replace just the heater if the heater fails. They will be required to replace both sides of the “split system” – the piece mounted indoors and the piece mounted outdoors.

Who is expected to pay for the new furnaces and water heaters? Who is expected to work with the utilities to make sure new electrical hook-ups can be made in a timely manner for new tenants to occupy a property? The likely answer: Commercial property owners. We urge the District to incorporate the costs and potential delays in occupancy for new tenants as part of the accompanying socioeconomic analysis.

32-2

Finally, NAIOP SoCal is concerned that the proposed rules assume that electrical utility providers will be able to meet the increased demand for electricity, which will be created by this shift from natural gas equipment to electrical equipment. NAIOP SoCal is concerned that the current electrical infrastructure system does not have the capacity to meet the additional demand that will be created on the system due to the proposed rule.

32-3

We urge the District to revise PAR 1111 and PAR 1121 to provide commercial property owners greater flexibility and time to deal with already existing leases set to renew by the end of 2026, or until such time that our local utility provider informs property owners concerned about occupancy delays that the utilities can accommodate new electrical hook-ups, which would be required due to the installation of a new system.

We welcome the opportunity to meet with the District to further discuss our concerns with PAR 1111 and PAR 1121 and provide examples as to how the proposed rules would impact our Members. For further information, please contact Mihran Toumajan, [mtoumajan@naiopsocal.org](mailto:mtoumajan@naiopsocal.org) or 818-817-1714.

Sincerely,



Timothy Jemal  
CEO  
NAIOP SoCal



**Response to Comment Letter #32***Response to Comment 32-1*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The new rule concept also revised the proposed applicability; the revised PAR 1111 and PAR 1121 are applicable to residential-sized units, minimizing any potential impact to commercial or industrial facilities.

PAR 1111 and PAR 1121 are applicable to manufacturers, distributors, retailers, resellers, and installers, which means they are subject to enforcement for any violation of the rules. The Socioeconomic Impact Assessment specifically considers how costs or savings will be passed on from these affected parties to commercial tenants and households. Specifically, the Socioeconomic Impact Assessment includes the incremental costs to purchase zero-emission HVAC and water heating units, retrofit existing buildings to accommodate these units, make necessary electric panel upgrades, and the energy costs related to the transition to electric heating. These costs are used to evaluate the potential socioeconomic impacts of both directly and indirectly impacted entities including consumers. Please also refer to Response to General Comment 6.

Staff's BARCT analysis consists of technologies and the cost-effective calculation is based on the costs of installing zero-emission technologies. The Socioeconomic Impact Assessment identifies and evaluates the potential socioeconomic impacts of a proposed development on the lives and circumstances of people, their families and their communities. Specifically, the analysis has considered the range of probable costs or savings, impacts to small businesses, and impact on employment and the regional economy. Staff also conducted a sensitivity analysis, the base case that included fuel-switching savings and an analysis that assumed no fuel-switching savings.

Chapter 2 provides discussion on zero-emission technologies. There are many new and emerging technologies that are viable for multifamily buildings to suit various consumer needs, and some are less likely to require a panel upgrade and construction. For example, while a mini split is an ideal option for many, the property owner may choose a 120V portable heat pump for a small rental apartment to avoid the higher cost.

*Response to Comment 32-2*

Staff recognizes the challenge of grid reliability and is in contact with local utilities as well as state planning agencies like the CEC and CPUC. Please refer to Response to General Comment 3 for further discussion on the electric grid.

*Response to Comment 32-3*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please see Response to General Comment 1 and Response to General Comment 3 for further discussion.

**COMMENT LETTER #33: RHEEM MANUFACTURING COMPANY**

The new degree of comfort.™

Comment Letter #33

October 17, 2024

Via Email: [pcampbell@aqmd.gov](mailto:pcampbell@aqmd.gov), [jvinh@aqmd.gov](mailto:jvinh@aqmd.gov)

Mr. Peter Campbell  
Ms. Jennifer Vinh  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive, Diamond Bar, CA 91765

**RE: Proposed Amended Rule 1111 Reduction of NOx Emissions From Natural Gas-Fired Furnaces Proposed and Amended Rule 1121 – Reduction of NOx Emissions From Small Natural Gas-Fired Water Heaters**

Dear Mr. Campbell and Ms. Vinh,

Rheem Manufacturing Company (Rheem) appreciates the opportunity to submit the following comments in response to the South Coast Air Quality Management District's (SCAQMD) Proposed Amended Rule 1111 Reduction of NOx Emissions from Natural Gas-Fired Furnaces Proposed and Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (Proposed Rules).

Rheem is an industry leader in total heating, cooling, refrigeration and water heating solutions and one of the few global brands with product offerings covering residential and commercial heating, cooling, conventional and hybrid storage water heaters (HPWH), tankless water heaters, solar water heating systems, pool and spa heaters, commercial boilers, residential hydronic and geothermal systems, commercial refrigeration products, indoor air quality accessories, and replacement parts for all categories. Rheem is headquartered in Atlanta, Georgia, and has U.S. based manufacturing facilities in Alabama, Arkansas, California, Connecticut, and North Carolina. The company also operates distribution facilities throughout the US, Canada, and many other countries around the world. Rheem manufactures commercial boilers and pool heating equipment at the Raypak facility in Oxnard, CA, which are affected by SCAQMD rules.

Rheem appreciates SCAQMD staff's efforts to update the subject Rules and specifically to include and consider stakeholder input. Rheem would like to express, and reiterate our concerns around the compliance dates, the expanded scope for commercial furnaces, and the new labeling and reporting requirements.



RHEEM MANUFACTURING COMPANY • 1100 ABERNATHY STE. 1400 • ATLANTA, GA 30328 • RHE



### Purpose and Applicability

Under the current and proposed rules 1111 and 1121, propane gas-fired furnaces and water heaters are not covered. Rheem understands that a field-convertible natural/propane gas-fired product would be covered, tested, and certified under the natural gas-fired configuration.

Rheem notes that mobile (manufactured) home furnaces and water heaters are typically field-convertible natural/propane gas-fired products, with unique design features<sup>1</sup> specifically required for mobile installation, and are not approved for non-mobile home applications. Given this practice, Rheem is not concerned about circumvention of the rule for non-mobile home product propane to natural gas conversions.

### Definitions

Rheem recommends the “mobile home” definitions align with the California Energy Commission’s (CEC) definition<sup>2</sup> of “mobile home” and Federal Department of Housing and Urban Development’s (HUD) definition<sup>3</sup> of “manufactured home” as much as possible. However, it should be recognized that ANSI Z21.10.1, the safety standard required for the water heaters covered by Rule 1121, has a slightly different definition and uses the term “manufactured home (mobile home)” to capture the different types of structures while excluding recreational vehicles. This standard prescriptively requires the term “manufactured home (mobile home)” to be used for certain markings. For consistency, Rheem recommends this term be used interchangeably with “Mobile Home” in this rule for product labeling.

33-1

Rheem recommends the following definition:

*MOBILE HOME means a structure, transportable in one or more sections, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning, and electrical systems contained in the structure.*

Rheem recommends the following minor modification to the “new building” definition as the 2025 Title 24 will publish around the same time as the Governing Board meeting currently scheduled for December.

“NEW BUILDING means a building that is newly constructed, or a building with a major alteration which changes the occupancy classification of a building, which means a change in the formal designation of the primary purpose of the building pursuant to 2022 Title 24

<sup>1</sup> Direct inlet air venting through the floor and exhaust venting through the ceiling.

<sup>2</sup> CEC definition of “mobile home”:

[https://govt.westlaw.com/calregs/Document/11F4EF800995D11EC8315E3DE9BEF651C?viewType=FullText&origin=atoc&transitionType=CategoryPageItem&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Document/11F4EF800995D11EC8315E3DE9BEF651C?viewType=FullText&origin=atoc&transitionType=CategoryPageItem&contextData=(sc.Default))

<sup>3</sup> HUD definition of “manufactured home”: <https://www.ecfr.gov/current/title-24/subtitle-B/chapter-XX/part-3280/subpart-A/section-3280.2>.



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California Building Code Part 2 Chapter 3 for occupancy classification and use, or any subsequent version of the Building Code.”

33-1

**Scope**

Rheem is concerned about the broad scope of Rule 1111 and the inclusion of commercial furnaces 175,000 to 2 million Btu/h. Rheem recognizes that a very small subset of products included already have zero-NOx replacement solutions and that with sufficient development time and incentives this offering will grow. However, there is also a significant portion of the products and applications covered by the regulation that cannot easily or cost-effectively be transitioned within the proposed timeframe, especially in emergency replacement situations. Large space heating installations, which have not historically been subject to ultra-low NOx rules, will require a broad portfolio of heat pumps with cold climate capability that may not be ready to meet the proposed effective dates and could result in significant cost impacts to consumers and businesses where replacements or retrofit products are not available.

33-2

**Requirements**

The 2025 version of California’s Title 24 essentially requires electric heat pump space and water heating in new construction. This is done through “electric ready” construction requirements<sup>4</sup> and energy modelling with an electric heat pump space and water heater baseline. For water heating, all new construction will have to have all the building components for effective electric heat pump water heater installation and operation, which removes installation advantages for gas-fired and electric resistance water heaters. By the proposed new construction compliance date, any installation using an electric resistance or gas-fired water heater will need to make other efficiency improvements to comply with Title 24. Given the number of constraints the builder must navigate to install a non-electric heat pump water heater, Rheem expects very few new constructions to use a gas-fired water heater. Within rule 1121, Rheem recommends that the new construction non-mobile home water heater date be removed and that the rule only retain the January 1, 2027, date for new construction and existing buildings. This change would simplify the requirements for most residential structures within South Coast’s jurisdiction, minimize distribution complications, and ease labeling confusion. Further, this change would align with the Bay Area AQMD’s zero NOx date for all installations (i.e., January 1, 2027).

33-3

Rheem recommends that products required for the alternate compliance options be explicitly referred to within section (d)(2) of rule 1121. These products will need to be sold into distribution to serve the needs of the rental market. Rheem recommends the following language, “On and after the applicable Table 2 compliance dates, no person or entity shall install a Water Heater for use in the South Coast AQMD that exceeds the Table 2 NOx emission limits, unless intended for use in an alternate compliance option as described in (f) or meeting exemptions in (h).” Also, it should be recognized that certain retailers and wholesalers within

<sup>4</sup> For water heating, 240V/30A wiring, drain, and minimum room volume to install a large storage water heater.



INTEGRATED HOME COMFORT



the South Coast jurisdiction could offer for sale water heaters specifically for installation outside the jurisdiction not subject to this rule.

33-3

Rheem strongly encourages Staff to implement a compliance regime for rules 1111 and 1121 based on date of equipment manufacture, rather than installation, to make planning and inventory management straightforward for manufacturers, distributors, and contractors.

### **Certification**

The proposed 1121 only requires certification to section (d)(1), which includes the Table 1 emission limits (e.g., ultra-low NOx) and not the Table 2 emission limits (e.g., zero NOx). Therefore, natural gas-fired water heaters that are compliant with the Table 2 emission limits do not need to be certified. Rheem supports this as the current test method cannot be used to confirm a water heater has zero emissions due to measurement accuracy, equipment tolerances and no correction for emissions that are already present in the ambient air.

33-4

### **Exemptions**

Rheem recommends that Staff reconsider its exclusion of dual-fuel systems as a compliance pathway for the requirements in rule 1111. Dual-fuel systems provide an ideal pathway to lower NOx emissions and a way to reach an average NOx emissions of less than 14ng/J. Not only would a dual-fuel pathway limit NOx emissions but it also would help bridge the cost and availability gaps that exist in switching to heat pumps with cold climate capability.

33-5

SCAQMD should include a definition of dual-fuel systems in the proposed rule with control requirements to ensure the weighted average NOx emissions are below the requirements. Dual-fuel systems also should be considered as an option in the environmental analysis, especially given the impact to low- and medium-income consumers.

### **Alternate Compliance Options**

Rheem recommends a minor clarification to section (f)(1) of rule 1121, "~~If a Water Heater an Existing Building~~ requires a short-term replacement due to sudden Water Heater failure [...]." The building or consumer needs a replacement water heater, not the existing water heater.

The proposed section (f) does not require rental units to be certified. Rheem understands this is intended as South Coast may not maintain their existing database.

33-6

Rheem recommends that the section (f)(1) alternate compliance option extend the rental period to 24 months. The "construction" option in (f)(2) could arguably be applied for most "electrical upgrade" installations due to broad provisions and uncertain enforcement around expanding the space or relocating equipment. Further, Rheem is concerned that there are several issues the consumer or installer will need to handle for each of these installations, including but not limited to, permitting and performing at least 2 installations, and applying for



INTEGRATED HOME COMFORT



rebates/incentives. Finally, as up to 5 million homes will need to be upgraded, Rheem is concerned about the availability of electricians to perform the electrical upgrades.

33-6

**Emergency Replacements**

Staff should consider and recognize that there are multiple applications and installation challenges that need to be overcome and addressed prior to the Rule 1111 compliance dates. A key installation challenge is emergency replacement where the electric service, equipment footprint, or product availability prevents immediate compliance and affordability. The proposed alternate compliance option to obtain a rental furnace for no more than six months is an expensive and impractical option, particularly for commercial applications where equipment is removed and installed by crane and where footprint modifications are costly and require advanced planning. Staff should consider a mitigation fee or other exemption pathway to prevent dire outcomes for businesses.

33-7

**Labeling**

Consistent with the prior recommendation to align the new construction and existing building compliance date for non-mobile home water heaters, Rheem recommends that South Coast remove or revise the labeling requirements in rules 1111 and 1121. With natural gas-fired water heaters and furnaces still expected to be distributed to other air districts after January 1, 2027, and for rental purposes, having label language that identifies specific prohibitions in South Coast and Bay Area could be helpful, but should not be prescribed in this rule. For example, manufacturers may choose to denote “Not for installation in the South Coast and Bay Area AQMD(s) after January 1, 2027” for products distributed in California.

Rheem recommends a mobile home specific label be applied to mobile home products and recommends the following: “Not for installation in South Coast AQMD after January 1, 2026, for newly constructed manufactured (mobile) homes or after January 1, 2030, for existing manufactured (mobile) homes. Excludes master-metered mobile home parks.”

33-8

Finally, Rheem requests South Coast clarify that the rental label is to be applied by the rental company and, when applied, should not cover any other label on the product.

**Reporting**

Rheem does not support the reporting requirements at section (g)(4). Manufacturers of furnaces and water heaters, who primarily serve the market through wholesalers and distributors, have limited knowledge and data on the exact location where their products are installed. Products shipped to distributors or retailers within South Coast may not be installed in the South Coast jurisdiction, while products shipped outside, but near, South Coast could easily be brought in without the manufacturer’s knowledge. Further, rental units, for use when the alternate compliance options of section (f) are needed, will need to be available within the South Coast jurisdiction for installers to purchase. Reporting requirements are better left to





point-of-sale entities, therefore, Rheem recommends this section be removed or amended to address point-of-sale entities.

33-8

### Conclusion

Rheem remains committed to bringing sustainable water heating and HVAC solutions to the market to achieve decarbonization goals and to provide cost-effective heating and cooling solutions for new construction and replacement applications serving a broad cross-section of residents, homeowners, and businesses.

Thank you for the opportunity to provide these comments. If there are questions, please contact me directly.

Sincerely,

James Phillips  
Senior Regulatory Affairs Manager  
Rheem Manufacturing Company

cc: Karen Meyers, Allison Skidd, Joe Boros



INTEGRATED HOME COMFORT

**Response to Comment Letter #33***Response to Comment 33-1*

Staff appreciates the comments. Rule 1111 already contains language requiring labels for furnaces intended to be used for propane only. Staff has aligned the definitions for mobile home and new building for the most part as recommended.

*Response to Comment 33-2*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept also revised the proposed applicability for PAR 1111 and will not expand to larger size spacing heating units typically used in commercial facilities. Furnaces with rated heat input capacity in the range of 175,000 to 2,000,000 Btu/hr will be addressed in the future rulemaking.

*Response to Comment 33-3*

Staff understands that while the prescriptive compliance option for Title 24 would require heat pumps, the performance compliance option would still allow non-zero NOx equipment to be installed. In addition to the new rule concept for manufacturer alternative compliance option, staff has revised new building compliance date from 2026 to 2027 under paragraph (d)(2), which aligns with commenter's suggestion. Labeling requirement is a common compliance tool used in area sources rules such as PAR 1111 and PAR 1121. Please see Response to Appendix C Comment 27-4 for more on labeling requirement. With the proposed new rule concept, consumers may opt to gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.

PAR 1111 and PAR 1121 apply to the manufacturers, distributors, retailers, resellers, and installers for installations in the South Coast AQMD jurisdiction. Any installation outside of the region by retailers and wholesalers will not be subject to those rules. Staff held discussions on this concern with stakeholders in previous rulemakings and believes there are viable ways to identify the units for shipment to other regions at the distribution level.

*Response to Comment 33-4*

Staff agrees with Rheem's understanding that only gas units complying with Table 1 NOx standards need to be certified.

*Response to Comment 33-5*

For a discussion on dual fuel systems, please see Response to Appendix C Comment 27-3.

*Response to Comment 33-6*

With the proposed new rule concept, consumers may opt to gas units if installing zero-NOx emission units would be challenging for emergency replacements. Short-term replacement



with rental equipment is no longer needed and thus removed from the proposed amended rules.

*Response to Comment 33-7*

With the proposed new rule concept, consumers may opt to install NO<sub>x</sub>-emitting natural gas units if the choice to install zero-NO<sub>x</sub> emission units is too costly or challenging. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.

Please refer to Response to General Comment 7 for discussion on emergency replacements.

*Response to Comment 33-8*

For a discussion on labeling, please see Response to Comment 27-4. For a discussion on reporting requirements, see Response to Comment 27-8.

**COMMENT LETTER #34: KIM HORNBERG**

Comment Letter #34

**Peter Campbell**

**From:** Kim Hornburg <kjhornburg@gmail.com>  
**Sent:** Thursday, October 17, 2024 2:54 PM  
**To:** Peter Campbell  
**Subject:** [EXTERNAL] Proposal to Amend Rules 1111 and 1121

Dear Mr. Campbell,

My name is Kim Hornburg, residing in Crestline, Ca. As one of the approximately 44,000 residents living year round in the San Bernardino Mountains who relies on gas for day-to-day living - heating, cooking, bathing, laundry, etc. - I am extremely concerned about these issues.

Although we live in temperate Southern California, our climate here is more akin to that of the eastern states during the colder months. This fact does not seem to have been taken into consideration in the studies conducted to support these initiatives.

The conversion of our predominately gas system to an all-electric grid would be prohibitive on numerous levels, and therefore life-threatening for many of us when the temperatures dip to freezing and below. It is my hope that these actions will be reevaluated and adjusted to take our unique circumstances into consideration.

34-1

Yours truly,  
 K Hornburg

**Response to Comment Letter #34***Response to Comment 34-1*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff understands the importance of heating in mountain communities. Please see Response to General Comment 8 for discussion on cold climate heat pumps and Response to General Comment 2 for discussion on cost.

**COMMENT LETTER #35: BRADFORD WHITE CORPORATION**

Comment Letter #35



October 17, 2024

Heather Farr  
 Planning and Rules Manger  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

Re: Proposed Rule 1121

Dear Ms. Farr:

On behalf of Bradford White Corporation (BWC), we would like to thank you for the opportunity to comment on South Coast Air Quality Management District's (SCAQMD) proposed Rule 1121 and working groups.

We have compiled our comments and questions to the proposed rule 1121 (PAR 1121), supporting documents and analysis.

**General**

BWC has reviewed PAR 1121 and participated in all the working groups lead by SCAQMD staff. We appreciate staff's consideration of our comments and those of other stakeholders being addressed in the working groups, as well as staff's due diligence conducting site visits. We have compiled comments specific to PAR 1121 language below. In addition to these comments, after completing site visits with staff members and participating in the most recent working group meeting on August 15, 2024, BWC has significant concerns with staff's feasibility assessment of replacing water heaters under PAR 1121 and have provided those comments as well.

**Rental Equipment**

We have concerns regarding the two exceptions outlined in PAR 1121 Section(f), subsection 1&2. We appreciate the creativity by allowing rental units, however we believe this solution may prove to be incredibly complicated and costly for homeowners and renters. TECH Clean California ran a quick start grant for this same idea and, importantly, covered the cost of the temporary water heater and labor through the program. If the District believes rental equipment will enable an affordable transition, then BWC recommends the District develop, administer and fund a program, as opposed to relying on the market to

35-1

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create such an offering. We strongly encourage the District to read the quick start grant report<sup>1</sup> and discuss with project stakeholders.

### **Product Labeling**

Similar to rule 1146.2, the District proposes to require that manufacturers affix labels to equipment to inform purchasers and installers. As stated in our letter dated January 19, 2024 and repeated below, we strongly believe the proposed labeling requirement, as written, is unnecessary to enforce the rule and will add significant burdens to compliance for manufacturers of regulated products:

*“SCAQMD currently maintains a qualified products list<sup>2</sup> for all manufacturer water heating and boiler models certified under Rule 1146.2. To enforce the proposed Zero NOx implementation dates, SCAQMD could simply modify their table to show models that are allowed in new construction and models that are only allowed in existing buildings. Secondly, new construction requires plans to be submitted to building jurisdictions to review, as well as Title 24 energy modeling. SCAQMD can work with building jurisdictions within their territory that review and approve project plans to enforce the use of Zero NOx water heating and boiler equipment. Lastly, new construction projects are permitted and require building inspectors to approve the construction. If a non-compliant product were to be installed, it could ultimately be flagged for removal by the building inspector.”<sup>3</sup>*

Unlike products in scope of Rule 1146.2, the regulated product class of water heaters and boilers under 75,000 Btu/hr input, are rarely if at all used in new construction in California. In 2016, California adopted instantaneous gas water heaters as the standard design for newly constructed homes, and multifamily apartments.<sup>4</sup> We challenge the district’s assumption that a label is necessary to enforce installations in new construction versus existing buildings for this product class, and respectfully request that the district validate this through developer interviews, permit records and the Energy Commission through Title 24 project submissions.

If the District must continue to use labels as an enforcement mechanism, we suggest that the label language in PAR 1121 be the same as the language adopted in Rule 1146.2 “If Installed in South Coast AQMD: For Installation and Use in Existing Buildings Only”. The suggested language in PAR 1121 “If Installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings 2) After January 1, 2027, only for installation in mobile homes; and 3) After January 1, 2030, not compliant for use and installation in South Coast AQMD.” is lengthy. Moreover, the proposed language also implies all labeled equipment is suitable for use in mobile homes. Manufacturers produce water heating products that are specifically designed for and certified to be used safely in a mobile home. The proposed language for the label will create confusion among installers and may result in equipment not certified for use in mobile homes being installed in a mobile home. Despite rule 1146.2 being finalized, the same concern exists for the required label on instantaneous water heater products, for use in mobile homes.

### **Product Reporting**

<sup>1</sup> [Barnett Plumbing - Final Report 230810.pdf \(appack-app-tpr-prod-privates3bucket-tvt5lpzx0gqm.s3.amazonaws.com\)](#)

<sup>2</sup> [Rule 1146.2 - Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters \(aqmd.gov\)](#)

<sup>3</sup> [bradford-white-corporation-comment-letter--01-19-2024.pdf \(aqmd.gov\)](#)

<sup>4</sup> [Building Energy Efficiency Standards for Residential and Nonresidential Buildings for the 2016 Building Efficiency Standards | California Energy Commission](#)

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BWC does not agree with the newly proposed annual reporting requirements for manufacturers. As a manufacturer, we have limited influence or knowledge as to where a product will ultimately be installed after it is manufactured. Manufacturers have limited capability to control a product’s final installation location.

Regarding Section (g), Subsection (4), Paragraph (E) of PAR 1121, we wish to emphasize that the data that District staff is requiring to be provided is information that product manufacturers keep very closely guarded. To that end it is unclear to BWC as to why District staff believes this information is necessary to fulfill their enforcement obligations related to this rule since the current rule has been effectively enforced without it.

35-2

We believe District staff should clarify that manufacturers are permitted to work through representative trade associations to provide this information in an aggregated format. Additionally, we strongly urge District staff to add language to this paragraph of PAR 1121 that clarifies that the District will treat such data as Confidential Business Information (CBI) that will not be shared by the District with any third parties. Apart from clarifying the allowance of this common practice, such language would also provide assurances to manufacturers that they are not being compelled to directly or indirectly disclose CBI, specific to their organization, that other parties would not otherwise have access.

If reporting is to be required, we ask that the District use the manufacture date of equipment, consistent with how other regulatory bodies implement such requirements, including the Bay Area Air Quality Management District<sup>5</sup>, and not the date of sale or installation.

**Feasibility Analysis**

On August 15, 2024, staff presented their findings from conducting site visits and analyzing different installation scenarios. The presentation focused on 120-volt Heat Pump Water Heaters and suggested that these products were a feasible alternative to natural gas in every scenario evaluated. We disagree with staff’s conclusion that a 120-volt product is comparable in hot water utility to a commonly seen ultra-low NOx 40-gallon atmospheric vent storage water heater. We have provided a product comparison showing that end users access to hot water would be reduced by over 50%.

35-3

	URG140T6N <sup>6</sup>	RE2H50S10-CON <sup>7</sup>	PROPH65 T0 RH120-M <sup>8</sup>	HPTV-66 <sup>9</sup>
Fuel	Natural Gas	Heat Pump Electric 240v	Heat Pump Electric 120v	Heat Pump Electric 120v
Rated Storage Volume (US Gal)	38	45	59	68
First Hour Rating	64	65	63	76
Usage Pattern	Medium	Medium	Medium	High
Recovery @ 90°F Rise (US Gal)	37	24	Not Listed	Not Listed

<sup>5</sup> [20230315\\_rg0906-pdf.pdf \(baaqmd.gov\)](https://www.baaqmd.gov/20230315_rg0906-pdf.pdf)

<sup>6</sup> [residential\\_gas\\_ultra\\_low\\_nox\\_atmospheric\\_vent\\_naeca\\_compliant\\_specsheets\\_1113.pdf](#)

<sup>7</sup> [residential\\_heat\\_pump\\_aerotherm\\_re\\_series\\_con\\_specsheets\\_1901.pdf](#)

<sup>8</sup> [RH-PIHP-SC-REV5\\_Plus-without-Leakguard-0627B.pdf \(rheem.com\)](#)

<sup>9</sup> [ARXSS00123.pdf \(hotwater.com\)](#)

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	URG140T6N <sup>6</sup>	RE2H50S10-CON <sup>7</sup>	PROPH65 T0 RH120-M <sup>8</sup>	HPTV-66 <sup>9</sup>
Recovery @ 60°F Rise (US Gal)	Not Listed	Not Listed	12	Not Listed

While it is seemingly feasible to select a HPWH product, either 240-volt or 120-volt, based on a comparable first hour rating, this selection overlooks an important factor, which is the ability for the heater to recover hot water. The table shows a comparison of four products, a 40-gallon ultra-low NOx natural gas atmospheric vent heater, a 50 gallon 240-volt HPWH, a 65 gallon 120-volt HPWH and a 66 gallon 120-volt HPWH.

- A 240-volt HPWH has a gallon per hour (GPH) recovery that is 35% lower than the baseline natural gas unit.
- A 120-volt HPWH has a has a GPH recovery that is 68% lower than the baseline natural gas unit.

35-3

Recovery is important as it determines how long an end user might have to wait for hot water if their tank has been depleted. A 40-gallon ultra-low NOx natural gas atmospheric vent heater can recover almost an entire tank of hot water in an hour. A 240-volt HPWH, assuming ideal conditions and use of a common 4,000 watt heating element working in concert with a compressor, would take nearly two hours or twice as long. A 120-volt HPWH, assuming ideal conditions and no heating element, would take nearly five hours: five times as long to recover. While a 120-volt HPWH may serve a purpose for niche applications where hot water demand is low, it cannot be considered a feasible solution in all cases as emphasized by the District in their analysis as it is far more likely leave many homeowners and renters in the District without adequate hot water for a substantial part of the day.

As the District prepares to adopt PAR 1121, it is essential that the District also prepare to inform the public of the benefits and drawbacks of transitioning to zero NOx water heating products. Consumers must be made aware of all potential installation challenges that will allow them to make an informed decision on the products they choose to have installed in their home, often at a substantial cost. As a manufacturer of these products, BWC recognizes there is no "one-size-fits all" solution to the obstacles that homeowners and renters may encounter. For that reason, we offer many unique products that are designed to meet homeowners and renter needs in a variety of installations. We additionally provide tools for installers, such as RightSpec<sup>®</sup>10 to ensure the homeowner's and renters hot water utility can be met.

35-4

In closing, we appreciate the opportunity to provide public comment on PAR 1121 and encourage the District to take our suggestions and feedback into consideration as they finalize PAR 1121. We welcome continued dialogue on these matters and would be pleased to have further, direct, conversations with District staff.

Please let me know if you have any questions or would like to schedule a meeting to discuss our comments further.

Respectfully Submitted,

Bradford White Corporation

<sup>10</sup> [RightSpec<sup>®</sup> Sizing Software | Bradford White Water Heaters. Built to be the best. \(bradfordwhiterightspec.com\)](https://www.bradfordwhiterightspec.com)

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**Response to Comment Letter #35***Response to Comment 35-1*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

With the proposed new rule concept, consumers may opt to purchase NOx-emitting natural gas units if the choice to install a zero-NOx emission unit is too costly or challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules. Please see Response to General Comment 7 for discussion about emergency replacement.

*Response to Comment 35-2*

Labeling requirements are a common enforcement tool for area sources rules and have also been required for certified natural gas units. For example, when mitigation fee options were implemented for a furnace certified at 40 ng/J to meet the 14 ng/J standard, a specified labeling language was required. Please see Response to Appendix C Comments PW-14 and 27-4 for more on the labeling requirement.

The 2025 Building Code encourages inherently efficient electric heat pump technology for space and water heating in newly constructed single-family, multifamily, and select nonresidential building types. PAR 1111 and PAR 1121 align with the Building Code for the new building compliance date. Staff believes that a label for natural gas that can only be installed in existing buildings is necessary to enforce zero-emission installations in new constructions.

Staff has revised the labeling provision to allow manufacturers to propose simplified labeling language for approval.

With the new rule concept, the revised PAR 1111 and PAR 1121 have removed previously proposed alternative compliance options and the associated reporting requirements.

*Response to Comment 35-3*

While staff acknowledges the recovery rate should be considered when sizing and installing 120V heat pump water heaters, staff believes the 120V option is still feasible in many cases where consumers elect to install zero-NOx emission units. Manufacturers designed the 120V heat pump water heaters specifically with retrofits in mind, particularly targeting the water use of a small household. The New Buildings Institute 120V HPWH study<sup>(25)</sup> found hot water runouts in only 5 of 32 sites, and all 5 sites ceased having hot water runouts after changes to set points and simple modifications to behavior. The comparison also does not take into account 120V heat pump water heaters designed for a dedicated circuit and which can be installed in many homes and have similar recovery rates as the 240V heat pump water heaters.

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<sup>(25)</sup><https://newbuildings.org/resource/plug-in-heat-pump-water-heater-field-study-findings-market-commercialization-recommendations/>

*Response to Comment 35-4*

Staff agrees that outreach and public education is essential for training on zero-emission technologies. Please refer to Response to General Comment 5 for further information regarding outreach.

Staff also recognizes that consumers often rely on installers for suggestions on the types of installations. There are many training opportunities offered to contractors through manufacturers, various incentive programs (e.g., TECH Clean California), utility companies, and local agencies. They could be in-person and virtual trainings. The Go Zero incentive program has also allocated funds for installer training. The training sessions will present contractors with the intricacies of installations and also provide training on permit processes and improve their ability to secure permits to complete electrical and mechanical connections. The anticipated launch of the Go Zero incentive program is 2025.

Staff appreciates that Bradford and White Corporation, as a manufacturer of these products, provides tools for installers. Staff will ensure the Go Zero installer training program enhances installer awareness of those tools.



**COMMENT LETTER #36: CLIFF HAMLOW**

Comment Letter #36

**Peter Campbell**

**From:** Cliff Hamlow <chamlow@apu.edu>  
**Sent:** Thursday, October 17, 2024 4:21 PM  
**To:** Peter Campbell  
**Cc:** Michael Allawos  
**Subject:** [EXTERNAL] NOx emissions limits

AQMD Stationary Source Committee:

Regarding scheduled vote on proposed amendments to **two rules** that would **set NOx emissions limits at zero** for **residential and commercial space heating and residential water heating**. Amended rules will apply to the manufacturing, sales, and installation of these appliances – essentially eliminating natural gas appliances for these uses.

I am totally opposed to this nonsense proposed rule. There is not enough electricity or other sources of energy in California to sustain such a rule.

Please reign in this proposal and maintain the rules we currently have. Prices of construction and replacement of current appliances is too high for the regular citizen to afford.

Cliff Hamlow,  
 Former Mayor, City of Glendora

36-1

**Response to Comment Letter #36***Response to Comment 36-1*

Staff appreciates the comments. The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For a discussion on electrical production and grid reliability, please see Chapter 2 of this Staff Report and Response to General Comment 3. In order to meet National Ambient Air Quality Standards, the 2022 AQMP required staff to seek out zero-emission standards wherever feasible. While staff acknowledges there may be increased cost of zero-emission technologies, staff believes the increased market adoption, incentive programs, and operational cost savings will result in overall affordability of zero-emission units.

**COMMENT LETTER #37: SOCALGAS**

Comment Letter #37



Kevin Barker  
Senior Manager  
Energy and Environmental Policy  
555 West 5<sup>th</sup> Street  
Los Angeles, CA 90013  
Tel: (916) 492-4252  
[KBarker@socalgas.com](mailto:KBarker@socalgas.com)

October 17, 2024

Senator Vanessa Delgado, Chair and  
Honorable Governing Board Members  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

**Subject: Comments on Proposed Amendments to Rule 1111 and Rule 1121**

Dear Senator Delgado and Honorable Members of the Governing Board:

Southern California Gas Company (SoCalGas) appreciates the opportunity to provide public comments on the South Coast Air Quality Management District (South Coast AQMD) Proposed Amendments to Rule (PAR) 1111 and Rule (PAR) 1121. If adopted, the proposed amendments will require millions of residents within the South Coast Air Basin to replace approximately 10 million affected units once the existing appliance requires replacement and will require all new buildings to install fully electric space and water heating appliances. These rules create significant burdens for consumers and will cost billions of dollars to reduce overall nitrogen oxide (NOx) emissions within the South Coast Air Basin by just 2.8% or 10 tons per day out of the total 351 tons per day of NOx emitted by all sources within the territory<sup>1</sup>. Even if all sources regulated by the California Air Resources Board (CARB) and South Coast AQMD were zero emission, federal sources alone would emit substantially more than the 60 tons per day NOx limit the District must achieve to comply with federal ozone standards.<sup>2</sup> SoCalGas supports policies to achieve NOx reductions, provided such policies are feasible, permitted by federal law, cost-effective, and commercially available. However, SoCalGas has numerous concerns with the proposed rule, including a concern that it is preempted by federal law.

<sup>1</sup> South Coast AQMD, "Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121," September 2024, Page 5-1, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>2</sup> South Coast AQMD, "2022 Air Quality Management Plan Executive Summary," December 2022, Page ES-6, <https://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/03-es.pdf?sfvrsn=6>.

SoCalGas’s comments highlight the following concerns: 1) The proposed rules effectively ban certain appliances covered by the federal Energy Policy and Conservation Act (EPCA); 2) It is imperative that South Coast AQMD inform residents and business owners of the impacts of PAR 1111 and 1121 prior to Board consideration, as it appears that the majority of residents and business owners in the South Coast AQMD jurisdiction are wholly unaware of these significant changes; 3) South Coast AQMD staff need to provide the datasets and assumptions used to perform cost-effectiveness calculations to allow stakeholders to better assess the impacts of the proposed amendments; 4) Several assumptions within the cost-effectiveness analysis are inconsistent and should be reevaluated by staff; 5) Among other issues, the Draft Subsequent Environmental Assessment does not sufficiently explain why energy impacts from PAR 1111 and 1121 are less than significant; 6) Staff should clarify why they plan to perform a technology check-in after rule implementation; and 7) The financial impact of the proposed amendments has not been adequately evaluated and will be burdensome to the everyday customer.

### 1. The proposed rules effectively ban certain appliances covered by EPCA

Under a recent ruling by the Ninth Circuit Court of Appeals, *California Restaurant Association v. City of Berkeley*, 89 F.4th 1094 (9th Cir. 2024), the Court held that EPCA preempts all regulations “that relate to ‘the quantity of [natural gas] directly consumed by’ certain consumer appliances at the place where those products are used.” *Id.* at 1101. “[A] regulation on ‘energy use’ fairly encompasses an ordinance that effectively eliminates the ‘use’ of an energy source.” *Id.* at 1102. Here, similar to the Berkeley ordinance, the effect of the proposed rules is to reduce the quantity of gas consumed by EPCA-covered appliances to zero. Under *Berkeley*, States and localities cannot avoid EPCA’s preemption provisions “by doing *indirectly* what Congress says they can’t do *directly*.” *Id.* at 1107 (emphasis in original).

37-1

### 2. It is imperative that South Coast AQMD inform residents and business owners of the impacts of PAR 1111 and 1121 prior to Board consideration, as it appears that the majority of residents and business owners in the South Coast AQMD jurisdiction are wholly unaware of these significant changes

It is incumbent upon regulatory agencies to ensure affected parties of any rulemaking process know and have an opportunity to understand the proposed changes to rules before the rule amendments are adopted. While staff held six (6) working group meetings and one public workshop, most attendees were manufacturers, contractors, and environmental justice leaders. Given this, it is our impression that the majority of residents and business owners in the South Coast AQMD territory are wholly unaware of the significant changes being proposed.<sup>3</sup>

37-2

<sup>3</sup> This was evident at the California Air Resources Board’s (CARB) August 22, 2024, Virtual Listening Session on CARBs similar Zero-Emission Space and Water Heating Standard. This listening session intended to engage residents of Southern California. While the meeting was co-hosted by Climate Action Campaign (CAC) with CARB and attended by South Coast AQMD staff, unfortunately the public was not informed about this opportunity to learn about these proposed regulations. As such, the meeting was attended by fewer than 45 people in a region of 17 million and the majority of attendees were government agency staff, members of CAC, and SoCalGas staff.

It is essential that the public is made aware of these proposed amendments, since the requirements and impacts are far reaching. When the Board adopted its most recent amendments to Rule 1146.2 in June 2024, which regulates NOx emissions from large water heaters, small boilers and process heaters, two members emphasized the need for an immediate outreach campaign to inform those affected by that regulation.<sup>4</sup> While it's crucial to notify impacted parties about rule changes and implementation timelines, it's even more vital for the regulatory body to engage in public awareness efforts before adoption. PAR 1111 and 1121 will directly impact residential customers, who will bear the majority of compliance costs.<sup>5</sup> Therefore, it is essential that communities understand how the proposed amendments will influence their choices and future costs.

Previous updates to Rules 1111 and 1121 required that manufacturers develop equipment to meet stricter emissions standards by setting a feasible NOx reduction target. These updates did not require residents to invest in costly modifications to their homes when their space and water heating equipment required replacement. The present proposed amendments, while presented as an emissions reduction regulation, will require property owners – residential and commercial – and tenants to switch out their gas appliances for electric appliances. If approved, the financial burden of these changes will be placed on residents and consumers in the South Coast AQMD territory.

37-2

During the October 3, 2024 South Coast AQMD Public Workshop, an owner of a heating, ventilation, and air conditioning (HVAC) company in the San Bernadino mountains similarly expressed concerns that the public is unaware of the amendments' implications on their future budgets and the costs of major upgrades to their homes. His comments highlighted that staff did not take his region into account when evaluating feasibility and costs. In the analysis, AQMD staff averaged installation costs for climate zones 6, 9, and 10<sup>6</sup>. However, the customers he serves are in climate zone 16 and the majority of these homes do not have preexisting air conditioning (AC). If these amendments are passed and these residents are required to replace their heating system with a heat pump, they will face an additional expense compared to other customers in the District because they will need to install low ambient heat pump equipment which, on average, costs 30 - 50% more than standard heat pump equipment.<sup>7</sup> It appears that these additional incremental costs were not accounted for in staff's cost-effectiveness analysis. Needless to say, PARs 1111 and 1121 will affect millions of residents and businesses in the South Coast AQMD region and it is imperative that there be public outreach campaigns to garner participation from those this will

<sup>4</sup> "Governing Board Meeting Live Webcast," South Coast AQMD, June 7, 2024, <https://www.aqmd.gov/home/news-events/webcast/live-webcast?ms=UeHieemQEZc>.

<sup>5</sup> Rule 1146.2 regulates small commercial boilers and large water heaters as well as tankless water heaters and pool heaters.

<sup>6</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting #2," November 28, 2023, Slide 11, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121-par-1111-and-1121-wgm2-november-2023.pdf?sfvrsn=14>.

<sup>7</sup> Diane Oestreich, "Kory Griggs Addresses Air Quality Management Board," *Mountain News*, published on October 9, 2024, [https://www.mountain-news.com/news/kory-griggs-addresses-air-quality-management-board/article\\_73c973dc-867d-11ef-8fc9-4ff63eba5178.html](https://www.mountain-news.com/news/kory-griggs-addresses-air-quality-management-board/article_73c973dc-867d-11ef-8fc9-4ff63eba5178.html).

impact the most. SoCalGas requests that South Coast AQMD delay the adoption of these rules to allow adequate time for public outreach. Additionally, SoCalGas requests that South Coast AQMD make all comment letters submitted by stakeholders publicly available on the South Coast AQMD's website within 72 hours of comment submittal.

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**3. South Coast AQMD staff need to provide the datasets and assumptions used to perform cost-effectiveness calculations to allow stakeholders to better assess the impacts of the proposed amendments**

The data sources used, and assumptions made by South Coast AQMD staff in the cost-effectiveness analysis are unclear. Staff provided general citations to public data sources used to estimate costs during the rulemaking process, but citations should point stakeholders to the specific datasets that were relied upon in the cost-effectiveness evaluation.

For example, capital and operating costs were presented in Working Group Meeting #2 on slides 9 – 13. While staff generally references the source of data used to obtain cost information, the presentation lacks citations for specific reports and datasets used in the evaluation. The link provided on slide 13 of the Working Group Meeting #2 presentation, for example, takes users to the landing webpage for Energy Star Certified Heat Pump Water Heaters, which makes it difficult to understand exactly where staff obtained the annual energy use data for certified water heaters. Similarly, in Working Group Meeting #4, staff updated the cost-effectiveness for residential heat pump water heaters to \$246,000 per ton without providing any explanation. This value was again updated in the staff report to \$327,000 per ton, yet staff never provided an update on this in subsequent Working Group Meetings, and it is unclear how staff determined this value. These are just a few of the many instances where staff failed to provide transparency with the data used to conduct the cost-effectiveness analysis.

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Furthermore, in an effort to gain a better understanding of the costs associated with the transition to electric space and residential water heaters for our customers, SoCalGas asked an independent consulting firm, Ramboll, to use the information presented in the PAR 1111 and PAR 1121 Working Group Meetings and apply the South Coast AQMD's cost-effectiveness analysis technique to estimate costs. Using the methodology and data provided in the Working Group Meetings and the staff report, Ramboll's calculated values are significantly different than those presented by staff for all the replacement scenarios. Table 1 below illustrates this difference for single-family water heaters. It is important to reiterate that Ramboll's analysis is using the same assumptions and values presented by staff, and yet the results were unable to be duplicated and independently verified (see Appendix A for complete analysis).

**Table 1: Comparison of Cost-Effectiveness Values for Single-Family Water Heater**

Category	Cost-Effectiveness (\$/Ton)		
	AQMD Analysis	Ramboll Analysis	Percent Change
Single-Family Water Heater with Panel Upgrade	\$601,000	\$750,345	25%
Single-Family Water Heater	\$299,000	\$524,016	75%
Overall Weighted Average*	\$327,000	\$544,385	66%

\*Based on South Coast AQMD assumption that 9% of homes require a panel upgrade

The lack of clarity as to how staff arrived at these cost-effectiveness values is very concerning. It appears that staff did not update the average annual electricity usage values as indicated in the staff report to arrive at \$601,000<sup>8</sup> for the cost of a water heater replacement with a panel upgrade (Ramboll's analysis using South Coast AQMD's assumptions is 25% higher for water heaters with panel upgrades, 75% higher for water heaters without upgrades, and 66% higher for water heaters when using South Coast's weighted average calculation). Unfortunately, SoCalGas is unable to determine how staff arrived at \$299,000 for the cost of a water heater replacement without a panel upgrade. Without visibility into the datasets used, assumptions, and calculations made by staff, stakeholders are unable to get a full picture of how the potential costs associated with compliance with these rules were evaluated. Data transparency is crucial in any rulemaking process but is particularly important for PAR 1111 and PAR 1121, as the potential financial implications of this rulemaking will impact millions of residents and businesses in South Coast AQMD jurisdiction. SoCalGas requests that staff provide details on the assumptions, datasets, and calculations used within the cost-effectiveness analysis to derive the cost-effectiveness values presented. It is critical that staff provide this information to help the public better understand what costs customers may encounter in the not-too-distant future. SoCalGas recommends that staff make their calculation spreadsheet available to the public for review and comment as was done for Proposed Rule 2304.<sup>9</sup>

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Given the difficulty of unpacking the cost-effectiveness assumptions and lack of public awareness, stakeholders should be given more time to understand the specific assumptions to ensure the calculations are sound. As such, SoCalGas requests that the Board delay adoption of these proposed rules to allow for an additional public workshop to review the cost-effectiveness calculations that were used to determine the cost-effectiveness values.

<sup>8</sup> South Coast AQMD, "Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121," September 2024, Page 2-20, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>9</sup> South Coast AQMD, "Proposed Rule 2304," see Potential Port Emission Reduction Strategies excel files from Working Group Meetings, <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-2304>.

#### 4. Several assumptions within the cost-effectiveness analysis are inconsistent and should be reevaluated by staff

The cost-effectiveness analysis contains several assumptions that are inconsistent, which undermines the overall reliability of the findings. To enhance the accuracy and credibility of the evaluation, it is crucial to address these inconsistencies. SoCalGas's analysis of staff's calculations found several areas that should be addressed. Enhancements should focus on ensuring that assumptions are clearly defined, logically sound, and consistently applied throughout the process. We hope that these insights will help to produce more robust and dependable results, ultimately leading to better-informed decisions.

##### a. *Inconsistent data used to estimate equipment replacement costs*

The South Coast AQMD's analysis uses two different data sets to estimate replacement costs for gas and electrical equipment. Gas replacement estimates are based on the E3 Residential Building Electrification analysis<sup>10</sup>, while the electric equipment replacement costs are based on the Technology and Equipment for Clean Heating (TECH) data set<sup>11</sup>. Per the staff report, staff utilized the November 2023 public data set from TECH for Los Angeles, Orange, San Bernardino and Riverside counties and the entire data set from E3 for climate zones 6, 9 and 10<sup>12</sup>. According to staff, TECH Clean California Program data includes only 1,400 Multi-Family (MF) buildings and 18,000 Single-Family (SF) buildings that participated in the state incentive program<sup>13</sup>.

It is unclear why staff chose to use two separate sources of data, from where values were pulled, and why staff limited the scope of the data sets. It is important to have data integrity to avoid the appearance of bias in such an analysis. In order to eliminate these data inconsistencies, the same data source can be used for both gas and electric equipment costs. Since the E3 analysis includes estimates for both gas and electric equipment costs, utilizing this data as the basis for the cost-effectiveness calculations would provide consistency.

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<sup>10</sup> Amber Mahone et al., "Residential Building Electrification in California," Energy and Environmental Economics, Inc. ("E3"), April 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).

<sup>11</sup> Technology and Equipment for Clean Heating (TECH) Clean California. "Heat Pump Data," last modified on September 13, 2024, <https://techcleanca.com/heat-pump-data/download-data/>.

<sup>12</sup> South Coast AQMD, "Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121," September 2024, Page 2-15, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>13</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting#3," January 31, 2024, Slide 17, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>.

*b. Space heating cost-effectiveness analysis assumes simultaneous replacement of AC units, which are not regulated under Rule 1111*

South Coast AQMD's analysis should not rely upon a baseline of replacing AC units, an appliance which is not regulated by Rule 1111, in order to achieve cost-effectiveness. South Coast AQMD's analysis asserts that it is not cost-effective to replace a furnace with a heat pump in single-family homes without including the costs of replacing an AC system. In fact, in homes that do not currently have AC, the cost-effectiveness for a heat pump replacement is \$827,000 per ton without a panel upgrade or \$921,000 per ton with a panel upgrade. This exceeds the \$349,000 cost-effectiveness threshold.<sup>14</sup> Furnace replacement with a heat pump only appears cost-effective when costs associated with simultaneous replacement of the furnace and AC are included.

Furthermore, to account for the fact that homes without AC are above the cost-effectiveness threshold, the South Coast AQMD's analysis relies on weighted averages. It is unclear how staff is performing these weighted average calculations, but the analysis relies on two percentages; according to staff, 87% of homes in South Coast AQMD already have AC and only 4% of homes will require a panel upgrade.<sup>15</sup> To estimate the percentage of homes with AC and without AC, staff relied on the U.S. Census American Housing Survey (AHS). Staff did not provide details as to how this data was utilized, but it appears that the 87% estimate includes a significant number of room AC units.<sup>16</sup> While the cost-effective analysis should not include AC units at all, it would be more accurate to exclude room units. Per the AHS data, when excluding room air conditioners only 66% of homes in the South Coast have AC (for the Los Angeles-Orange-San Bernardino-Riverside area).<sup>17</sup> Similarly, per the staff report the TECH data was used to determine that only 4% of homes need electrical panel upgrades for space heating, however it is unclear how staff arrived at this percentage and why such a small dataset was utilized.<sup>18</sup>

Overall, this approach assumes a 1:2 appliance replacement and should not be used to conclude that this is cost-effective. Rather than just evaluating the cost to replace a furnace, staff is assuming that customers will replace the furnace and a functioning AC unit at the same time, regardless of cost. It is not realistic to assume that homeowners are going to replace AC units that are in good condition if they only need to buy a new furnace. It is also a divergence from common practice to

<sup>14</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting #6," August 15, 2024, Slide 27, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm6-august-2024.pdf?sfvrsn=18>.

<sup>15</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting #6," Slide 27.

<sup>16</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting #2," November 28, 2023, Slide 7, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm2-november-2023.pdf?sfvrsn=14>.

<sup>17</sup> U.S. Census Bureau, "American Housing Survey (AHS) Table Creator," American Housing Survey, AHS housing unit Characteristics spreadsheet, [https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s\\_areas=00000&es\\_year=2023&es\\_tablename=TABLE1&es\\_bygroup1=1&es\\_bygroup2=1&es\\_filtergroup1=1&es\\_filtergroup2=1](https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&es_year=2023&es_tablename=TABLE1&es_bygroup1=1&es_bygroup2=1&es_filtergroup1=1&es_filtergroup2=1).

<sup>18</sup> South Coast AQMD, "Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121," September 2024, Page 2-17, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.



put forth a regulation that is not cost-effective simply because staff believes that residents will benefit from having AC. As indicated in the staff report “although heat pump replacement for furnace without AC has a high cost-effectiveness, the replacement would have an additional benefit of space cooling, which is becoming more of a necessity due to climate change.”<sup>19</sup> Consumers should not be forced to bear the cost of an appliance that they may not need or be able to afford. As such, staff should update the cost-effective analysis excluding the costs of AC replacement; doing so will show that these proposed amendments to Rule 1111 are not cost-effective.

*c. South Coast AQMD should consider revising electrical panel upgrade costs to more accurately reflect upfront costs to customers*

During the rulemaking process, staff acknowledged that the transition to zero-emission units may require electrical panel upgrades, which will be an added cost to customers who are already paying to replace their appliance. Although staff noted that panel upgrades typically cost approximately \$3,000 based on available data,<sup>20</sup> the cost-effectiveness analysis ultimately relied upon a panel upgrade cost of \$750<sup>21</sup>. This value was derived by dividing the \$3,000 estimate in half to account for the longer useful life of the electrical panel (assumed to be 30 years) versus the useful life of the replacement unit (assumed to be 15 years for heat pump water heaters, but staff did not update this value to use the 25-year useful life of heat pump space heaters). Staff also assumed that costs would be shared between both space and water heating appliances even though one appliance replacement could trigger the need to upgrade the whole cost of the panel, resulting in a realized cost of \$3,000 to the customer to replace one appliance.

To accurately estimate upfront costs and effectively communicate expected costs to the public, the cost-effectiveness analysis should be updated to include the total cost of an electrical panel upgrade. The financial investment in panel upgrades is made at the time of purchase, not at the end of the equipment life; therefore, electric panel upgrade costs should not be prorated based on the useful life of the appliance. Furthermore, based on available data, the cost of a panel upgrade can be up to \$18,000<sup>22</sup> if customers are responsible for utility infrastructure costs such as pole changeouts or conduit replacements, or other costs such as sub-panels, new breakers, trenching, etc. Additionally, space and water heaters have varying life expectancies, thus it is inaccurate to apply a single 15-year panel lifetime cost to both types of equipment. If staff chooses to stick with this approach, however, then appliances with a 25-year expected life should be identified with the prorated panel upgrade cost.

<sup>19</sup> South Coast AQMD, “Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121,” Page 2-18.

<sup>20</sup>NV5, “Service Upgrades for Electrification Retrofits Study Final Report,” May 27, 2022, Page 32, <https://pda.energydataweb.com/api/view/2635/Service%20Upgrades%20for%20Electrification%20Retrofits%20Study%20FINAL.pdf>.

<sup>21</sup> South Coast AQMD, “Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121,” September 2024, Page 2-17, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>22</sup> NV5, “Service Upgrades for Electrification Retrofits Study Final Report,” Page 32.

Also, as previously noted, staff is performing weighted averages utilizing the assumptions that only “4 percent of homes for space heating and 9 percent of homes for water heating” will require a panel upgrade.<sup>23</sup> Since the transition to zero-emission technology will require California families to ultimately bear this added cost, it is important to ensure that such assumptions used to derive this value are appropriate and provide a realistic cost to customers. For these reasons, we request that South Coast AQMD delay the adoption of these rules to allow for a public workshop to review the assumptions that were used to arrive at these values. In lieu of a public workshop staff could make their calculation spreadsheet available to the public for review and comment.

- d. *Energy Prices used in South Coast AQMD’s analysis are point sources and representative of prices before the proposed rule implementation date*

In its cost-effectiveness analysis for residential and commercial appliances, South Coast AQMD used projected electricity and natural gas rates for 2024-2050 from the 2023 Integrated Energy Policy Report (IEPR) Energy Demand Forecast.<sup>24</sup> The 2023 IEPR electricity forecast only goes to 2040, but natural gas rates extend to 2050. Since the compliance dates do not begin until 2026 and these types of equipment have long lifetimes (ex. 15 and 25 years), energy prices are expected to change during that period.<sup>25</sup> Hence, SoCalGas proposes that the cost-effectiveness analysis should use an average of projected rates during the equipment’s expected 15- or 25-year lifetime to better reflect the actual cost of O&M for the equipment’s lifetime. We also believe that the approaches for electric and gas appliances should be consistent; however, we were unable to verify the source and timeframe of the electricity and gas rates used for the cost-effectiveness analysis. Therefore, SoCalGas requests clarification from staff how electricity rates are averaged through 2050 if the data was not available from the forecast. Without this clarification, it is not possible to validate the staff report’s analysis.

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- e. *Inflated coefficient of performance assumptions for heat pumps*

South Coast AQMD staff presented energy consumption data during Working Group Meeting #2 on slides 13 and 14. Table 2 below provides a summary of energy usage assumptions provided, gaps in energy usage assumptions, as well as calculated Coefficients of Performance (COP).

<sup>23</sup> South Coast AQMD, “Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121,” September 2024, Page 2-15, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>24</sup> California Energy Commission, “2023 Integrated Energy Policy Report Energy Demand Forecast California Energy Demand,” <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2023-integrated-energy-policy-report/2023-1>.

<sup>25</sup> U.S. Energy Information Administration, “Annual projections to 2050,” retrieved on October 8, 2024, <https://www.eia.gov/analysis/projection-data.php>.

**Table 2: Summary of Energy Usage Assumptions Used in South Coast AQMD Analysis**

	SF/MF Residential Space Heating		Commercial Space Heating		Residential Water Heating <sup>26</sup>		Coefficient of Performance <sup>27</sup>	
	HP	Gas	HP	Gas	HP	Gas	HPSH	HPWH
Energy Consumption (kWh) <sup>28</sup>	565	3,822	No data provided	No data provided	1,036	5,567	6.76	5.37

Based on the residential energy data South Coast AQMD staff provided, the residential heat pump space and water heating COPs are 6.76 and 5.37, respectively. These levels of efficiencies are not consistent with performance of existing heat pump technologies. Heat pump technologies typically range from 3.5-4.4.<sup>29</sup>

SoCalGas staff attempted to unpack the rationale for the high COP values used by South Coast AQMD staff for both space and water heat pump technologies. The staff report indicates that heat pump technology “can be over three times more efficient than conventional appliances” but does not provide any reference.<sup>30</sup> Additionally, the source of the energy consumption data for water heater usage was unclear as the only reference for data source is the ENERGY STAR product finder link.<sup>31</sup> South Coast AQMD staff should provide the specific appliances or data used to develop these calculations, so stakeholders can understand how the values are derived.

In the South Coast AQMD Space Heating consumption analysis, as presented on slide 12 of Working Group Meeting #2, the current values used in the analysis appear to come from the RASS 2019 executive summary, Tables ES-1 and ES-3.<sup>32</sup> The Southern California Edison (SCE) values in Table ES-1 represent the average consumption of all electric HVAC heat pump installations (single-family, multi-family, and mobile homes) in the SCE service territory, while the SoCalGas values in Table ES-3 represent the average consumption of all gas space heating installations (single-family, multi-family, and mobile homes) in SoCalGas territory. These values, however, do not account for the types of buildings (single-family vs. multi-family vs. mobile homes) in which

<sup>26</sup> Used lowest range energy usage assumption for both heat pumps and conventional gas water heaters.

<sup>27</sup> SoCalGas calculated the coefficient of performance based on energy consumption of gas appliances and heat pump appliances.

<sup>28</sup> Gas energy usage converted from therms to kWh using 29.3 kWh/therm conversion factor including electricity load for furnace fan.

<sup>29</sup> Nate Jutras, “What is Uniform Energy Factor and Why Does it Matter?,” ENERGY STAR, accessed October 16, 2024, <https://www.energystar.gov/products/ask-the-experts/what-uniform-energy-factor-and-why-does-it-matter>.

<sup>30</sup> South Coast AQMD, “Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121,” September 2024, Page 2-10, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>31</sup> ENERGY STAR Certified Heat Pump Water Heaters, <https://www.energystar.gov/productfinder/product/certified-heat-pump-water-heaters/results>.

<sup>32</sup> California Energy Commission, “2019 California Residential Appliance Saturation Study (RASS) Executive Summary,” July 2021, Pages 5 and 11, <https://www.energy.ca.gov/sites/default/files/2021-08/CEC-200-2021-005-ES.pdf>.

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the equipment is installed. For example, if there are more HVAC heat pumps in multi-family homes, which have a lower space heating load than single-family buildings, it could show that the heat pump space heater is saving more energy simply by heating smaller building sizes. By comparing the SCE numbers from Table ES-1 to the building specific values in Table ES-2, one can see that the average space heating load in SCE territory is most similar to multi-family energy consumption. Moreover, comparing SoCalGas numbers from Table ES-3 to the building specific values in Table ES-4 shows the space heating load in SoCalGas territory is most similar to mobile home energy consumption. This suggests that there are more heat pump installations in multi-family buildings, which skews the unit energy consumption values lower within SCE territory.

The more appropriate numbers for the analysis would be from Tables ES-2 and ES-4, which control for building size and therefore compare equal building loads. These tables show that multi-family space heating uses about 40% of the single-family energy usage and mobile home space heating uses about 75% of the single-family energy usage. The following table summarizes ES-2 and ES-4 for energy consumption data by technology and residential building types.

**Table 3: Summary of ES-2 and ES-4 Energy Consumption Data**

	Unit Energy Consumption (UEC)		
	Single-Family	Multi-Family	Mobile Home
Primary Conventional Space Heating (kWh)	1,509	622	1,193
Primary Heat Pump Space Heating (kWh)	1,221	493	980
Primary Heat (therm)	191	67	136
Furnace Fan (kWh)	159	55	116

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While these numbers are statewide and include climate zones outside of the South Coast AQMD territory, they provide for a more like-for-like comparison of building usage. The statewide values for different building types in Tables ES-2 and ES-4 would be more appropriate for this analysis.

Further, to get the most accurate consumption values and account for the regionality of energy consumption as well as the different building load usage, the RASS database could be utilized.<sup>33</sup> Although currently unavailable on the CEC website, the RASS 2019 database contains all of the raw data from the RASS study (see footnote 33) to enable a user to search and filter the data usage as needed. The RASS 2019 UEC tables, which calculate energy consumption values of weather sensitive end uses by climate zones and building types, can be utilized to get regional values for different space heating loads depending on the building type.<sup>34</sup> This would allow for a more

<sup>33</sup> California Energy Commission, California Residential Appliance Saturation Study Database, <https://rass.dnv.com/sign/in>.

<sup>34</sup> California Energy Commission, "2019 California Residential Appliance Saturation Study (RASS) Volume 2: Results," July 2021, <https://rass.dnv.com/envodig/api/site/media/CEC-200-2021-005-RSLTS.pdf>.

accurate like-for-like comparison of the different consumption values between building and space heating types within certain regions.

Due to the relatively smaller sample sizes of the UEC values by climate zone, there is more variation in the results of the data. To have statistically significant data, it is best to use the statewide figures from the RASS 2019 database below, similar to the executive summary tables ES-2 and ES-4:

**Table 4: RASS 2019 Statewide Energy Consumption Data**

Building Type	Primary Heat (therm)	Conv. Heat (kWh)	Heat Pump (kWh)
Single-Family	189	1,509	1,221
Townhome	83	951	593
2-4 Unit Apartment	69	592	559
5+ Unit Apartment	53	582	461
Mobile Home	144	1,193	980

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SoCalGas requested that Ramboll use the statewide data per residential building type in their cost-effectiveness analysis.

*f. Cost-effectiveness calculations should include costs of alternative compliance pathways*

During the October 3, 2024 South Coast AQMD Public Workshop, several stakeholders raised concerns about the alternative compliance pathways laid out within both rules. Stakeholders voiced concern regarding rental appliance feasibility, noting that this would be incredibly complicated and costly to owners. One commenter acknowledged that for his manufacturing company, ultra-low NOx products are only shipped to and sold in areas in California that have low NOx requirements. Another manufacturer commented that the District should not rely on the market to create a rental program and suggested that the District fund a program similar to what was done to support the TECH program.<sup>35</sup> Without such an established program, inventory in the next few years will decline as manufacturers stop producing natural gas units for sale in California. The lack of availability of rental units will impose additional costs on households and could potentially offset emissions reductions if consumers need to utilize higher emitting units because manufacturers stop developing units that meet California's strict emissions standards.

Furthermore, the cost-effectiveness analysis does not include consideration of the additional costs incurred by customers under the alternative compliance options. Staff noted that the alternative compliance options were included as part of the PAR 1111 amendments to address the high upfront cost associated with furnace replacement, since furnace replacement without simultaneous

<sup>35</sup> South Coast AQMD October 3, 2024 Public Workshop, stakeholder comments; recording available by request to AQMD staff.

replacement of an AC systems is not cost-effective<sup>36</sup>. Given 34 percent of homes in the South Coast AQMD region do not have AC, the additional costs of the alternative compliance option will be a reality for many households.<sup>37</sup> To account for these costs, the cost-effectiveness analysis should assume that these homeowners will have to pay double the installation, labor, and permitting costs, in addition to rental costs, since rented natural gas-fired furnaces and water heaters will need to be installed and subsequently uninstalled once a heat pump replacement unit has been procured and any necessary upgrades are completed for the heat pump. It is in the public interest to be made aware of these potential additional upfront costs, as it will impose additional financial burden on anyone who will need to utilize these alternative compliance options.

*g. Ramboll's cost-effectiveness analysis*

Given these findings, SoCalGas asked Ramboll to apply the South Coast AQMD's cost-effectiveness analysis technique as presented by staff for the proposed zero emission standards for PAR 1111 and 1121 (Appendix A). Ramboll calculated the cost-effectiveness in dollars per ton of NO<sub>x</sub> reduced for the replacement of residential natural gas appliances with electric heat pump alternatives using the updated data and assumptions as discussed in the comments above. The results are summarized below in **Table 4**. The analysis indicates that the replacement of a single-family home natural gas water heater, single-family home natural gas furnace (only), and multi-family home natural gas furnace (only) with heat pump equipment are not cost-effective, i.e., cost-effectiveness is greater than the threshold of \$349,000. Details of these calculations are presented in Tables B-1, B-2, and B-3 in **Attachment B** for single-family home water heaters, single-family home HVACs, and multi-family home HVACs, respectively.

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<sup>36</sup> South Coast AQMD, "Preliminary Draft Staff Report for Proposed Amended Rule 1111 and 1121," September 2024, Page 2-19, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>.

<sup>37</sup> U.S. Census Bureau, "American Housing Survey (AHS) Table Creator," American Housing Survey, [https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s\\_areas=00000&s\\_year=2023&s\\_tablename=TABLE1&s\\_bygroup1=1&s\\_bygroup2=1&s\\_filtergroup1=1&s\\_filtergroup2=1](https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&s_year=2023&s_tablename=TABLE1&s_bygroup1=1&s_bygroup2=1&s_filtergroup1=1&s_filtergroup2=1).

<b>Table 4: Updated Cost-Effectiveness Comparisons</b>			
<b>Data Source</b>	<b>Cost-Effectiveness for Conversion of Residential Natural Gas Equipment to Electric Heat Pump Equipment</b>		
	<b>(2022\$/ton NO<sub>x</sub>)</b>		
	<b>Single-Family Home Water Heater</b>	<b>Single-Family Home HVAC</b>	<b>Multi-Family Home HVAC</b>
PAR 1111/1121 Preliminary Draft Staff Report <sup>1</sup>	601,000	921,000	(135,000)
Cost-effectiveness values calculated based on updated data presented in this comment letter <sup>2</sup>	<b>879,258</b>	<b>972,443</b>	<b>1,351,118</b>
Cost-effectiveness threshold (\$/ton of NO <sub>x</sub> )	349,000		
<u>Notes:</u>			
<sup>1</sup> South Coast AQMD. Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NO <sub>x</sub> Emissions from Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NO <sub>x</sub> emissions from Small Natural Gas-Fired Water Heaters. Available at: <a href="https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18">https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18</a> . Accessed: October 2024.			
<sup>2</sup> See Attachment B. Analysis includes panel upgrade costs of \$3,000			
<u>Abbreviations:</u>			
\$ - dollar, HVAC – heating ventilation and air conditions, NO <sub>x</sub> – oxides of nitrogen			

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Given this, SoCalGas requests that South Coast AQMD staff revisit and refine the assumptions made within the cost-effectiveness analysis. Delay of rule adoption would allow for further investigation and deep-dive discussions between staff and engaged stakeholders to ensure all aspects of this rulemaking have been analyzed and vetted.

**4. The Draft Subsequent Environmental Assessment does not sufficiently explain why energy impacts from PAR 1111 and 1121 are less than significant**

SoCalGas has had the opportunity to review South Coast AQMD’s September 2024 Draft Subsequent Environmental Assessment for PAR 1111 and PAR 1121 (State Clearinghouse No. 2022050287; South Coast AQMMD No. 20240924JA/05122022KN) (“Draft SEA”). SoCalGas offers several comments on the Draft SEA’s analysis concerning the proposed project, including comments concerning the Draft SEA’s air quality and energy impacts analyses, some of these analyses’ underlying data and assumptions, and the Draft SEA’s discussion of project alternatives. SoCalGas’s comments are detailed in Appendix B. However, SoCalGas would like to highlight the following comment:

The Draft SEA’s energy impacts analysis, in its concluding section, states that “[t]he cumulative energy impacts from increased electricity and natural gas demand remain significant and unavoidable.” (Draft SEA, p. 4-23.) It then continues: “However, the Final Program Environmental Impact Report (EIR) for the 2022 AQMP also concluded that the use of energy to comply with ambient air quality standards and climate change goals, while contributing to overall electricity and natural gas demand, [] does not result in the wasteful, unnecessary, or inefficient use of energy. Therefore, the cumulative energy impacts are less than significant.” (*Id.*)

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The Draft SEA leaves unclear how to reconcile these two propositions. The mere passing reference to the 2022 Final (FEIR does not explain how the significant and unavoidable energy demand impacts discussed at length in the preceding pages of the Draft SEA are negated or made less significant by the absence of waste or inefficiency in how this energy is used. In the end, the Draft SEA goes from finding significant and unavoidable impacts to less than significant impacts in the space of just a few sentences, without sufficient explanation.

**5. Staff should clarify why they plan to perform a technology check-in after rule implementation**

During the October 3, 2024 Public Workshop, South Coast AQMD staff stated that they plan to conduct a technology check-in of the rule amendments by June 2027, ahead of implementation of the rules to consider any issues with the rules as proposed. However, PAR 1121’s implementation date is January 1, 2027, for existing buildings. During the comment period, SoCalGas requested clarification as to why the feasibility study would occur after the first implementation date, but South Coast AQMD did not respond to the question. SoCalGas would appreciate if staff could address this inconsistency as it does not benefit customers to have their concerns addressed *after* implementation.

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**6. The financial impact of the proposed amendments has not been adequately evaluated and will be burdensome to the everyday customer**

California is currently one of the most expensive places to live in the country<sup>38</sup> and has experienced one of the highest inflation rates recently.<sup>39</sup> According to the Public Policy Institute of California, nearly a third of Californians are living in or near poverty.<sup>40</sup> Needless to say, affordability is first and foremost on many policymakers' and stakeholders' minds when it comes to living in California.<sup>41</sup>

In the long run, SoCalGas believes that the clean energy transition is a great opportunity to raise the living standards for all Californians in an affordable and equitable fashion. To do so, we believe that we need to understand the immediate and direct impact to consumers in advance of any new policy being enacted. Oftentimes, communities and households who are least able to afford certain costs are most burdened with them and receive little recourse from policies and incentives. According to the LA100 Equity Strategies Report, "low-income families, renters, and people of color—face higher energy and transportation burdens, unsafe temperatures, higher impact from extreme heat events, and other negative impacts of historical legacies that are still present in current policies and practices." Specifically, the report found that "between 1999 and 2022, Los Angeles Department of Water and Power invested \$340 million in residential solar installation, \$14 million in residential energy efficiency, and \$5 million in residential electric vehicle incentive programs, but disadvantaged communities only received 38%, 46%, and 23% of those allocations, respectively."<sup>42</sup>

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While we understand that there will be rebates and incentives to help with some costs of compliance, it is concerning that costs can vary significantly. Table 5 below highlights actual costs that consumers will face to comply with PAR 1111 and cost for PAR 1121.<sup>43</sup> Similarly, TECH data, which staff utilized for single-family homes, shows that costs to replace a furnace with a heat pump in communities identified as disadvantaged can range from \$3,800 to \$56,000.<sup>44</sup> Given that there may be additional upfront costs when replacing with electric instead of gas appliances (e.g., \$5,200 vs. \$3,000 for water heaters, \$18,550 vs. \$10,000 for space heating, based on South

<sup>38</sup> Missouri Economic Research and Information Center, "Cost of Living Data Series", retrieved on Oct. 8, 2024, <https://meric.mo.gov/data/cost-living-data-series>.

<sup>39</sup> Paul Davidson, "The 5 states with the highest inflation and the 5 with the lowest," *USA Today*, April 9, 2024, <https://www.usatoday.com/story/money/2024/04/09/states-highest-lowest-inflation/73184932007/>.

<sup>40</sup> Public Policy Institute of California, "Poverty in California (October 2023 Factsheet)," last modified in 2023, <https://www.ppic.org/publication/poverty-in-california/>.

<sup>41</sup> California Public Utilities Commission (CPUC), "Affordability Rulemaking," last modified in 2023, <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/affordability>.

<sup>42</sup> National Renewable Energy Laboratory, "LA100: The Los Angeles 100% Renewable Energy Study and Equity Strategies," <https://maps.nrel.gov/la100/equity-strategies/recognizing-inequities#key-findings>.

<sup>43</sup> Costs for PAR 1111 provided by regional HVAC contractor; costs for PAR 1121 from LA BizFed analysis available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/los-angeles-county-business-federation.pdf?sfvrsn=6>.

<sup>44</sup> *September 2024 TECH Working Dataset\_Multifamily & TECH Working Dataset\_Single-Family Spreadsheets*.

Coast AQMD estimates and both excluding the cost of panel upgrades and other potential costs<sup>45</sup>), we urge South Coast AQMD to be judicious in its cost-effectiveness analysis, to be up-front and clear about how much this will cost the individual consumer, and to provide additional clarification in a cost-effectiveness workshop to help the public understand the assumptions used and the potential impact of these rules on our communities -- households and businesses. Additionally, SoCalGas looks forward to reviewing the Socioeconomic Impact Assessment once it is released later this year.

**Table 5: Appliance Replacement Costs**

Natural Gas Space Heater	Replacement Cost
Floor Heater	\$4,910
Wall Heater	\$3,200
Central Furnace	\$6,750

Heat Pump Space Heater	Replacement Cost
Floor/Wall Heater Replacement with Panel Upgrade	\$32,099
Floor/Wall Heater Replacement without Panel Upgrade	\$27,099
Central Heating Without AC	\$23,750

Water Heaters	Replacement Cost
Natural Gas Water Heater	\$1,700
120V Heat Pump Water Heater	\$4,000 - \$15,000
240V Heat Pump Water Heater	\$30,000 - \$80,000

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### Conclusion

SoCalGas has been an active participant in the South Coast AQMD rulemaking on PAR 1111 and 1121 and appreciates staff's efforts in updating this regulation; however, SoCalGas and other stakeholders continue to have serious concerns.<sup>46</sup> While SoCalGas supports emission reduction efforts, PAR 1111 and 1121 effectively ban gas-fired space and water heaters, disregarding the potential emissions reductions that can be achieved through technological advancements in ultra-low-NOx gas technologies, hydrogen-enriched natural gas systems, and hybrid solutions. These alternatives have the potential to achieve meaningful emissions reductions while maintaining reliable, affordable, and efficient options for residents and consumers. Allowing for ultra-low-NOx alternatives will be far more effective than a zero-NOx mandate that requires residents to spend thousands of dollars modifying their homes to install electric heat pumps.

<sup>45</sup> South Coast AQMD, "Proposed Amended Rules 1111 and 1121 Working Group Meeting #2," November 28, 2023, Slide 11, <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121-par-1111-and-1121-wgm2-november-2023.pdf?sfvrsn=14>.

<sup>46</sup> South Coast AQMD October 3, 2024 Public Workshop, stakeholder comments; recording available by request to AQMD staff.

We urge South Coast AQMD to delay adoption of these rules and take the time to wholistically and appropriately evaluate their impacts. Given the earliest compliance deadline for existing buildings is not until January 1, 2027, we feel there is an opportunity for the South Coast AQMD to conduct public outreach to inform property owners and tenants within its jurisdiction of this rulemaking. It is crucial to recognize that homeowners and renters, rather than industry, will be the ones forced to reach deep into their pockets to comply with these rules. Historically, the South Coast AQMD granted extensions to manufacturers under Rule 1121 to meet lower NOx emission limits, acknowledging the challenges they faced with compliance costs. Similarly, we believe it is reasonable to allow more time in this rulemaking process, considering the significant financial impact to homeowners and businesses and the challenges they will likely face with rule implementation. We urge the South Coast AQMD to schedule an additional public workshop to ensure all considerations have been included in the cost-effectiveness values presented to the public. This will also help homeowners and businesses within your jurisdiction to plan their future finances accordingly. SoCalGas, looks forward to collaborating on California's shared goal of advancing air quality objectives.

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Respectfully,

*/s/ Kevin Barker*

Kevin Barker  
Senior Manager  
Energy and Environmental Policy

# Appendix A



ENVIRONMENT  
& HEALTH

## MEMORANDUM

To: Kevin Barker  
Southern California Gas Company

From: Varalakshmi Jayaram & Tony Wang  
Ramboll Americas Engineering Solutions, Inc.

Subject: **COMMENTS ON SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S (SOUTH COAST AQMD'S) COST-EFFECTIVENESS CALCULATIONS FOR PROPOSED AMENDED RULES (PAR) 1111 AND 1121**

**1. It is unclear how South Coast AQMD arrived at the cost-effectiveness values that they presented in the Preliminary Draft Staff Report for PAR 1111/1121.**

Ramboll calculated the cost-effectiveness (CE) in dollars per ton of NO<sub>x</sub> (oxides of nitrogen) reduced for the replacement of residential natural gas (NG) appliances with electric heat pump alternatives using the data and assumptions presented by South Coast AQMD in the preliminary draft staff report<sup>1</sup> and Working Group Meetings (WGMs)<sup>2</sup> for PAR 1111/1121. Details of these calculation are presented in Tables A-1, A-2, and A-3 in **Attachment A** for single-family home water heaters, single-family home heating ventilation and air conditioning (HVAC) systems, and multi-family home HVAC systems respectively. As summarized in **Table 1** below, Ramboll's calculated CE values are substantially different from those presented by South Coast AQMD for most of the replacement scenarios.

We understand that staff has made multiple updates to their CE calculations after their initial presentation of assumptions in WGMs #2 and #3. Ramboll has accounted for these updates in our calculations presented in **Attachment A** by incorporating the information provided in the presentation materials for subsequent WGMs and the preliminary draft staff report. However, our results still do not align with those presented in the preliminary draft staff report. We therefore request staff to provide a summary of their current assumptions and methodology for the CE calculations that were used to arrive at these

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<sup>1</sup> South Coast AQMD. Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NO<sub>x</sub> emissions from Small Natural Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>2</sup> South Coast AQMD Presentation Materials for Working Group Meetings for PAR 1111/1121. Available at: <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121>. Accessed: October 2024.



cost-effectiveness values. We are happy to provide a Microsoft Excel version of our detailed calculations that are presented in **Attachment A**, as needed.

<b>Table 1. Comparison of Cost-Effectiveness</b>					
<b>Data Source</b>	<b>Cost-Effectiveness for Conversion of Residential Natural Gas Equipment to Electric Heat Pump Equipment (2022\$/ton NO<sub>x</sub>)</b>				
	<b>Single-Family Home Water Heater</b>	<b>Single-Family Home HVAC</b>		<b>Multi-Family Home HVAC</b>	
		<b>Furnace + AC</b>	<b>Furnace Only</b>	<b>Furnace + AC</b>	<b>Furnace Only</b>
PAR 1111/1121 Preliminary Draft Staff Report <sup>1</sup>	601,000	(183,000)	921,000	(2,633,000)	(135,000)
Cost-Effectiveness Values calculated based on South Coast AQMD Data <sup>2</sup>	750,345	(174,683)	1,483,017	(1,455,633)	(363,058)
<p><b>Notes:</b></p> <p><sup>1</sup> South Coast AQMD. Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NO<sub>x</sub> emissions from Small Natural Gas-Fired Water Heaters. Available at: <a href="https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18">https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18</a>. Accessed: October 2024.</p> <p><sup>2</sup> See Attachment A.</p> <p><b>Abbreviations:</b>                      \$ - dollar, AC – air conditioner, HVAC – heating ventilation and air conditions, NO<sub>x</sub> – oxides of nitrogen</p>					

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**2. South Coast AQMD’s assumptions for electric heat pump efficiencies are substantially higher than those reported for residential heat pumps that are available in the market.**

The energy consumption data for heat pumps and the natural gas appliances presented by South Coast AQMD staff in WGM#2<sup>3</sup> indicates that the heat pumps are approximately 5-7 times more efficient than the natural gas appliances they replace. Specifically, the electric heat pump space heater is assumed to be 6.8 times<sup>4</sup> more efficient than a conventional natural gas furnace and the

<sup>3</sup> South Coast AQMD Working Group Meetings for Proposed Amended Rules 1111 - Reduction of NO<sub>x</sub> Emissions from Natural-Gas-Fired Furnaces and 1121 - Reduction of NO<sub>x</sub> Emissions from Residential Type, Natural-Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121>. Accessed: October 2024.

<sup>4</sup> South Coast AQMD assumed an annual energy use of 3,822 kWh (127 therm NG for furnace + 101 kWh electricity for furnace fan) from a conventional gas furnace and 565 kWh for a HVAC heat pump to be 565 kWh, in WGM#2, Slide 12, and did not distinguish single family-and multi-family use. This indicates that the heat pump HVAC is 6.8 (3,822÷565) times more efficient than the conventional natural gas furnace.



electric heat pump water heater is assumed to be at least 5.3 times<sup>5</sup> more efficient than a conventional natural gas water heater.

While South Coast AQMD staff claimed the energy consumption data of the natural gas furnace and HVAC heat pumps were obtained from the 2019 California Residential Appliance Saturation Study (2019 RASS)<sup>6</sup>, staff used incorrect values from the RASS by mixing the single- and multi-family space heating energy consumptions. **Table 2** below summarizes the space heating Unit Energy Consumption (UEC) for natural gas furnaces (i.e., Primary Heat + Furnace Fan) and heat pump space heaters (i.e., Primary Heat Pump Space Heating) that are listed in the 2019 RASS. We recommend staff uses these UEC values to revise their CE analysis.

Equipment	Single-Family	Multi-Family	Unit
Primary Heat <sup>1</sup>	191	67	therms/year
Furnace Fan <sup>2</sup>	159	55	kWh/year
Primary Heat Pump Space Heating <sup>2</sup>	1,221	493	kWh/year

<sup>1</sup> Data obtained from Table 33 in Volume 2 of the 2019 California RASS. Available at: <https://www.energy.ca.gov/sites/default/files/2021-08/CEC-200-2021-005-RSLTS.pdf>. Accessed: October 2024. Multi-family UEC data are the average the UECs for townhomes, 2-4 unit apartments, and 5+ unit apartments.

<sup>2</sup> Data obtained from Table 11 in Volume 2 of the 2019 California RASS. Available at: <https://www.energy.ca.gov/sites/default/files/2021-08/CEC-200-2021-005-RSLTS.pdf>. Accessed: October 2024. Multi-family UEC data are the average the UECs for townhomes, 2-4 unit apartments, and 5+ unit apartments.

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Additionally, we would like to point out that the energy efficiency values South Coast AQMD staff used are also significantly higher than the efficiencies of residential heat pumps appliances that are available in the market. For instance, the Coefficient of Performance (COP) of certified Air-Source Heat Pumps (ASHP, or heat pump space heaters) in the ENERGY STAR program's database range from 1.8 to 2.9 (average 2.0).<sup>7</sup> This indicates that residential heat pump space heaters in the market are approximately 2 time more efficient than a conventional NG furnace.

The ENERGY STAR website<sup>8</sup> also indicates that certified heat pump water heaters are 3.5 to 4.4 times more efficient than a traditional NG water heater. Additionally, South Coast AQMD staff

<sup>5</sup> South Coast AQMD assumed an annual energy use of 190 therms NG (5,567 kWh) for a conventional gas water heater and 1,036 kWh for an equivalent heat pump water heater, in the Preliminary Draft Staff Report. This indicates that the heat pump water heater would be at least 5.3 times (5,567÷1,036) more efficient than the conventional gas water heater.

<sup>6</sup> South Coast AQMD assumed an annual energy use of 3,822 kWh (127 therm NG for furnace + 101 kWh electricity for furnace fan) from a conventional gas furnace and 565 kWh for a HVAC heat pump to be 565 kWh, in WGM#2, Slide 12.

<sup>7</sup> ENERGY STAR Certified Air-Source Heat Pumps. Available at: [https://data.energystar.gov/Active-Specifications/ENERGY-STAR-Certified-Air-Source-Heat-Pumps/w7cv-9xjt/about\\_data](https://data.energystar.gov/Active-Specifications/ENERGY-STAR-Certified-Air-Source-Heat-Pumps/w7cv-9xjt/about_data). Accessed: October 2024.

<sup>8</sup> ENERGY STAR- What is Uniform Energy Factor and Why Does it Matter?. Available at: <https://www.energystar.gov/products/ask-the-experts/what-uniform-energy-factor-and-why-does-it-matter>. Accessed: October 2024. Note this article reported that the UEF (i.e., Uniform Energy Factor) for a traditional gas water heater is 0.93, while ENERGY STAR certified heat pump water heaters typically have UEF ratings in the range of 3.3 to 4.1. Ramboll calculated the ratio and summarized the efficiency improvement to be 3.5-4.4 times.



have also stated that the heat pump water heater is 4.6 more efficient than a Type 1 NG water heater in the in WGM#3 for PAR 1146.2.<sup>9</sup> While the water heaters subject to Rule 1146.2 are larger than the residential water heaters that would be subject to PAR 1111/1121, the relative efficiency of heat pump water heater to a natural gas water heater should still be similar for both small and large water heaters.

Therefore, we request staff review and update the energy consumption assumptions for the natural gas and residential heat pump appliances that are used in their cost-effectiveness evaluations for PAR 1111/1121.

**3. South Coast AQMD should consider changing the panel upgrade cost for each equipment from \$750 to \$3,000 to reflect an accurate estimation of infrastructure costs.**

South Coast AQMD proposes reducing the panel upgrade cost from \$3,000 to \$1,500, assuming a longer useful panel life compared to the equipment's 15-year lifespan. Staff also assumed that this cost would be shared by both the space heaters and water heaters, resulting in an infrastructure cost of \$750 each, as noted in WGM #2, slide 16. However, it is not valid to implement a lower infrastructure cost from an assumed longer panel lifespan because the investment for the panel upgrade must be fully made at the time of purchase, and not at the end of the equipment life. Additionally, space heaters and water heaters have varying lifetimes; therefore, it is invalid to assume all homes will install electric water heaters and space heaters simultaneously to share the panel upgrade cost. Hence, we recommend that staff use a panel upgrade cost to be \$3,000 for each equipment replacement project.

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**4. South Coast AQMD used inconsistent data sources for the capital costs of natural gas appliances and heat pump appliances, leading to uncertainty in the CE analysis.**

South Coast AQMD staff utilized capital cost data for NG equipment from the 2019 E3 Residential Building Study (E3 Study)<sup>10</sup>, while the capital costs for heat pump equipment were obtained from the TECH Clean California program (TECH)<sup>11</sup>. We are concerned about the discrepancies between these two data sources and the resulting uncertainty in the CE analysis.

For instance, the E3 Study models costs for three types of homes: pre-1978 homes, which typically require electric panel upgrades, 1990s homes, and new construction that complies with California's 2019 Title 24 building code. In contrast, the TECH data only covers electrification projects for existing homes, excluding new construction entirely.

Additionally, the sample size in the TECH dataset varies greatly by home type. Specifically, it includes over 10,000 single-family project records in the South Coast (i.e., water heating and space heating projects in Los Angeles, Riverside, Orange, and San Bernardino counties) but only about 1,000 multi-family projects. This suggests that the TECH data is dominated by single-family projects and may not adequately represent multi-family projects.

<sup>9</sup> South Coast AQMD Working Group Meeting #3: Proposed Amended Rule 1146.2 – Controls of Oxides of Nitrogen from Large Water Heaters, Small Boilers, and Process Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1146-1146.1-and-1146.2/par-1146-2-wgm3-august-2023.pdf?sfvrsn=14>. Accessed: October 2024.

<sup>10</sup> Energy+Environmental Economics (E3). Residential Building Electrification in California. Available at: <https://www.ethree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/>. Accessed: October 2024.

<sup>11</sup> TECH Clean California. Heat Pump Data. Available at: <https://techcleanca.com/heat-pump-data/>. Accessed: October 2024.





Given these discrepancies, we recommend that South Coast AQMD staff revise their CE analysis by using E3 Study data for both natural gas and heat pump equipment costs to ensure consistency and accuracy.

**5. The CE analysis should use the average electricity and natural gas prices over the equipment lifetime instead of the current-year electricity and natural gas prices.**

The preliminary draft staff report<sup>12</sup> states that the CE analysis relied on the fuel price estimates which are based on a combination of the 2023 Integrated Energy Policy Report (2023 IEPR) and Energy Information Administration national level forecasts. While the staff report does not provide the values of the fuel price estimates that were actually used in the analysis, slide 25 in WGM #4 presentation indicated that these values are 0.0566 \$/kWh and 0.2639 \$/ kWh for natural gas and electricity, respectively. However, it is not clear how AQMD staff arrived at these values.

The proposed initial implementation year for PAR 1111/1121 starts from 2026, and the expected equipment lifespan for water heater and space heater are 15 years and 25 years, respectively. Additionally, we note that the 2023 IEPR provides electricity price forecasts only till 2040. Hence, we suggest that Staff use the average of the fuel price forecasts from 2026 to 2040 (a 15-year period) in their CE analysis. Ramboll has estimated these fuel price forecasts as described below:

- Ramboll used the price forecasts in the 2023 IEPR<sup>13</sup> to calculate the following 2026 to 2040 average electricity prices for Southern California Edison (SCE) and Los Angeles Department of Water and Power (LADWP): 0.2959 2022\$/kWh for SCE and 0.2919 2022\$/kWh for LADWP. We then estimated a population weighted average electricity price of 0.2950 2022\$/kWh (0.77 x SCE price + 0.23 x LADWP price) for the South Coast Air Basin following the methodology described in the preliminary draft staff report.
- Ramboll received a copy of the California Energy Commission's (CEC's) projected residential rates for Southern California Gas Company (SCG) from SCG. While this data included natural gas base rate projections till 2050, in order to maintain consistency with the approach for estimating the electricity prices, we propose using the 2026 to 2040 average natural gas price of 2.2372 2023\$/therm, i.e., 0.07314 2022\$/kWh<sup>14</sup>.

We recommend that staff review our estimates for fuel prices and use these in the CE analysis.

**6. Once all suggested revisions related to CE analysis are incorporated, the CE analysis of PAR 1111 and 1121 to mandate the switch toward electric water heaters and space heaters will no longer be cost-effective for most scenarios.**

Ramboll calculated the CE in dollars per ton of NO<sub>x</sub> reduced for the replacement of residential NG appliances with electric heat pump alternatives using the updated data and assumptions as discussed in the comments above. These are summarized below in **Table 3**. Our analysis indicates that the replacement of a single-family home natural gas water heater, single-family home natural gas furnace (only), and multi-family home natural gas furnace (only) with heat pump equipment are

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<sup>12</sup> South Coast AQMD. Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NO<sub>x</sub> emissions from Small Natural Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>13</sup> California Energy Demand Forecast, 2023-2040. Electricity Rate Forecast and Supporting Data. Available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253591>. Accessed: October 2024.

<sup>14</sup> 2023\$ were converted to 2022\$ using a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2023. CPI data available at: <https://www.dir.ca.gov/oprl/CPI/EntireCCPI.PDF>. Accessed: October 2024.



not cost-effective, i.e., CE is greater than the threshold of \$349,000. Details of these calculation are presented in Tables B-1, B-2, and B-3 in **Attachment B** for single-family home water heaters, single-family home HVACs, and multi-family home HVACs respectively.

<b>Table 3: Updated Cost-Effectiveness Comparisons</b>					
<b>Data Source</b>	<b>Cost-Effectiveness for Conversion of Residential Natural Gas Equipment to Electric Heat Pump Equipment (2022\$/ton NO<sub>x</sub>)</b>				
	<b>Single-Family Home Water Heater</b>	<b>Single-family Home HVAC</b>		<b>Multi-family Home HVAC</b>	
		<b>Furnace + AC</b>	<b>Furnace Only</b>	<b>Furnace + AC</b>	<b>Furnace Only</b>
PAR 1111/1121 Preliminary Draft Staff Report <sup>1</sup>	601,000	(183,000)	921,000	(2,633,000)	(135,000)
Cost-Effectiveness Values Calculated based on Updated Data presented in this Comment Letter <sup>2</sup>	879,258	(220,761)	972,443	91,831	1,351,118
Cost-effectiveness Threshold (\$/ton of NO <sub>x</sub> )	349,000				
<b>Notes:</b>					
<sup>1</sup> South Coast AQMD. Preliminary Draft Staff Report for: Proposed Amended Rule 1111 – Reduction of NO <sub>x</sub> Emissions from Natural Gas-Fired Furnaces and Proposed Amended Rule 1121 – Reduction of NO <sub>x</sub> emissions from Small Natural Gas-Fired Water Heaters. Available at: <a href="https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18">https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18</a> . Accessed: October 2024.					
<sup>2</sup> See Attachment B.					
<b>Abbreviations:</b>					
\$ - dollar, AC – air conditioner, HVAC – heating ventilation and air conditions, NO <sub>x</sub> – oxides of nitrogen					

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**ATTACHMENT A  
COST-EFFECTIVENESS CALCULATIONS  
BASED ON SOUTH COAST AQMD DATA**

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**Table A1. Cost-Effectiveness Calculations for the Replacement of a Residential Single-Family Home Natural Gas Water Heater based on Data presented by South Coast AQMD**

	Natural Gas Water Heater	Electric Heat Pump Water Heater	Units
<b>NOx Emissions</b>			
NOx Emission Factor	10.0	0.0	ng/J
Annual Energy Use by Technology Type <sup>1</sup>	5,567	1,036	kWh
Equipment Useful Life	15	15	years
Total Lifetime NOx Emissions <sup>2</sup>	3.3E-03	0.0E+00	tons
<b>Capital Costs</b>			
Capital Costs <sup>3</sup>	3,000	5,200	2022\$
Infrastructure	--	750	2022\$
Total Capital Costs	3,000	5,950	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>			
Electricity/Fuel Prices <sup>4</sup>	0.0566	0.2639	2022\$/kWh
Annual Electricity/Fuel Costs <sup>5</sup>	315	273	2022\$/yr
Total Lifetime O&M Costs <sup>6</sup>	3,503	3,040	2022\$
<b>Cost-Effectiveness</b>			
Lifetime NOx Emission Reductions <sup>7</sup>	--	3.3E-03	tons
Incremental Capital Costs <sup>8</sup>	--	2,950	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>8</sup>	--	(464)	2022\$
Incremental Lifetime Equipment Costs <sup>8</sup>	--	2,486	2022\$
<b>NOx Cost-Effectiveness<sup>9</sup></b>	--	<b>750,345</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>10</sup></b>		<b>601,000</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	2022\$/ton

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**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>11</sup> 11.118  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/J  
 1.0.E+09 ng/g

**Notes:**

<sup>1</sup> Annual Energy Use obtained from Page 2-20 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>2</sup> Total Lifetime NOx emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.

<sup>3</sup> Capital Costs obtained from Page 2-20 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>4</sup> Electricity/fuel prices (\$/kWh) data obtained from South Coast AQMD Working Group Meeting #4: Proposed Amended Rule 1111 - Reduction of NOx Emissions from Natural-Gas-Fired Furnaces and PAR 1121 - Reduction of NOx Emissions from Residential Type, Natural-Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm4-april-2024.pdf?sfvrsn=14>. Accessed: October 2024. It appears that updates were made to the methodology used to estimate these prices in the Preliminary Draft Staff Report, however, the exact values that were used for the calculations in the staff report are not presented in the report.

<sup>5</sup> Annual Electricity/Fuel Costs is estimated as the product of the Annual Energy Use and the Electricity/Fuel Prices.

<sup>6</sup> Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.

<sup>7</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx emissions for the natural gas unit and the electric unit.

<sup>8</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.

<sup>9</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions

<sup>10</sup> Data obtained from Page 2-20 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>11</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: October 2024.

**Table A2. Cost-Effectiveness Calculations for the Replacement of a Residential Single-Family Home Natural Gas Furnace based on Data Presented by South Coast AQMD**

Parameters for Cost-Effectiveness Analysis	Space Heating and Cooling		Space Heating Only		Units
	Natural Gas Furnace + Air Conditioner	Electric Heat Pump HVAC	Natural Gas Furnace	Electric Heat Pump HVAC	
<b>NOx Emissions</b>					
NOx Emission Factor	14.0	0.0	14.0	0.0	ng/l
Annual Energy Use by Technology Type <sup>1</sup>	3,822	565	3,822	565	kWh
Equipment Useful Life	25	25	25	25	years
Total Lifetime NOx Emissions <sup>2</sup>	5.3E-03	0.0E+00	5.3E-03	0.0E+00	tons
<b>Capital Costs</b>					
Capital Costs <sup>3</sup>	18,800	18,500	10,000	18,500	2022\$
Infrastructure	--	750	--	750	2022\$
Total Capital Costs	18,800	19,250	10,000	19,250	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>					
Electricity Prices <sup>4</sup>	0.2639	0.2639	0.2639	0.2639	2022\$/kWh
Natural Gas Prices <sup>4</sup>	0.0566	450	0.0566	--	2022\$/kWh
Annual Electricity/Fuel Costs <sup>5</sup>	237	149	237	149	2022\$/yr
Total Lifetime O&M Costs <sup>6</sup>	3,707	2,329	3,707	2,329	2022\$
<b>Cost-Effectiveness</b>					
Lifetime NOx Emission Reductions <sup>7</sup>	--	5.3E-03	--	5.3E-03	tons
Incremental Capital Costs <sup>8</sup>	--	450	--	9,250	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>8</sup>	--	(1,377)	--	(1,377)	2022\$
Incremental Lifetime Equipment Costs <sup>8</sup>	--	(927)	--	7,873	2022\$
<b>NOx Cost-Effectiveness<sup>9</sup></b>	--	<b>(174,683)</b>	--	<b>1,483,017</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>10</sup></b>	--	<b>(183,000)</b>	--	<b>921,000</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	349,000	349,000	2022\$/ton

**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>11</sup> 15.622  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/l  
 1.0.E+09 ng/g

**Notes:**

<sup>1</sup> Annual Energy Use obtained from South Coast AQMD Working Group Meetings #2: Proposed Amended Rule 1111 - Reduction of NOx Emissions from Natural-Gas-Fired Furnaces and PAR 1121 - Reduction of NOx Emissions from Residential Type, Natural-Gas-Fired Water Heaters, Slide 12. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm2-november-2023.pdf>. Accessed: October 2024.

<sup>2</sup> Total Lifetime NOx emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.

<sup>3</sup> Capital Costs obtained from Page 2-18 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>4</sup> Electricity/natural gas prices (\$/kWh) data obtained from South Coast AQMD Working Group Meeting #4: Proposed Amended Rule 1111 - Reduction of NOx Emissions from Natural-Gas-Fired Furnaces and PAR 1121 - Reduction of NOx Emissions from Residential Type, Natural-Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm4-april-2024.pdf?sfvrsn=14>. Accessed: October 2024. It appears that updates were made to the methodology used to estimate these prices in the Preliminary Draft Staff Report, however, the exact values that were used for the calculations in the staff report are not presented in the report.

<sup>5</sup> Annual Electricity/Fuel Costs is estimated at the product of the Annual Energy Use and the Electricity/Fuel Prices.

<sup>6</sup> Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.

<sup>7</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx emissions for the natural gas unit and the electric unit.

<sup>8</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.

<sup>9</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions

<sup>10</sup> Data obtained from Page 2-18 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>11</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: October 2024.

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**Table A3. Cost-Effectiveness Calculations for the Replacement of a Multi-Family Home Residential Natural Gas Furnace based on Data Presented by South Coast AQMD**

Parameters for Cost-Effectiveness Analysis	Space Heating and Cooling		Space Heating Only		Units
	Natural Gas Furnace + Air Conditioner	Electric Heat Pump HVAC	Natural Gas Furnace	Electric Heat Pump HVAC	
<b>NOx Emissions</b>					
NOx Emission Factor	14.0	0.0	14.0	0.0	ng/J
Annual Energy Use by Technology Type <sup>1</sup>	3,822	565	3,822	565	kWh
Equipment Useful Life	25	25	25	25	years
Total Lifetime NOx Emissions <sup>2</sup>	5.3E-03	0.0E+00	5.3E-03	0.0E+00	kg
<b>Capital Costs</b>					
Capital Costs <sup>3</sup>	12,400	5,300	6,600	5,300	2022\$
Infrastructure	--	750	--	750	2022\$
Total Capital Costs	12,400	6,050	6,600	6,050	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>					
Electricity Prices <sup>4</sup>	0.2639	0.2639	0.2639	0.2639	2022\$/kWh
Natural Gas Prices <sup>4</sup>	0.0566	--	0.0566	--	2022\$/kWh
Annual Electricity/Fuel Costs <sup>5</sup>	237	149	237	149	2022\$/yr
Total Lifetime O&M Costs <sup>6</sup>	3,707	2,329	3,707	2,329	2022\$
<b>Cost-Effectiveness</b>					
Lifetime NOx Emission Reductions <sup>7</sup>	--	5.3E-03	--	5.3E-03	tons
Incremental Capital Costs <sup>8</sup>	--	(6,350)	--	(550)	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>8</sup>	--	(1,377)	--	(1,377)	2022\$
Incremental Lifetime Equipment Costs <sup>8</sup>	--	(7,727)	--	(1,927)	2022\$
<b>NOx Cost-Effectiveness<sup>9</sup></b>	--	<b>(1,455,633)</b>	--	<b>(363,058)</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>10</sup></b>	--	<b>(2,633,000)</b>	--	<b>(135,000)</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	349,000	349,000	2022\$/ton

**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>11</sup> 15.622  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/J  
 1.0.E+09 ng/g

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**Notes:**

- <sup>1</sup> Annual Energy Use obtained from South Coast AQMD Working Group Meetings #2: Proposed Amended Rule 1111 - Reduction of NOx Emissions from Natural-Gas-Fired Furnaces and PAR 1121 - Reduction of NOx Emissions from Residential Type, Natural-Gas-Fired Water Heaters, Slide 12. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm2-november-2023.pdf>. Accessed: October 2024.
- <sup>2</sup> Total Lifetime NOx emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.
- <sup>3</sup> Capital Costs obtained from Page 2-19 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.
- <sup>4</sup> Electricity/natural gas prices (\$/kWh) data obtained from South Coast AQMD Working Group Meeting #4: Proposed Amended Rule 1111 - Reduction of NOx Emissions from Natural-Gas-Fired Furnaces and PAR 1121 - Reduction of NOx Emissions from Residential Type, Natural-Gas-Fired Water Heaters. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm4-april-2024.pdf?sfvrsn=14>. Accessed: October 2024. It appears that updates were made to the methodology used to estimate these prices in the Preliminary Draft Staff Report, however, the exact values that were used for the calculations in the staff report are not presented in the report.
- <sup>5</sup> Annual Electricity/Fuel Costs is estimated at the product of the Annual Energy Use and the Electricity/Fuel Prices.
- <sup>6</sup> Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.
- <sup>7</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx emissions for the natural gas unit and the electric unit.
- <sup>8</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.
- <sup>9</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions
- <sup>10</sup> Data obtained from Page 2-19 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.
- <sup>11</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: October 2024.



**ATTACHMENT B  
COST-EFFECTIVENESS CALCULATIONS  
BASED ON UPDATED DATA PRESENTED IN  
THIS COMMENT LETTER**

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**Table B1. Cost-Effectiveness Calculations for the Replacement of a Residential Single-Family Home Natural Gas Water Heater**

Parameters for Cost-Effectiveness Analysis	Natural Gas Water Heater	Electric Heat Pump Water Heater	Units
<b>NOx Emissions</b>			
NOx Emission Factor	10.0	0.0	ng/l
Annual Energy Use by Technology Type <sup>1</sup>	7,618	1,905	kWh
Equipment Useful Life	15	15	years
Total Lifetime NOx Emissions <sup>2</sup>	4.5E-03	0.0E+00	tons
<b>Capital Costs</b>			
Capital Costs <sup>3</sup>	3,676	4,611	2022\$
Infrastructure	--	3,000	2022\$
Total Capital Costs	3,676	7,611	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>			
Electricity/Fuel Prices <sup>4,5</sup>	0.0731	0.2950	2022\$/kWh
Annual Electricity/Fuel Costs <sup>6</sup>	557	562	2022\$/yr
Total Lifetime O&M Costs <sup>7</sup>	6,195	6,247	\$
<b>Cost-Effectiveness</b>			
Lifetime NOx Emission Reductions <sup>8</sup>	--	4.5E-03	tons
Incremental Capital Costs <sup>9</sup>	--	3,935	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>9</sup>	--	52	2022\$
Incremental Lifetime Equipment Costs <sup>9</sup>	--	3,987	2022\$
<b>NOx Cost-Effectiveness<sup>10</sup></b>	--	<b>879,258</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>11</sup></b>	--	<b>601,000</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	2022\$/ton

**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>12</sup> 11.118  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/l  
 1.0.E+09 ng/g

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**Notes:**

<sup>1</sup> Energy consumption of the natural gas water heater was obtained from Table 33 of the 2019 California Residential Appliance Saturation Study (RASS). Available at: <https://www.energy.ca.gov/publications/2019/2019-california-residential-appliance-saturation-study-rass>. Accessed: October 2024.

For the electric heat pump water heater energy consumption, Ramboll assumed it to be 4 times more efficient than the natural gas water heater based on this article: <https://www.energystar.gov/products/ask-the-experts/what-uniform-energy-factor-and-why-does-it-matter>. Accessed: October 2024.

<sup>2</sup> Total Lifetime NOx Emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.

<sup>3</sup> Capital Costs were derived based on Capital Cost Data of Zones 6, 9 and 10 from the E3 study, "Residential Building Electrification in California." Available at: <https://www.ethree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/>. Accessed: October 2024. The costs were also converted from 2018\$ to 2022\$ based on a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2018. CPI data available at: <https://www.dir.ca.gov/opr/CPI/EntireCCPI.PDF>. Accessed: October 2024.

<sup>4</sup> As noted in the preliminary draft staff report (Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121-par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024), the electricity price is calculated as a population weighted average of 2026 to 2040 projected price averages for SCE and LADWP, i.e., 0.77 x SCE price + 0.23 x LADWP price. The 2026 to 2040 projected average price averages for SCE and LADWP were obtained from the 2023 IEPR. Available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253591>. Accessed: October 2024.

<sup>5</sup> Natural gas price was estimated as the average of the 2026 to 2040 residential baseline rates from CEC. Note, these rates were provided in 2023\$ and converted to 2022\$ using a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2023. CPI data available at: <https://www.dir.ca.gov/opr/CPI/EntireCCPI.PDF>. Accessed: October 2024.

<sup>6</sup> Annual Electricity/Fuel Costs are estimated as the product of the Annual Energy Use and the Electricity/Fuel Prices.

<sup>7</sup> Total Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.

<sup>8</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx Emissions for the natural gas unit and the electric unit.

<sup>9</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.

<sup>10</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions.

<sup>11</sup> Data obtained from Page 2-20 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121-par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>12</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121-par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: October 2024.



**Table B2. Cost-Effectiveness Calculations for the Replacement of a Residential Single-Family Home Natural Gas Furnace**

Parameters for Cost-Effectiveness Analysis	Space Heating and Cooling		Space Heating Only		Units
	Natural Gas Furnace + Air Conditioner	Electric Heat Pump HVAC	Natural Gas Furnace	Electric Heat Pump HVAC	
<b>NOx Emissions</b>					
NOx Emission Factor	14.0	0.0	14.0	0.0	ng/l
Annual Energy Use by Technology Type <sup>5</sup>	5,755	1,221	5,755	1,221	kWh
Equipment Useful Life	25	25	25	25	years
Total Lifetime NOx Emissions <sup>6</sup>	8.0E-03	0.0E+00	8.0E-03	0.0E+00	tons
<b>Capital Costs</b>					
Capital Costs <sup>7</sup>	19,495	16,230	9,957	16,230	2022\$
Infrastructure	---	3,000	---	3,000	2022\$
Total Capital Costs	19,495	19,230	9,957	19,230	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>					
Electricity Prices <sup>8</sup>	0.2950	0.2950	0.2950	0.2950	2022\$/kWh
Natural Gas Prices <sup>8</sup>	0.0731	---	0.0731	---	2022\$/kWh
Annual Electricity/Fuel Costs <sup>9</sup>	456	360	456	360	2022\$/yr
Total Lifetime O&M Costs <sup>7</sup>	7,127	5,627	7,127	5,627	2022\$
<b>Cost-Effectiveness</b>					
Lifetime NOx Emission Reductions <sup>8</sup>	---	8.0E-03	---	8.0E-03	tons
Incremental Capital Costs <sup>8</sup>	---	(265)	---	9,273	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>8</sup>	---	(1,500)	---	(1,500)	2022\$
Incremental Lifetime Equipment Costs <sup>8</sup>	---	(1,765)	---	7,773	2022\$
<b>NOx Cost-Effectiveness<sup>10</sup></b>	---	<b>(220,761)</b>	---	<b>972,443</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>11</sup></b>	---	<b>(183,000)</b>	---	<b>921,000</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	349,000	349,000	2022\$/ton

**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>12</sup> 15.622  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/J  
 1.0.E+09 ng/g

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**Notes:**

<sup>1</sup> Energy consumptions of the natural gas and heat pump space heaters were obtained from the 2019 California Residential Appliance Saturation Study (RASS), Table 11 and Table 33. Natural gas furnace energy consumption includes 191 therms of natural gas per year and 159 kWh of electricity per year for the furnace fan. Available at: <https://www.energy.ca.gov/publications/2021/2019-california-residential-appliance-saturation-study-rass>. Accessed: October 2024.

<sup>2</sup> Total Lifetime NOx Emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.

<sup>3</sup> Capital Costs were derived based on Capital Cost Data of Zones 6, 9 and 10 from the E3 study, "Residential Building Electrification in California." Available at: <https://www.ethree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/>. Accessed: October 2024. The costs were also converted from 2018\$ to 2022\$ based on a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2018. CPI data available at: <https://www.dir.ca.gov/opri/CPI/EntireCPI.PDF>. Accessed: October 2024.

<sup>4</sup> As noted in the preliminary draft staff report (Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024), the electricity price is calculated as a population weighted average of 2026 to 2040 projected price averages for SCE and LADWP, i.e., 0.77 x SCE price + 0.23 x LADWP price. The 2026 to 2040 projected average price averages for SCE and LADWP were obtained from the 2023 IEPR. Available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253591>. Accessed: October 2024.

<sup>5</sup> Natural gas price was estimated as the average of the 2026 to 2040 residential baseline rates from CEC. Note, these rates were provided in 2023\$ and converted to 2022\$ using a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2023. CPI data available at: <https://www.dir.ca.gov/opri/CPI/EntireCPI.PDF>. Accessed: October 2024.

<sup>6</sup> Annual Electricity/Fuel Costs are estimated as the product of the Annual Energy Use and the Electricity/Fuel Prices.

<sup>7</sup> Total Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.

<sup>8</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx Emissions for the natural gas unit and the electric unit.

<sup>9</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.

<sup>10</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions.

<sup>11</sup> Data obtained from Page 2-18 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.

<sup>12</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: October 2024.

Table B3. Cost-Effectiveness Calculations for the Replacement of a Residential Multi-Family Home Natural Gas Furnace

Parameters for Cost-Effectiveness Analysis	Space Heating and Cooling		Space Heating Only		Units
	Natural Gas Furnace + Air Conditioner	Electric Heat Pump HVAC	Natural Gas Furnace	Electric Heat Pump HVAC	
<b>NOx Emissions</b>					
NOx Emission Factor	14.0	0.0	14.0	0.0	ng/l
Annual Energy Use by Technology Type <sup>1</sup>	2,039	537.67	2,039	537.67	kWh
Equipment Useful Life	25	25	25	25	years
Total Lifetime NOx Emissions <sup>2</sup>	2.8E-03	0.0E+00	2.8E-03	0.0E+00	kg
<b>Capital Costs</b>					
Capital Costs <sup>3</sup>	13,542	11,078	6,857	11,078	2022\$
Infrastructure	--	3,000	--	3,000	2022\$
Total Capital Costs	13,542	14,078	6,857	14,078	2022\$
<b>Operation and Maintenance (O&amp;M) Costs</b>					
Electricity Prices <sup>4</sup>	0.2950	0.2950	0.2950	0.2950	2022\$/kWh
Natural Gas Prices <sup>5</sup>	0.0731	--	0.0731	--	2022\$/kWh
Annual Electricity/Fuel Costs <sup>6</sup>	162	159	162	159	2022\$/yr
Total Lifetime O&M Costs <sup>7</sup>	2,526	2,478	2,526	2,478	2022\$
<b>Cost-Effectiveness</b>					
Lifetime NOx Emission Reductions <sup>8</sup>	--	5.3E-03	--	5.3E-03	tons
Incremental Capital Costs <sup>9</sup>	--	536	--	7,221	2022\$
Incremental Lifetime Operation and Maintenance Costs <sup>6</sup>	--	(49)	--	(49)	2022\$
Incremental Lifetime Equipment Costs <sup>8</sup>	--	487	--	7,172	2022\$
<b>NOx Cost-Effectiveness<sup>10</sup></b>	--	<b>91,831</b>	--	<b>1,351,118</b>	2022\$/ton
<b>South Coast AQMD Reported Cost-Effectiveness<sup>11</sup></b>	--	<b>(2,633,000)</b>	--	<b>(135,000)</b>	2022\$/ton
<b>South Coast AQMD NOx Cost-Effectiveness Threshold</b>	349,000	349,000	349,000	349,000	2022\$/ton

**Abbreviations:**

AQMD - Air Quality Management District  
 COP - coefficient of performance  
 hr - hour  
 kg - kilogram  
 kW - kilowatt  
 kWh - kilowatt hour  
 J - joule  
 MMBtu - million British thermal units  
 NOx - oxides of nitrogen  
 ng - nanogram  
 yr - year

**Constants:**

Present Value Factor<sup>12</sup> 15.622  
 Real Interest Rate 4%

**Conversion Factors:**

8,760 hr/yr  
 29.3 kWh/therm  
 2,000 lbs/ton  
 2.78E-07 kWh/l  
 1.0.E+09 ng/g

37-8

**Notes:**

- <sup>1</sup> Energy consumptions of the natural gas and heat pump space heaters were obtained from the 2019 California Residential Appliance Saturation Study (RASS), Table 11 and Table 33. Averages of townhomes, 2-4 unit apartment, and 5-unit apartment energy consumptions were used. Natural Gas furnace energy consumption includes 67.7 therms of natural gas per year and 56.7 kWh electricity per year for the furnace fan. Available at: <https://www.energy.ca.gov/publications/2021/2019-california-residential-appliance-saturation-study-rass>. Accessed: October 2024.
- <sup>2</sup> Total Lifetime NOx emissions are estimated as the Annual Energy Use multiplied by the Equipment Useful Life, and the NOx Emission Factor.
- <sup>3</sup> Capital Costs were derived based on Capital Cost Data of Zones 6, 9 and 10 from the E3 study, "Residential Building Electrification in California." Available at: <https://www.e3ree.com/e3-quantifies-the-consumer-and-emissions-impacts-of-electrifying-california-homes/>. Accessed: October 2024. The costs were also converted from 2018\$ to 2022\$ based on a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2018. CPI data available at: <https://www.dir.ca.gov/oprl/CPI/EntireCPI.PDF>. Accessed: October 2024.
- <sup>4</sup> As noted in the preliminary draft staff report (Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024), the electricity price is calculated as a population weighted average of 2026 to 2040 projected price averages for SCE and LADWP, i.e., 0.77 x SCE price + 0.23 x LADWP price. The 2026 to 2040 projected average price averages for SCE and LADWP were obtained from the 2023 IEP. Available at: <https://efiling.energy.ca.gov/GetDocument.aspx?tn=253591>. Accessed: October 2024.
- <sup>5</sup> Natural gas price was estimated as the average of the 2026 to 2040 residential baseline rates from CEC. Note, these rates were provided in 2023\$ and converted to 2022\$ using a CPI ratio of All Urban Customers in 2022 to All Urban Customers in 2023. CPI data available at: <https://www.dir.ca.gov/oprl/CPI/EntireCPI.PDF>. Accessed: October 2024.
- <sup>6</sup> Annual Electricity/Fuel Costs are estimated as the product of the Annual Energy Use and the Electricity/Fuel Prices.
- <sup>7</sup> Total Lifetime O&M Costs are estimated as the Annual Electricity/Fuel Costs multiplied by the Present Value Factor.
- <sup>8</sup> Lifetime NOx Emission Reductions are calculated as the difference in Lifetime NOx Emissions for the natural gas unit and the electric unit.
- <sup>9</sup> Incremental Costs are calculated as the difference in cost compared to the natural gas unit.
- <sup>10</sup> NOx Cost-Effectiveness is calculated as the Incremental Lifetime Equipment Costs divided by the Lifetime NOx Emission Reductions.
- <sup>11</sup> Data obtained from Page 2-19 of the Preliminary Draft Staff Report. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf?sfvrsn=18>. Accessed: October 2024.
- <sup>12</sup> The Present Value Factor is part of the Discounted Cash Flow Method that uses expected future cash flows in conjunction with a discount rate to estimate present fair value. Based on South Coast AQMD Working Group Meeting #3 presentation slides. Available at: <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-wgm3-january-2024.pdf?sfvrsn=12>. Accessed: January 2024.

# **Appendix B**

### Comments on Draft Subsequent Environmental Assessment

1. The Draft SEA's air quality impacts analysis compares potential increases in electricity use under South Coast AQMD's 2022 Air Quality Management Plan with those under the proposed project. In doing so, the Draft SEA assumes that space heaters will operate 4 hours per day on 100 days per year when the temperature is below 70°F. (Draft SEA, Table 4-3, fn. 3.) However, the Draft SEA does not identify the source of this data, making it difficult for a reader to verify the reasonableness of the assumption. Additionally, Table 4-3 cites to the website of Silicon Valley Power of the City of Santa Clara for its estimates of zero-emission water heaters' and low-NOx space heaters' electricity use. (Draft SEA, Table 4-3, fn. 1.) However, the Draft SEA leaves unclear why it relies on data from Northern California in its analysis of anticipated electricity use for such appliances within South Coast AQMD's Southern California jurisdictional area, and whether electricity use in the two areas might differ. South Coast AQMD could rely on the Residential Appliance Saturation Survey (RASS) for energy consumption by appliance in various utility territories.<sup>1</sup>

37-9

2. The Draft SEA's energy impacts analysis, in its concluding section, states that "[t]he cumulative energy impacts from increased electricity and natural gas demand remain significant and unavoidable." (Draft SEA, p. 4-23.) It then continues: "However, the Final Program EIR for the 2022 AQMP also concluded that the use of energy to comply with ambient air quality standards and climate change goals, while contributing to overall electricity and natural gas demand, [] does not result in the wasteful, unnecessary, or inefficient use of energy. Therefore, the cumulative energy impacts are less than significant." (*Id.*)

37-10

The Draft SEA leaves unclear how to reconcile these two propositions. The mere passing reference to the 2022 FEIR does not explain how the significant and unavoidable energy demand impacts discussed at length in the preceding pages of the Draft SEA are negated or made less significant by the absence of waste or inefficiency in how this energy is used. In the end, the Draft SEA goes from finding significant and unavoidable impacts to less than significant impacts in the space of just a few sentences, without sufficient explanation.

3. The Draft SEA's energy impacts analysis incorporates the same assumption that that space heaters will operate 4 hours per day on 100 days per year when the temperature is below 70°F as the Draft SEA's air quality impacts analysis. (Draft SEA, Table 4-6, fn. 3.) And this energy impacts analysis relies on the same source for comparing potential increases in electricity use under South Coast AQMD's 2022 Air Quality Management Plan and under the proposed project as does the Draft SEA's air quality impacts analysis (Silicon Valley Power). (Draft SEA, Table 4-6, fn. 1.) As discussed in Paragraph 1 above, this analysis leaves unclear the source of data for the former proposition and the applicability of electricity use in Northern California for the latter comparison; SoCalGas recommends use of the RASS energy consumption datasets instead.

37-11

4. The Draft SEA's discussion of those potential impacts found not to be significant appears to contain an inconsistency. The Draft SEA's analysis of some of these impact areas assumes that installation of new furnaces and water heaters will not require construction activities. (See, e.g.,

37-12

<sup>1</sup> California Energy Commission, California Residential Appliance Saturation Study, <https://rass.dnr.com/sign/in>

pp. 4-25 [Aesthetics, Agriculture and Forestry Resources], 4-26 [Geology and Soils].) Yet the Draft SEA's discussion of other impact areas appears to assume at least the possibility of new construction. (See Draft SEA, p. 4-26 [Cultural and Tribal Resources: "In addition, if any new residential buildings are to be constructed, the project would be subject to project-level review, ...."].) To the extent the Draft SEA relies on inconsistent assumptions about whether and how much new construction the proposed project might entail, it does not explain this inconsistency.

37-12

5. The Draft SEA's discussion of potential Population and Housing impacts (Draft SEA, p. 4-31) does not address whether owners of rental properties might pass the costs of new furnaces or space heaters on to tenants, thus potentially driving up rental rates. CEQA requires lead agencies, in analyzing Population and Housing impacts, to examine whether the proposed project will "displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere." (See CEQA Guidelines, Appendix G, § XIV(b).) The Draft SEA should address whether implementation of the project might result in renters within the South Coast Basin experiencing rent increases and moving to more affordable rental properties elsewhere as a result. Or, if South Coast AQMD views such a housing impact as insignificant, the Draft SEA should explain why.

37-13

6. The Draft SEA's project alternatives analysis includes a purportedly "Less Stringent Alternative ("Alternative C"). Under Alternative C, the suggested reduction in stringency comes from allowing the replacement of equipment in existing buildings with low NOx heaters in situations where alternative compliance options would be necessary under the proposed project. (Draft SEA, p. 5-2.) SoCalGas questions why South Coast AQMD's analysis of alternatives to the proposed project does not also incorporate into this "Less Stringent Proposed Project" delayed dates for implementation of the proposed project's required compliance dates. "Alternative B – More Stringent Proposed Project" sets compliance dates 12 months earlier than the proposed project. (See Draft SEA, p. 5-2.) Including a proposed project alternative that would instead defer these dates across the board would allow for a more like-to-like comparison with Alternative B.

37-14

Moreover, including an alternative with delayed compliance dates would be particularly helpful given some of the near-term environmental impacts that the Draft SEA identifies. For example, the Draft SEA's analysis of Alternative B explains that this alternative could cause more significant air quality impacts due to its compressed timeframe for implementation, based on the likelihood of more equipment replacement projects occurring on a peak day. (Draft SEA, p. 5-4.) Similarly, in analyzing Alternative B's potential energy impacts, the Draft SEA explains that "Alternative B would result in an earlier increase in electricity demand which is driven by the earlier deployment of zero-emission technologies." (Draft SEA, p. 5-6.) An alternative that incorporates deferred rather than accelerated compliance dates would allow a better comparison between its potential air quality and energy impacts and those of both the proposed project and alternatives like Alternative B.

SoCalGas acknowledges the proposition that a lead agency "need not consider every conceivable alternative to a project" (Cal. Code Regs., tit. 16, § 15126.6), as the Draft SEA states. But analyzing

a project alternative that includes delayed compliance dates would make the Draft SEA a more informative document for the public and for decision makers.

37-14

**Response to Comment Letter #37 and Its Appendices A&B***Response to Comment 37-1:*

Staff appreciates SoCalGas' comments on PAR 1111 and PAR 1121. PAR 1111 and PAR 1121 are not preempted by the EPCA.

Furthermore, the new concept for PAR 1111 and PAR 1121, released on February 7, 2025, and discussed at Working Group Meeting on February 13, 2025, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Please see Response to General Comment 9 for more details on EPCA preemption.

*Response to Comment 37-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff appreciates the comment on public outreach, cost to residents, and publishing comment letters on the website. Staff recognizes the importance of publishing comment letters so that all parties can view them in a timely manner and makes an effort to publish each letter upon receipt. To view comment letters, please find the PAR 1111 and PAR 1121 webpage linked here:

<https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121/comment-letters>

Staff understands the need for engagement with members of the public including residents and small businesses and has been reaching out to various stakeholders through a number of channels, including but not limited to: eNewsletter distribution list, which reaches individual residents and small businesses as well as various associations who distribute information to their members; physical newspapers and mailouts; articles and rule updates in the South Coast AQMD Advisor; reaching out to various associations for meetings to explain the rule process and proposed amended rules; reaching out to Community Choice Aggregators; outreach through participation in CARB listening sessions and BAAD Implementation Working Group meetings. Please refer to Response to General Comment 5 for further discussion on outreach. If the proposed amended rules are adopted by our Governing Board, staff will continue to conduct outreach using the options listed above and other channels including emails, social media, and services supported by the Legislative, Public Affairs, and Media (LPAM) department. However, staff recognizes SoCalGas' concern that the level of outreach may not cover the large population of 17 million people in the region, given that the proposed amended rules may impact up to 10 million units. Staff has been developing further public-friendly outreach materials including flyers and brochures which provide links to relevant webpages for more information and believes with the outreach channels available to the LPAM department, these materials will provide another method of communication with members of the public. The Go Zero incentive program outreach will also provide an opportunity to conduct further outreach on PAR 1111 and PAR 1121, with \$1 million funding dedicated to this

outreach effort. Staff also recognizes that the public outreach for building appliances rules, including PAR 1111 and PAR 1121, began prior to the December 2022 adoption of the 2022 AQMP when the control measures for commercial and residential furnaces and residential water heaters were presented and discussed. Extensive public outreach and feedback followed, with comments and letters from residents and businesses embedded in the public process. That plan was approved by the Governing Board, which provided staff the directive to amend and propose zero-emissions standards in PARs 1111 and 1121.

Staff worked closely with manufacturers, distributors, retailers, resellers, and installers as PAR 1111 and 1121 are enforced through the supply chain, which means they are subject to enforcement for any violation of the rules. However, the cost-effectiveness analysis discussed in Chapter 2 was based on the cost of unit installations that would be the responsibility of the property owner or resident to bear if they elect to install zero-NOx emission units. Further, the Socioeconomic Impact Assessment specifically considers how costs or savings will be passed on from the applicable supply chain to households. Please see Response to General Comment 6 for more on the assessment.

Staff conducted an analysis on cold climate applications and reached out to stakeholders in mountain communities for the rule development and implementation. Cold climate heat pump technology is currently utilized in cold climates successfully. More specific information regarding cold climate heat pump installations has been included in Chapter 2 of this report and Response to General Comment 8. Through previous rulemakings, staff gathered a list of installers for mountain communities. Those installers have been notified for all public meetings or documents released for this rulemaking. Further, staff reached out to certain individual high-altitude installers to ensure their participation. Finally, staff has and will continue to conduct site visits to mountain communities and work with high-altitude installers for implementation.

*Response to Comment 37-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff appreciates the review of the cost-effectiveness analysis for installations of zero-NOx emission units. The data sources used in the staff analysis was discussed in working group meetings and explained in Chapter 2 of this report. The details of the cost-effectiveness assessment was discussed during working group meetings two, three, four, and six held between November 28, 2023 and August 15, 2024, prior to the submittal of this comment letter. At that time staff invited engagement and discussion on the assumptions used in the assessment and offered to have individual meetings with stakeholders to have more detailed conversations.

For any update to the cost-effectiveness, staff provided explanations in the working group meetings. For example, staff described the residential cost-effectiveness update by presentation slide #27 at the working group meeting held on April 4, 2024. The change of heat pump water heater cost-effectiveness to \$246,000 was due to the use of newest IEPR rates released on January 1, 2024, and the change from average costs to median costs from TECH data. Staff estimated panel upgrade cost as discussed in Chapter 2. This cost-effectiveness was further updated to \$299,000 due to the change of efficiency from 95 to



75 percent as a conservative approach. The cost-effectiveness of \$327,000 per ton is the weighted average based on 9 percent of homes requiring a panel upgrade, which was explained in the preliminary draft staff report released on September 19, 2024. More update to cost-effectiveness was most recently provided in the Public Consultation meeting on March 6, 2025.

Staff reviewed the attached Ramboll analysis and have identified areas where Ramboll's calculations differ from staff's calculations. Ramboll does not use the gas and electricity costs listed in the staff report, but instead attempted to base their rates on a slide in Working Group Meeting #4 that listed the difference in 2024 rates between the 2021 and 2023 IEPR. Staff will move the discussion of the IEPR rates from the discussion on grid reliability in Chapter 2 to the cost-effectiveness analysis in Chapter 2 to clarify the costs staff relied on for the cost-effectiveness assessment. Staff notes Ramboll appears to have later developed their own rates based on the IEPR which nearly match those developed by staff, but Ramboll did not use it in their initial cost-effectiveness calculations. The second difference is not considering input versus output efficiency, which affects the lifetime NOx emissions from the units. The fuel use will match the input of the furnace or water heater, but both Rule 1111 and Rule 1121 regulate the NOx emissions based on the *output*, not the input. Staff used an efficiency rating of 75 percent, which was used in previous rulemaking, to estimate the overall emissions from the unit (staff considered using an efficiency of 95 percent in line with modern condensing furnaces and water heaters, however this change would tend to make the cost per ton lower, so staff kept the 75 percent efficiency as a conservative assumption).

For data sources, staff preferred to use data from actual installations in the South Coast AQMD region wherever possible. This resulted in favoring the use of the TECH Clean California installation database, which based on statements made by the TECH team tends to overinflate the cost of heat pumps due to efficiency requirements of the program, and RASS, which gives higher fuel savings than expected given a simple efficiency comparison. This efficiency boost holds true even when considering single family homes in the different climate zones in the South Coast AQMD region, rather than focusing on the SCE/SoCalGas region. This increased energy savings is present in other field studies as well, such as the New Buildings Institute's 120V Heat Pump Water Heater field study, which reported heat pump water heater energy usage as 49 kWh per month, compared to 325 kWh for gas units, a 6.6-fold improvement. Staff believes this is due to factors that are not typically accounted for in a standard COP, such as the mild climate in Southern California.

SoCalGas requested the panel upgrade cost applied to the cost-effectiveness analysis be increased from \$750 to \$3,000 to reflect it being an upfront cost. However, the cost-effectiveness analysis is intended to account for upfront costs and costs incurred over the lifetime of the unit. In the South Coast AQMD, approximately 87 percent of residents already have and operate AC units. If a residence has the electrical capacity to operate an AC, it will not require a panel upgrade to operate a heat pump and therefore staff did not include panel upgrade costs for every household. Based on the TECH dataset, this was 4 percent of homes for space heating and 9 percent of homes for water heating. Additionally, because of the similar timelines of PAR 1111 and PAR 1121, it is unlikely that a house that requires a panel upgrade to replace one of the two appliances will subsequently need it for

the next one. In the recent update to cost-effectiveness, staff explained that the TECH data set for project costs have included electrical upgrade cost which are real-world costs reflected in the updated cost-effectiveness. Staff also believes that Ramboll's approach of assuming that a \$3,000 panel upgrade is necessary for every home for each appliance is flawed, as it will tend to vastly overinflate the cost per ton. This is clearly shown in the analysis for single family home water heating, where Ramboll's reported cost-effectiveness is \$879,258 per ton, but removing the \$3,000 panel upgrade cost would reduce this to approximately \$219,000 per ton. While SoCalGas does not approve of the use of the TECH Clean California database, they do not provide any data to support their analysis that 100 percent of homes in the South Coast AQMD would require two panel upgrades due to these proposed amendments.

*Response to Comment 37-4:*

This comment contains remarks regarding the Draft Subsequent Environmental Assessment (SEA) and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. This comment also refers to Appendix B of Comment Letter 37 which provides more detailed comments on the Draft SEA. Upon its release, please see Appendix D of the Final SEA which contains this comment letter relabeled as Comment Letter #2, and the Response to Comment 37-4 relabeled as Response to Comment 2-4.

*Response to Comment 37-5:*

During the Stationary Source Committee meeting on October 18, 2024, it was announced that the status update/technology check-in for PAR 1111 and PAR 1121 would occur in December 2026 instead of June 2027. Staff anticipates regular updates to the Stationary Source Committee prior to major milestones in the rules and will continue to monitor the market and technology development.

*Response to Comment 37-6:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Regarding consumers who install zero-emission units, staff acknowledges the impact of the increased upfront cost, although actual installation costs from the TECH database indicates the costs provided in Table 5 of the comment letter are the exception rather than the norm. Staff also recognizes that increased market adoption of these technologies and increased familiarity both from consumers and installers will drive the costs down over time.

State and local incentives could also offset a large portion of the upfront costs, including the Go Zero incentive program which will be applicable to PAR 1111 and PAR 1121 units. Go Zero will be funded by \$21 million for the pilot program, with 75 percent of funding for overburdened communities, and there is potential for a fivefold funding increase for future phases of the program. The new rule concept also includes a mitigation fee for NOx-emitting space and water heating appliances that will provide a revenue stream to fund Go Zero. Go Zero will provide rebates for single family, multifamily, and small businesses, along with installer training to support and expand the growing workforce, and application

assistance and outreach funding which will provide guidance on the rebate process for program applicants. The Go Zero outreach will also provide an opportunity to conduct further outreach on PAR 1111 and PAR 1121. Staff anticipates that Go Zero rebates may be layered with other available rebate and incentive programs, and the application assistance portion will provide further guidance to program applicants on the incentive stacking process.

The Socioeconomic Impact Assessment evaluates how costs or savings from transitioning to zero-emission technologies will affect residential households. This includes assessing incremental expenses related to purchasing zero-emission HVAC and water heating units, retrofitting buildings, upgrading electrical panels, and the energy costs associated with these changes. These costs are used to evaluate the potential socioeconomic impacts of both directly and indirectly impacted entities including households, multifamily property owners, and their tenants. The assessment specifically examines the impacts of PAR 1111 and PAR 1121 considering probable costs or savings, effects on small businesses, employment, and the overall regional economy.

*Response to Comment 37-7:*

Comment 37-7 seeks request to delay the adoption of PAR 1111 and PAR 1121. This request was granted by the South Coast AQMD Governing Board at the Public Hearing held on November 1, 2024. At the time, the Public Hearing was moved to February 7, 2025. Currently, the Public Hearing is scheduled on May 2, 2025 (subject to change).

*Response to Comment 37-8:*

Detailed analysis for the cost-effectiveness calculations can be found in Chapter 2 of the Draft Staff Report. Notably, staff does not use appliance efficiencies to calculate fuel switching costs, but rather fuel use data taken from the 2019 California Residential Appliance Saturation Study<sup>(26)</sup>. Project costs for both PAR 1111 and PAR 1121 are derived from the TECH Clean California Installation Data, where the cost of electrical service upgrades are included in the project costs.

Please refer to Response to Comment 37-3 that covers points made under this comment for cost-effectiveness calculation.

*Response to Comment 37-9:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon its release, please see Appendix D of the Final SEA which contains this comment letter relabeled as Comment Letter #2, and the Response to Comment 37-9 relabeled as Response to Comment 2-9.

*Response to Comment 37-10:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon the release of the Final SEA, see Appendix D, where this comment letter is relabeled as

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<sup>(26)</sup>2019 California Residential Appliance Saturation Study (RASS),  
<https://www.energy.ca.gov/publications/2021/2019-california-residential-appliance-saturation-study-rass>

Comment Letter #2, and the response to Comment 37-10 is relabeled as Response to Comment 2-10.

*Response to Comment 37-11:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon the release of the Final SEA, see Appendix D, where this comment letter is relabeled as Comment Letter #2, and the response to Comment 37-11 is relabeled as Response to Comment 2-11.

*Response to Comment 37-12:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon the release of the Final SEA, see Appendix D, where this comment letter is relabeled as Comment Letter #2, and the response to Comment 37-12 is relabeled as Response to Comment 2-10.

*Response to Comment 37-13:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon the release of the Final SEA, see Appendix D, where this comment letter is relabeled as Comment Letter #2, and the Response to Comment 37-13 is relabeled as Response to Comment 2-13.

*Response to Comment 37-14:*

This comment contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon the release of the Final SEA, see Appendix D, where this comment letter is relabeled as Comment Letter #2, and the Response to Comment 37-14 is relabeled as Response to Comment 2-14.

**COMMENT LETTER #38: NAI CAPITAL**

Comment Letter #38

**SCAQMD PAR 1111 and PAR 1121**

October 29, 2024

Mr. Peter Campbell  
Planning, Rule Development, and Implementation  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: pcampbell@aqmd.gov

**Re: Comments on PAR 1111 and PAR 1121**

Dear Mr. Campbell:

NAI Capital Commercial appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company manages and leases commercial real estate. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not take into account issues facing industrial and commercial real estate property owners and our tenants. For example, some areas do not have the proper electrical to put an ELECTRIC FURNACE OR ELECTRIC WATER HEATER.

We would respectfully request that the District defer consideration of the proposed rules until February 2025 or later, in order to provide a sufficient amount of time to engage the industrial and commercial real estate industry and issues specific to our industry and tenants.

Thank you for taking into consideration our concerns. Please contact me if you have any questions.

Sincerely,

Chris Jackson  
CEO  
NAI Capital Commercial

38-1

**Response to Comment Letter #38***Response to Comment 38-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept also revised the proposed applicability and will not expand to larger size spacing heating units. PAR 1111 and PAR 1121 will be applicable to small size units, typically installed for residential use; however, the rules are based on unit size so would not preclude a consumers' individual choices to install small residential-size units in commercial properties.

Please see Response to General Comment 3 for further discussion on the electric grid and Response to General Comment 5 for further discussion on outreach. PAR 1111 and PAR 1121 will be presented to the South Coast AQMD Governing Board in 2025.

## COMMENT LETTER #39: NEWCASTLE PARTNERS



Comment Letter #39

## SCAQMD PAR 1111 and PAR 1121

October 29, 2024

Mr. Peter Campbell  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [pcampbell@aqmd.gov](mailto:pcampbell@aqmd.gov)

Re: Comments on PAR 1111 and PAR 1121

Dear Mr. Campbell:

Newcastle Partners appreciates the opportunity to provide comments on the South Coast Air Quality Management District proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural Gas-Fired Water Heaters (PAR 1121).

Our company is a small, commercial developer based exclusively in southern California. We are committed to reducing our carbon footprint while meeting the needs of our tenants. Installation of energy efficient lighting controls, compliance with outdoor water conservation requirements, and other energy-reducing measures can be found throughout our properties.

We are concerned that the proposed rules do not take into account issues facing industrial and commercial real estate property owners and our tenants. For example, shifting from natural gas equipment to electrical equipment will place additional strain on our current electrical infrastructure. Many electrical utility providers may not be prepared to meet the increased demand created by these changes, which could result in delays for new electrical hook-ups. Such delays could have a substantial negative impact on the occupancy timelines for commercial and industrial properties.

We would respectfully request that the District defer consideration of the proposed rules until February 2025 or later, in order to provide a sufficient amount of time to engage the industrial and commercial real estate industry and issues specific to our industry and tenants.

Thank you for taking into consideration our concerns. Please contact Courtney Wing with any questions.

Sincerely,

A handwritten signature in cursive script that reads "Courtney Wing".

Courtney Wing  
 Development Manager  
 Newcastle Partners  
[courtnev@newcastlepartners.com](mailto:courtnev@newcastlepartners.com)

4740 Green River Road, Suite 110 • Corona, CA 92880  
 phone 951.582.9800 • fax 951.278.4740

39-1

**Response to Comment Letter #39:***Response to Comment 39-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept also revised the proposed applicability and will not expand to larger size spacing heating units. PAR 1111 and PAR 1121 will be applicable to small size units typical for installed for residential use; however, the rules do not preclude the consumers' individual choices to install small residential-sized units in industrial or commercial properties.

Please see Response to General Comment 3 for further discussion on the electric grid and Response to General Comment 5 for further discussion on outreach. PAR 1111 and PAR 1121 will be presented to the South Coast AQMD Governing Board in 2025.



**COMMENT LETTER #40: DAIKIN COMFORT TECHNOLOGIES**

**DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P.**

19001 Kernier Road  
Waller, TX 77484

Tel: 713-861-2500  
www.northamerica-daikin.com

SUBMITTED VIA EMAIL to [yzhu1@aqmd.gov](mailto:yzhu1@aqmd.gov)

October 31, 2024

Ms. Yanrong Zhu  
Program Supervisor  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Proposed Amended Rule 1111: Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces

Dear Ms. Zhu,

Daikin Comfort Technologies Manufacturing, L.P. (formerly Goodman Manufacturing Company, L.P.) ("Daikin") submits the following comments to the South Coast Air Quality Management District ("SCAQMD") in response to the proposed amendments to Rule 1111: Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Furnaces.

Daikin is a member of Daikin Group, the largest heating, ventilation, and air conditioning ("HVAC") manufacturer in the world. Daikin is headquartered in Waller, Texas, and employs thousands of workers across the United States. The company manufactures residential and light commercial heating and cooling equipment, and its products are sold and installed by contractors in every American state and territory, as well as in Canada.

Daikin acknowledges the need for SCAQMD to address air quality issues within the District, and the proposed amendments to Rule 1111 are one way to help the District attain the desired results. However, there are several potential flaws with the proposed amendments as were noted during the Public Meeting on October 3, 2024. These comments are to support the verbal comments made during that meeting.

Section (h)(3) notes specific wording that shall be used concerning the effective dates as the information is presented in quotation marks. Daikin does not make manufactured home furnaces and therefore the wording on this label is extraneous and provides no value to Daikin customers. Can the regulation wording be adjusted to delete the quotation marks and allow a manufacturer to create wording to meet the intent of the requirements that fits their products? Example, a Daikin label might state "If installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings and 2) After January 1, 2028, not compliant for use and installation in South Coast AQMD."

40-1



There is also another issue with this labeling requirement. Since these proposed amendments allow for an alternative compliance option for short-term rentals, this labeling requirement in Section (h)(3) is contradictory. Stating that the product is not compliant for use or installation in South Coast AQMD beyond a specific date, but then allowing it to be installed on a rental basis beyond this same specific date are conflicting statements. This needs to be addressed to avoid confusion.

40-2

Daikin has previously noted our concerns about the proposed amendments making the new compliance dates based on installation date. BAAQMD Reg 9 Rule 4, which has completed the implementation of similar 0.0 ng/J NO<sub>x</sub> regulations currently uses “manufactured date” for compliance. Daikin urges SCAQMD to also adopt “manufactured date” for compliance. Since ULN products are only sold in three AQMDs in CA, there is a greater likelihood of stranded inventory if an installed date is used for compliance. These products cannot simply be sent to other markets for sale. Daikin recommends SCAQMD Staff to reconsider this portion of the regulation and rewrite it based on “manufactured date” compliance.

40-3

Daikin is also concerned about the equations in Section (e)(2). Both of these equations use the value of “E” in the calculation, but E is defined as AFUE, percent. This is fine for the current definitions of central gas-fired furnaces, but with these proposed amendments, SCAQMD is adding commercial furnaces (>225,000 Btuh), wall furnaces and floor furnaces. None of these other products are included in the scope of ASHRAE 103 and therefore cannot be tested to this standard to measure AFUE. The equations must be revisited by staff to correct this error.

40-4

Daikin noted a concern over the requirements for annual reporting requirements in Section (h)(5) during the public meeting. If a manufacturer does not sell any furnaces into the district, why would there be any reporting requirements? This section does not provide any exceptions to the reporting requirements for no sales.

40-5

Daikin appreciates the opportunity to provide these comments. If you have any questions regarding this submission, please do not hesitate to contact me.

Sincerely,

Robert S. Glass  
 Director Regulatory Affairs  
 Tel: 205/759-9638  
 Email: [Robert.Glass@daikincomfort.com](mailto:Robert.Glass@daikincomfort.com)

**Response to Comment Letter #40:***Response to Comment 40-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

Staff has revised the labeling provision to address commenter's concern on manufactured homes and provide flexibility for manufacturers to create labeling wording. For more discussion on labeling, please refer to Response to Appendix C Comment 27-4.

*Response to Comment 40-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

By this new rule concept, consumers may opt to purchase NOx emitting natural gas units if installing zero-NOx emission units is too costly or challenging for emergency replacements. Short-term replacement with rental equipment is no longer needed and thus removed from the proposed amended rules.

*Response to Comment 40-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on installation date, please refer to Response to Appendix C Comment PW-14.

*Response to Comment 40-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The scope of the rule applicability for PAR 1111 has been changed in the new rule concept.

For discussion on AFUE, please refer to Response to Appendix C Comment PW-14

*Response to Comment 40-5:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The revised PAR 1111 and PAR 1121 no longer include the report requirement mentioned in the comment.

**COMMENT LETTER #41: BIZFED**

October 31, 2024

By Email: [jafshar@aqmd.gov](mailto:jafshar@aqmd.gov)

Jivar Afshar  
Air Quality Specialist  
South Coast Air Quality Management District  
21865 Copley Dr, Diamond Bar, CA 91765

Re: Comments on Draft Supplemental Environmental Assessment for Proposed Amended Regulations 1111 and 1121

Dear Ms. Afshar:

We write on behalf of BizFed, the Los Angeles County Business Federation, an alliance of more than 200 business organizations representing more than 400,000 employers in Los Angeles County, including large and small businesses in a wide range of industries throughout the South Coast Air Basin (SCAB). We are writing regarding Proposed Amended Rule (PAR) 1111 – Reduction of NOx Emissions From Natural Gas-Fired Furnaces and PAR 1121 – Reduction of NOx Emissions From Natural Gas-Fired Water Heaters (collectively, Rules), specifically in regards to the Draft Supplemental Environmental Assessment (a Supplemental Environmental Impact Report (EIR)-equivalent document prepared under the California Environmental Quality Act (CEQA) by the South Coast Air Quality Management District (SCAQMD) pursuant to its Certified Regulatory Program) (Draft SEA). The Draft SEA was released for public comment on September 26, 2024.

As we are sure you are aware, we have previously submitted comments and provided extensive information addressing the impacts on the business community as a whole, as well as the specific concerns of our diverse membership, regarding the Rules. We continue to be concerned about these impacts and, as outlined more fully below, we do not believe that the Draft SEA satisfies the requirements of CEQA. In particular the Draft SEA fails to contain the required analysis of socioeconomic impacts proximately caused by, or resulting from, adoption of the Rules. The Draft SEA also does not include a legally sufficient alternatives analysis. In addition, the Draft SEA fails to mitigate significant energy impacts.

**Background and Prior CEQA Analysis**

As you know, and as described in the Draft SEA, PAR 1121 is intended to implement 2022 Air Quality Management Plan (2022 AQMP) Control Measure R-CMB-01. PAR 1111 is intended to implement 2022 AQMP Control Measures R-CMB-02 and C-CMB-02. (These three 2022 AQMP Control Measures are referred to collectively as the Control Measures in the remainder of this letter). The Control Measures were evaluated in an Environmental

41-1

Impact Report for the 2022 AQMP (2022 Final Program EIR).<sup>1</sup> The 2022 Final Program EIR describes the Control Measures as follows:

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**R-CMB-01: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Water Heating:** This control measure seeks to reduce NOx emissions from residential building water heating sources that are subject to Rule 1121 – Control of Oxides of Nitrogen (NOx) from Residential Type, Natural Gas-Fired Water Heaters. The measure proposes to 1) develop a rule to require zero emission water heating units for installations in both new and existing residences; and 2) allow low NOx technologies as a transitional alternative when installing a zero-emission unit is determined to be infeasible (e.g., colder climate zones, or architecture design obstacles). This control measure would include incentive funds to facilitate the transition to zero emission technologies and promote further emission reductions earlier than required. A primary zero emission residential water heating technology is currently available with the all-electric heat pump water heater.

**R-CMB-02: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Residential Space Heating:** This control measure seeks to reduce NOx emissions from residential space heating sources regulated by Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces (Rule 1111). This control measure proposes to 1) develop a rule to require zero emission space heating units for installations in both new and existing residences; and 2) allowing low NOx technologies as a transitional alternative when installing a zero-emission unit is determined to be infeasible. This control measure would also provide incentive funds to facilitate adoption of zero emission technologies that would promote further emission reductions earlier than required.

**C-CMB-02: Emission Reductions from Replacement with Zero Emission or Low NOx Appliances – Commercial Space Heating:** This control measure seeks to reduce NOx emissions from commercial building space heating sources. (i.e., forced air furnaces) with a rated heat input capacity between 175,000 and 2,000,000 British Thermal Units per hour (BTU/hr). Those sources are currently not subject to the South Coast AQMD NOx rules. The measure proposes to 1) develop rules to require zero emission commercial space heating units for installations in both new and existing buildings; and 2) allow low NOx technologies as a transitional alternative when installing a zero-emission unit is determined to be infeasible. This control measure would also provide incentive funds to facilitate adoption of zero emission technologies that would promote further emission reductions earlier than required. Heat pumps have been broadly applied in commercial applications as the primary zero emission technology.” 2022 Final Program EIR, pgs. 2-16 – 2-17.

Control Measures R-CMB-01 and R-CMB-02 were expected to affect 2 million residential water and space heaters, respectively, and were evaluated with an implementation date of

<sup>1</sup> Final Program Environmental Impact Report for Proposed 2022 Air Quality Management Plan, November 2022, State Clearinghouse No, 2022050287.

2029 in the 2022 Final Program EIR. See, 2022 Final Program EIR, Table 4.2-6, pg. 4.2-32 and Table 2.7-1, pg. 2-14. Control Measure C-CMB-02 was expected to affect 200,000 commercial space heaters and was evaluated with an implementation date of 2031. See, 2022 Final Program EIR, Table 4.2-6, pg. 4.2-32 and Table 2.7-1, pg. 2-14. The 2022 Final Program EIR concluded that implementation of the Control Measures would have potentially significant adverse air quality impacts from construction necessary to install lower and zero emission units, and from operational energy impacts related to electricity demand and increased use of natural gas to generate electricity caused by electrifying space and water heating appliances that are currently natural gas-fired. 2022 Final Program EIR pgs. 4.3-10 – 4.3-11.

41-1

As described in the Draft SEA, which tiers off of the 2022 Final Program EIR, PAR 1111 is expected to affect 5,350,000 space heaters. Draft SEA, pg. 1-16. PAR 1111 requires zero-NOx space heaters in new construction starting on January 1, 2026, and zero-NOx replacement space heaters at the end of appliance life starting on January 1, 2028 for units in existing buildings. Par 1121 is expected to affect 5,128,000 water heaters. Draft SEA, pg. 1-16. PAR 1121 requires zero-NOx water heaters in new construction starting on January 1, 2026, and zero-NOx replacement water heaters at the end of appliance life starting on January 1, 2028 for units in existing buildings. Thus, together, the Rules are expected to affect nearly 10.5 million natural gas-fired appliances in the SCAB.

The Draft SEA analysis concludes that the potentially significant adverse air quality impacts from construction and from energy impacts due to electricity and natural gas demand found in the 2022 Final Program EIR “will be substantially made more severe if [the Rules] are implemented.” Draft SEA, pg. 1-5. For the types of physical changes resulting from the implementing of the Rules, the Draft SEA attributes the increase in severity to the increased number of units affected. Draft SEA pg. 1-16. However, the Draft SEA fails to fully acknowledge that some of the increased severity of the environmental impacts is due to accelerating implementation of low- and zero-NOx appliance replacements compared to implementing the Control Measures as analyzed in the 2022 Final Program EIR. As set forth more fully below, this failure results in the Draft SEA failing to comport with the requirements of CEQA.

#### **The Draft SEA Fails To Analyze Impacts Reasonably Foreseeable from Implementing the Rules**

CEQA requires an analysis of socioeconomic impacts when proximately caused by, or resulting from, an agency action.<sup>2</sup> Urban decay, or blight, is required to be evaluated by SCAQMD and the absence of this analysis is a fatal flaw in the Draft SEA for the Rules. The proposed rules impose billions of dollars of unfunded mandates on owners of residential and commercial properties, as well as landlords – who are legally entitled to pass these costs on to renters. Owners of structures who are unable or unwilling to pay these costs will be operating illegal structures, which insurance policies and mortgage covenants prohibit –

41-2

<sup>2</sup> *Bakersfield Citizens for Local Control v City of Bakersfield* (2004) 124 Cal.App.4th 1184; *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173.

resulting in foreclosures, uninsured structures, and blight from vacant or underutilized properties. This blight outcome extends to both commercial and residential structures.

41-2

The commercial market is already staggering with vacancies from hybrid/remote work and job losses in critical industries such as entertainment; the retail market is similarly staggering with the ever-increasing volumes of e-commerce. Large commercial structures are already defaulting on loans, and other structures are selling at steep discounts with uncertain future utilization rates. Just a small fraction of the largest commercial property defaults is reported in this recently published article.<sup>3</sup>

Housing is even more challenging. The median price of a California home (not simply a home in a coastal county) now exceeds \$900,000 – 10 times more than median income; a healthy housing market includes ample supplies of homes priced at 3-5 times median income.<sup>4</sup> Average monthly rents in Los Angeles County are already \$2,452, and a chronic and growing shortage of less expensive housing, made worse by the continued growth of the homeless population, has caused about 59% of LA households to pay more than 30% of their income on rent<sup>5</sup> – a level considered unaffordable by federal government standards. There are about 650,000 apartments covered by rent control, and hundreds of thousands of newer apartments not covered by rent control. All of the older apartments, and most of the new apartments, will eventually need costly retrofits to comply with the ban on gas-fired appliances contained in the Rules. And the evidence is clear: landlords and lenders do not have the resources to make the extraordinarily costly modifications needed to comply with the Rules. In a 2024 article,<sup>6</sup> for example, it is reported that multi-family housing is already struggling to renew loans. Construction of new multi-family units have slowed significantly in markets like Los Angeles – data reflects that by the end of the first half of 2024, there was a decline of 34.6% in the completion of new apartments, and the sale volumes for multi-family apartment buildings worth more than \$5 million have dropped by 40%.<sup>7</sup>

The Rules also assume massive increases in electric supplies, and electric transmission, distribution, and substation equipment – none of which is funded, and all of which will further burden ratepayers who already pay among the highest electricity costs in the nation. There continues to be a shortfall of electric supplies, and a shortage of critical infrastructure needed to bring supplies to where people live and work. Imposing a premature transition to all-electric appliances will foreseeably result in brownouts and blackouts that have caused catastrophic public safety and health consequences, especially to sensitive needs

41-3

<sup>3</sup> <https://therealdeal.com/la/2024/01/02/brookfield-dtla-towers-lead-socals-top-defaults-in-2023/>

<sup>4</sup> <https://www.metroabundance.org/what-would-it-look-like-to-take-an-outcome-oriented-approach-to-housing-abundance/>

<sup>5</sup> <https://laist.com/news/housing-homelessness/los-angeles-housing-rent-control-increase-caps-rso-limits-economic-roundtable-report>

<sup>6</sup> <https://www.globest.com/2024/08/14/refinancing-hurdles-and-market-slowdown-in-la-multifamily-sector/?slreturn=20241030133840>

<sup>7</sup> <https://www2.naicapital.com/l-a-county-multifamily-market-shifts-as-vacancies-rise-and-rents-reach-new-highs-offering-opportunities-for-capital-ready-investors/#:~:text=Elevated%20interest%20rates%20have%20made.Recently%2C%20Blackstone%20Inc>

populations dependent on critical medical equipment.<sup>8</sup> The Draft SEA analysis ignores this immediate adverse health consequence while asserting via “models” purported health benefits of removing gas-fired appliances from people’s homes. These appliances have been safely operated for a century or more.

41-3

The unfunded mandates represented by the Rules impose billions of dollars of cost burdens on a region already suffering from unaffordable cost burdens. Imposing these unfunded mandates will make the housing crisis worse, drive even more commercial and retail businesses out of the region (and eliminate associated jobs), and result in vacant and underutilized buildings, reduce the tax revenues needed for critical public services like fire, public safety and medical care, and cause disproportionate harms to already distressed disadvantaged communities. It is fiscally, socially and environmentally reckless to impose these costs to obtain the miniscule fraction of NOx reductions attributable to these widespread retrofits mandated by the Rules.

41-4

Our region has many pressing needs, but we are at the end of an era where each special interest agency can, within its own silo, unilaterally impose billions of dollars of unfunded mandates without considering the adverse consequences to health, safety, and critical crises like our housing, homeless and poverty crises. The CEQA analysis performed by SCAQMD for the Rules is fundamentally flawed, and must be revised to acknowledge, analyze, and mitigate for these consequences – and importantly must include a thorough alternatives analysis that includes achieving the purported health benefits of removing safe gas appliances from structures through other, far less damaging and costly, methods.

#### **The Draft SEA Fails To Analyze Adequate Alternatives**

The Draft SEA is further inadequate because it fails to properly analyze a reasonable range of alternatives. Under CEQA, a proper analysis of alternatives is essential to comply with CEQA’s mandate that significant environmental impacts be avoided or substantially lessened where feasible.<sup>9</sup> The analysis of alternatives lies at the “core of an EIR,”<sup>10</sup> and an EIR must “ensure that all reasonable alternatives to proposed projects are thoroughly assessed by the responsible official.”<sup>11</sup>

41-5

The purpose of the requirement to contemplate alternatives is to identify ways to mitigate or avoid the significant effects of a project.<sup>12</sup> “[A]n agency may not approve a proposed project if feasible alternatives exist that would substantially lessen its significant

<sup>8</sup> <https://pinkerton.com/our-insights/blog/the-impact-of-power-outages#:~:text=Power%20outages%20and%20impact%20on,heat%20stroke%2C%20and%20food%20ins%20security>

<sup>9</sup> Pub. Resources Code, § 21002; CEQA Guidelines, §§ 15002(a)(3), 15021(a)(2), 15126(d); *Citizens for Quality Growth v. City of Mount Shasta* (1988) 198 Cal.App.3d 433, 443–45.

<sup>10</sup> *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564.

<sup>11</sup> *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 735; see also Pub. Resources Code, § 21002.1(a).

<sup>12</sup> Pub. Resources Code, § 21002.1.



environmental effects.”<sup>13</sup> The alternatives discussion must be “meaningful” and must “contain analysis sufficient to allow informed decision making.”<sup>14</sup> The alternatives analysis is critical to the integrity of an EIR.<sup>15</sup> An EIR must “ensure that all reasonable alternatives to proposed projects are thoroughly assessed by the responsible official.”<sup>16</sup> An alternatives analysis under CEQA must focus on potentially feasible alternatives to the project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly.<sup>17</sup>

As noted above, the 2022 Final Program EIR concluded that implementing the Control Measures would result in significant and unavoidable impacts in the environmental topic areas of air quality and energy. The Draft SEA concludes that implementing the Rules would make those impacts substantially more severe. As noted above, the Draft SEA attributes that increased severity to the greater number of units affected by the Rules.

In addition to the “No Project” alternative (“Alternative A”) required to be analyzed under CEQA, the Draft SEA evaluates three other alternatives – “Alternative B” is described as the “more stringent” alternative (advances the compliance date for new construction to January 1, 2025 for PAR 1111 and mandates changeout of existing appliances by the compliance date at which end of life replacements would occur under the Rules as drafted); “Alternative C” is described as the “less stringent” alternative (keeps same compliance dates and structure as the Rules as drafted, but allows replacement of existing units with low-NOx (rather than zero-NOx) units where the Rules as drafted allow temporary alternative compliance options (estimated to be 50% of replacements)); and “Alternative D” (keeps the compliance dates and rule structure the same as the Rules as drafted, but provides additional incentive funding which is estimated to result in about 1% (rather than .5%) of existing units being changed out before the end of useful life).

Notably, none of the alternatives examines the effect of a compliance date later than January 1, 2028 for space heaters and January 1, 2030 for water heaters. This is the case despite the fact that The 2022 Final Program EIR analyzed 2029 and 2031 compliance dates for these appliances respectively. This is a fundamental failure to present an adequate and legally

<sup>13</sup> *Save Panoche Valley v. San Benito County* (2013) 217 Cal.App.4th 503, 52 (citations omitted); see also Pub. Resources Code, §21081(a); CEQA Guidelines, §15091(a)(3); *Cal. Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1002.

<sup>14</sup> *Laurel Heights Improvement Association of San Francisco, Inc. v. Regents of the University of California* (1988) 47 Cal.3d 376 at 403-04.

<sup>15</sup> *In re Bay-Delta Programmatic Env'tl. Impact Report Coordinated Proceedings*, 43 Cal.4th 1143, 1162 (2008) (“The EIR is the heart of CEQA, and the mitigation and alternatives discussion forms the core of the EIR.”).

<sup>16</sup> *San Joaquin Raptor/Wildlife Rescue Center, supra*, 27 Cal.App.4th at 735; see also Pub. Resources Code, § 21002.1(a).

<sup>17</sup> CEQA Guidelines, § 15126.6(b), (f); see also Pub. Resources Code, § 21102.1(a) (“The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.”).

sufficient alternatives analysis that examines all reasonable alternatives to inform the public and the responsible officials of feasible alternatives as required by CEQA.<sup>18</sup>

41-5

Moreover, although the Draft SEA acknowledges that the impacts on natural gas demand that the Draft SEA finds severe and unavoidable will diminish as renewable energy use grows and reliance on natural gas for heating appliances decreases (Draft SEA, pg. 5-6), no alternative is analyzed that takes this into account. Indeed, California Senate Bill 100 (2018) established a goal for grid power of 60% renewable and zero-carbon resources by 2030. In light of this fact, a legally sufficient alternatives analysis would include at least one alternative that examines whether extending the compliance date until more renewables are available on the grid would ameliorate some or all of the severe and unavoidable impacts found. For example, an alternative that tied the compliance date to the accomplishment of a defined level of renewable power on the grid would inform decision makers and the public about the important trade-offs inherent in the decision making around the Rules as required by CEQA. Whether these or other reasonable and feasible alternatives would decrease the impacts of the Rules cannot be known because the Draft SEA fails in its fundamental purpose to present them for consideration. The Draft SEA for the Rules is fundamentally flawed and must be revised to properly analyze all reasonable and feasible alternatives as outlined above. The Revised SEA must then be recirculated for public comment before it and the Rules can be further considered by SCAQMD.

#### **The Draft SEA Fails to Mitigate Significant Energy Impacts**

41-6

The discussion of a proposed project's environmental impacts is an essential component of an EIR.<sup>19</sup> The fundamental purpose of CEQA is to "inform the public and its responsible officials of the environmental consequences of their decisions before they are made."<sup>20</sup> To do so, an EIR must contain facts and analysis, not just an agency's bare conclusions.<sup>21</sup>

CEQA also requires an EIR to describe and adopt all feasible mitigation measures to address a project's significant environmental impacts.<sup>22</sup> Mitigation measures must be "fully enforceable through permit conditions, agreements, or other legally binding instruments."<sup>23</sup> Generally, the "[f]ormulation of mitigation measures should not be deferred until some future time."<sup>24</sup> As an exception, "measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way."<sup>25</sup> Crucially, there is a "distinction between stating a generalized goal and

<sup>18</sup> That these later compliance dates are reasonable and feasible alternatives is further demonstrated by the fact that the Bay Area Air Quality Management District (Bay Area AQMD) adopted amendments in March of 2023 to its Regulation 9, Rule 6 which sets forth a zero-NOx compliance date of January 1, 2031 for typical residential water heaters, and its Regulation 9, Rule 4 which contains a zero-NOx compliance date of January 1, 2029 for furnaces.

<sup>19</sup> See CEQA Guidelines, § 15126.2(a) ("An EIR *shall* identify and focus on the significant effects of the proposed project on the environment.") (emphasis added).

<sup>20</sup> *Laurel Heights*, *supra*, 6 Cal.4th at 1123.

<sup>21</sup> *Citizens of Goleta Valley*, *supra*, 52 Cal.3d at 568.

<sup>22</sup> Pub. Resources Code, § 21002; CEQA Guidelines, § 15126.4(a)(1).

<sup>23</sup> CEQA Guidelines, § 15126.4(a)(1)(B), (a)(2).

<sup>24</sup> CEQA Guidelines, § 15126.4(a)(1)(B).

<sup>25</sup> *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 856.

adopting specific performance criteria,” and “[s]imply stating a generalized goal for mitigating an impact does not allow the measure to qualify for the exception to the general rule against the deferred formulation of mitigation measures.”<sup>26</sup> Further, even where the deferred formulation of mitigation might be allowable, there is a point beyond which delayed implementation is not allowed: “[o]nce the project reaches the point where activity will have a significant adverse effect on the environment, the mitigation measures must be in place.”<sup>27</sup> “Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified.”<sup>28</sup>

All of the mitigation for energy impacts identified in the Draft SEA are lifted from the 2022 Final Program EIR. The Draft SEA states as follows:

“The following mitigation measures have been identified for reducing potential electricity demand impacts:

- E-1 Project sponsors should pursue incentives to encourage the use of energy efficient equipment and vehicles and promote energy conservation during electricity generation.
- E-2 Utilities should increase capacity of existing transmission lines to meet forecast demand that supports sustainable growth where feasible and appropriate in coordination with local planning agencies.
- E-3 Project sponsors should submit projected electricity calculations to the local electricity provider for any project anticipated to require substantial electricity consumption. Any infrastructure improvements necessary should be completed according to the specifications of the electricity provider.
- E-4 Project sponsors should include energy analyses in environmental documentation with the goal of conserving energy through the wise and efficient use of energy.
- E-7 Project sponsors should evaluate the potential for reducing peak energy demand by encouraging the use of electrified stationary sources during off-peak hours.”

Draft SEA, pgs. 4-20 – 4-21.

None of these mitigation measures were adequate when they were included in the 2022 Final Program EIR and they remain inadequate in the context of the Draft SEA. Even a cursory examination of these “measures” reveals that they express aspirational goals at best. None of the measures are enforceable, as required by CEQA, through “permit conditions, agreements, or other binding instruments” by South Coast AQMD or anyone else. In addition, none of these measures specifies any sort of performance standard that could lead to formulation of appropriate mitigation in the future. Moreover, other than explaining that

<sup>26</sup> *Id.* at 856.

<sup>27</sup> *Id.* at 860, quoting *POET, LLC v. Cal. Air Resources Bd.* (2013) 218 Cal.App.4th 681, 738.

<sup>28</sup> CEQA Guidelines, § 15126.4(a)(1)(B).

some of the measures that were included in the 2022 Final Program EIR are inapplicable to mitigating energy impacts, the Draft SEA provides no explanation for the assertion that these specific measures will address the energy impacts that the Draft SEA describes as more severe than the impacts found in the 2022 Final Program EIR. See Draft SEA, pg. 4-20. In short, the mitigation measures identified in the Draft SEA that purport to reduce the potential electricity demand impacts that have been identified are wholly inadequate under CEQA. To address this inadequacy, the Draft SEA must be revised to identify and analyze appropriate mitigation measures for energy impact. The revised Draft SEA must then be recirculated for public comment before it and the Rules can be further considered by SCAQMD.

For the reasons set forth above, we urge SCAQMD to revise its analysis, prepare and circulate a revised Draft SEA, and, ultimately, to reject the Rules. We reserve the right to identify new issues, provide additional information, and propose additional mitigation measures during SCAQMD's ongoing decision-making process for the Rules.

Thank you for your thoughtful consideration of these critical issues.

Sincerely,



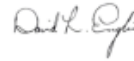
Fran Inman  
BizFed 2024 Chair  
Majestic Realty



David Fleming  
BizFed Founding Chair



Tracy Hernandez  
BizFed Founding CEO  
IMPOWER, Inc.



David Englin  
BizFed President

CC: Governing Board

### BizFed Association Members

- Action Apartment Association
- Advanced Medical Technology Association
- Alhambra Chamber
- American Beverage Association
- Antelope Valley Chamber formerly Lancaster Chamber of Commerce
- Apartment Association of Greater Los Angeles
- Apartment Association of Orange County
- Apartment Association, CA Southern Cities, Inc .
- Apartment Association of California
- Arcadia Association of Realtors
- AREAA North Los Angeles SFV SCV
- Armenian American Business Association
- Armenian Trade & Labor Association
- Arts District Los Angeles
- ASCM Inland Empire Chapter
- Associated Builders & Contractors SoCal (ABC SoCal)
- Associated General Contractors
- Association of Independent Commercial Producers
- AV Edge California
- Azusa Chamber
- Seil Chamber
- Beverly Hills Chamber
- BioCom
- Black Business Association
- Black Professional Network
- Boyle Heights Chamber of Commerce
- Bridge Compton Org
- Building Industry Association - LA/Ventura Counties
- Building Industry Association of Southern California
- Building Industry Association- Baldyview
- Building Owners & Managers Association of Greater Los Angeles
- Burbank Association of Realtors
- Burbank Chamber of Commerce
- Business and Industry Council for Emergency Planning and Preparedness
- Business Resource Group
- CalAsian Chamber
- CalChamber
- California African American Chamber of Commerce
- California Apartment Association- Los Angeles
- California Asphalt Pavement Association
- California Bankers Association
- California Black Chamber of Commerce
- California Business Properties
- California Business Roundtable
- California Cleaners Association
- California Contract Cities Association
- California Council for Environmental & Economic Balance (CCEEB)
- California Fuels & Convenience Alliance- Formerly
- California Independent Oil Marketers Association (CIOMA)
- California Gaming Association
- California Grocers Association
- California Hispanic Chamber
- California Hotel & Lodging Association
- California Independent Petroleum Association
- California Infrastructure Delivery Coalition
- California Life Sciences Association
- California Manufacturers & Technology Association
- California Metals Coalition
- California Natural Gas Producers Association
- California Restaurant Association
- California Retailers Association
- California Self Storage Association
- California Small Business Alliance
- California Travel Association (CalTravel)
- California Trucking Association
- Californians For Smarter Sustainability
- Carson Chamber of Commerce
- Carson Dominguez Employers Alliance
- Central City Association
- Century City Chamber of Commerce
- Chatsworth Porter Ranch Chamber of Commerce
- Citrus Valley Association of Realtors
- Civil Justice Association of California CJAC
- Claremont Chamber of Commerce

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Commerce Business Council formerly Commercial  
 Industrial Council/Chamber of Commerce  
 Compton Chamber of Commerce  
 Compton Community Development Corporation  
 Compton Entertainment Chamber of Commerce  
 Construction Industry Air Quality Coalition  
 Construction Industry Coalition on Water Quality  
 Council of Infill Builders  
 Crenshaw Chamber of Commerce  
 Culver City Chamber of Commerce  
 Downey Chamber of Commerce  
 Downtown Alliance  
 Downtown Long Beach Alliance  
 DTLA Chamber of Commerce  
 El Monte/South El Monte Chamber  
 El Salvador Corridor Association  
 El Segundo Chamber of Commerce  
 Employers Group  
 Energy Independence Now EIN  
 Engineering Contractor's Association  
 EXP The Opportunity Engine  
 FastLink DTLA  
 Filipino American Chamber of Commerce  
 Friends of Hollywood Central Park  
 FuturePorts  
 Gardena Valley Chamber  
 Gateway to LA  
 Glendale Association of Realtors  
 Glendale Chamber  
 Glendora Chamber  
 Greater Antelope Valley AOR  
 Greater Bakersfield Chamber of Commerce  
 Greater Coachella Valley Chamber of Commerce  
 Greater Downey Association of REALTORS  
 Greater Lakewood Chamber of Commerce  
 Greater Leimert Park Crenshaw Corridor BID  
 Greater Los Angeles African American Chamber  
 Greater Los Angeles Association of Realtors  
 Greater Los Angeles New Car Dealers Association  
 Greater San Fernando Valley Chamber  
 Harbor Association of Industry and Commerce  
 Harbor Trucking Association  
 Historic Core BID of Downtown Los Angeles  
 Hollywood Chamber  
 Hospital Association of Southern California  
 Hotel Association of Los Angeles  
 ICBWA- International Cannabis Women Business  
 Association  
 Independent Cities Association  
 Independent Hospitality Coalition  
 Industrial Environmental Association  
 Industry Business Council  
 Inglewood Board of Realtors  
 Inland Empire Economic Partnership  
 Irwindale Chamber of Commerce  
 Kombucha Brewers International  
 La Cañada Flintridge Chamber  
 LA County Medical Association  
 LA Fashion District BID  
 LA South Chamber of Commerce  
 Larchmont Boulevard Association  
 Latin Business Association  
 Latino Food Industry Association  
 Latino Golfers Association  
 Latino Restaurant Association  
 LAX Coastal Area Chamber  
 Licensed Adult Residential Care Association-  
 LARCA  
 Long Beach Area Chamber  
 Long Beach Economic Partnership  
 Long Beach Major Arts Consortium  
 Los Angeles Area Chamber  
 Los Angeles Economic Development Center  
 Los Angeles Gateway Chamber of Commerce  
 Los Angeles Latino Chamber  
 Los Angeles LGBTQ Chamber of Commerce  
 Los Angeles Parking Association  
 Los Angeles Regional Food Bank  
 MADIA Tech Launch  
 Malibu Chamber of Commerce  
 Manhattan Beach Chamber of Commerce  
 Manhattan Beach Downtown Business &  
 Professional Association  
 Marina Del Rey Leases Association  
 Marketplace Industry Association  
 Monrovia Chamber  
 Motion Picture Association of America, Inc.  
 MoveLA  
 MultiCultural Business Alliance  
 NAIOP Southern California Chapter  
 NAREIT  
 National Association of Minority Contractors  
 National Association of Theatre Owners  
 CA/Nevada  
 National Association of Women Business Owners  
 National Association of Women Business Owners -  
 LA  
 National Association of Women Business Owners-  
 California  
 National Federation of Independent Business

Owners California  
 National Hookah  
 National Latina Business Women's Association  
 Norwegian American Chamber of Commerce  
 Ofiso Community Foundation  
 Orange County Business Council  
 Orange County Hispanic Chamber of Commerce  
 Pacific Merchant Shipping Association  
 Panorama City Chamber of Commerce  
 Paramount Chamber of Commerce  
 Pasadena Chamber  
 Pasadena Foothills Association of Realtors  
 PGA  
 Pharmaceutical Care Management Association  
 PHRMA  
 Pico Rivera Chamber of Commerce  
 Pomona Chamber  
 Rancho Southeast REALTORS  
 ReadyNation California  
 Recording Industry Association of America  
 Regional CAL Black Chamber, SVF  
 Regional Hispanic Chambers  
 San Gabriel Valley Economic Partnership  
 San Pedro Peninsula Chamber of Commerce  
 Santa Clarita Valley Chamber  
 Santa Clarita Valley Economic Development Corp.  
 Santa Monica Chamber of Commerce  
 Secure Water Alliance  
 Sherman Oaks Chamber  
 Signal Hill Chamber  
 South Bay Association of Chambers  
 South Bay Association of Realtors  
 South Gate Chamber of Commerce  
 Southern California Contractors Association  
 Southern California Golf Association  
 Southern California Grantmakers  
 Southern California KFC Franchise  
 Southern California Leadership Council  
 Southern California Minority Suppliers  
 Development Council Inc.  
 Southern California Water Coalition  
 Southland Regional Association of Realtors  
 Specialty Equipment Market Association  
 Structural Engineers Association of Southern  
 California  
 Sunland/Tujunga Chamber  
 Sunset Strip Business Improvement District  
 Swiss American Chamber of Commerce  
 Thai American Chamber of Commerce  
 The Bridge Network  
 The LA Coalition for the Economy & Jobs  
 The Los Angeles Taxpayers Association  
 The Two Hundred for Homeownership  
 Torrance Area Chamber  
 Tri-Counties Association of Realtors  
 United Chambers – San Fernando Valley & Region  
 United Contractors  
 United States-Mexico Chamber  
 Unmanned Autonomous Vehicle Systems  
 Association  
 Urban Business Council  
 US Green Building Council  
 US Resiliency Council  
 Valley Economic Alliance, The  
 Valley Industry & Commerce Association  
 Venice Chamber of Commerce  
 Vermont Slauson Economic Development  
 Corporation  
 Veterans in Business  
 Vietnamese American Chamber  
 Village of Sherman Oaks BID  
 Warner Center Association  
 West Covina Chamber  
 West Hollywood Chamber  
 West Hollywood Design District  
 West Los Angeles Chamber  
 West San Gabriel Valley Association of Realtors  
 West Valley/Warner Center Chamber  
 Westchester BID  
 Western Electrical Contractors Association  
 Western Manufactured Housing Association  
 Western Propane Gas Association  
 Western States Petroleum Association  
 Westside Council of Chambers  
 Westwood Community Council  
 Whittier Chamber of Commerce  
 Wilmington Chamber  
 World Trade Center  
 Yes in My Backyard  
 7-Eleven Franchise Owners Association of  
 Southern California

**Response to Comment Letter #41:***Response to Comment 41-1 through 41-6:*

This comment letter contains remarks regarding the Draft SEA and the analysis of the environmental impacts associated with implementing PAR 1111 and PAR 1121. Upon its release, please see Appendix D of the Final SEA which contains this comment letter relabeled as Comment Letter #3, and the responses relabeled as 3-1 through 3-6.

**COMMENT LETTER #42: ASIAN PACIFIC ENVIRONMENTAL NETWORK**

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of the Asian Pacific Environmental Network, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Elle C. Chen  
 Legislative Director  
 Asian Pacific Environmental Network

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

42-1

**Response to Comment Letter #42:***Response to Comment 42-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



**COMMENT LETTER #43: CALIFORNIA SAFE SCHOOLS**

December 6, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: mkrause@aqmd.gov; hfarr@aqmd.gov

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of California Safe Schools, we write to support South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "the only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup>

Given the serious pollution in this region, the health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

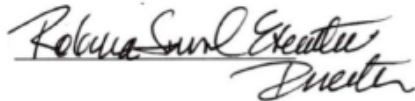
We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

43-1

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

A handwritten signature in black ink that reads "Robina Suwol Executive Director". The signature is written in a cursive style.

Robina Suwol  
Executive Director, California Safe Schools  
PO Box 2756  
Toluca Lake, California 91610

### **Response to Comment Letter #43:**

#### *Response to Comment 43-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #44: CALIFORNIA COMMUNITIES AGAINST TOXICS**

**California Communities Against Toxics  
PO Box 2050 \*Rosamond, CA 93560**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of California Communities Against Toxics, a coalition of environmental groups who have worked to reduce air pollution for over 30 years in California we are writing to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious air pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is being weakened by delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Our members face the health consequences daily of poor air quality and need our regulatory agencies to take concrete action to reduce pollution. Especially in areas of the South Coast Basin that are most highly impacted from multiple sources of pollution, we need to create incentives for early adopters of new zero emission technologies like microgrids, heat pumps, and other zero emissions technologies.

This is why we are so pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be vital in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of transitioning away from combustion in our homes and our businesses.

---

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

44-1

Sincerely,

Jane Williams  
Executive Director  
California Communities Against Toxics

**Response to Comment Letter #44:**

*Response to Comment 44-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #45: GENGHMUN ENG**

Updated 12/10/2024 Public Comment:  
**Justification for Proposed Amendment to PAR-1121**  
 Submitted by: (Dr.) Genghmun Eng (“Citizen”)  
 5215 Lenore St., Torrance, CA 90503

According to Google(R), the percent of Los Angeles County Housing Units built before 1960 is only about 3.6% of all Housing Units. (see attached page at end). Many of these pre-1960 Units are Single-Family Residences (SFR), which contribute significantly to the overall character and desirability of many neighborhoods.

45-1

SFR Units built before 1960, with no Air Conditioning (A/C) is likely to be even a smaller percentage. To help preserve the historical nature of these residences and their surrounding neighborhoods, Citizen proposes that an exemption to the proposed NOx Zero-Emission Requirements for replacement Water Heaters be allowed, which still preserves the Table 2 requirements as a 96+% solution to the desired NOx reductions. This can be accomplished by modifying the PAR-1121 Table 2 note, to read:

*\* Excluding Mobile Home Water Heaters, and Water Heaters for Single-Family Residences without Air-Conditioning that were constructed before 1960, in order to preserve the character of many Los Angeles historical neighborhoods.*

Additionally, a typical residential gas water heater uses between 20-50 therms of gas per month, which translates to roughly 2,000-5,000 BTUs per hour depending on its size and usage frequency; a "therm" is a unit of measurement for natural gas equaling 100,000 BTUs.

Key points about residential gas water heater usage:

**Average consumption:** Most homes use between 20 and 50 therms of gas per month for hot water.

**BTU rating:** A typical residential gas water heater BTU rating is 30,000-40,000 BTUs per hour

**Factors affecting usage:** The amount of hot water used, water temperature settings, and the size of the water heater tank all influence gas consumption.

To convert a measurement in Joules to a measurement in british thermal units (BTU), multiply the energy by the following conversion ratio: **0.000948 british thermal units/Joule**. The energy in british thermal units is equal to the energy in joules multiplied by 0.000948. To convert BTUs to Joules, multiply by **1054.85232**. Therefore:

1 'NOx' ng/J = 1 ng/[1J (.000948 BTU/J)] = 1054.85 ng/BTU = 1.05485 ug/BTU.

10 'NOx' ng/J = 10548.5 ng/BTU = 10.5485 ug/BTU=1.05485 gms/(therm).

50 therms/month = 600 therms/year = 632.911 gms 'NOx' per year for an average household.


At 453.592 grams per pound, this is 1.39633 pounds of 'NOx' per year for an average household.


The Valero-Ultramar facility has an 'NOx' allocation of 472,716 pounds per year, which is equivalent to 338,785 average residences. Given 3,785,720 total housing units in Los Angeles County as of 2023, with a total of 132,193 built before 1960, exempting all housing units built before 1960 would still only be 39% of the 'NOx' allocation for this one large industrial polluting facility.

In unincorporated Los Angeles County, the most common household size is two people (25.5%), and the second most common is three people (18.3%). Assuming the remainder is a one-person household would then be 56.2%, for an average occupancy of at least 1.62 persons per household. Using 1.62 as representative of SFR occupancy for homes built before 1960 gives 214,417 affected human persons.

On this scale, the full Valero-Ultramar 'NOx' allocation would be equivalent to the expected 'NOx' water heater load expected from 549,800 human persons, occupying the SFR units. Thus, having a pre-1960 SFR exception is well justified.

◆ AI Overview

As of July 1, 2023, Los Angeles County had 3,675,720 housing units. 

Los Angeles County has a significant shortage of affordable housing, with some estimates suggesting that the county is 270,000 units short. The county is also losing affordable housing units at an alarming rate, with some 3,500 units at risk of losing their affordability terms. 

**Some of the challenges facing the county's housing market include:**

**High housing costs**

Renters in Los Angeles County need to earn \$48.04 per hour to afford the average monthly asking rent of \$2,498. 


**Low production rate**


The production rate for affordable housing is at its lowest in over a decade. 

**Homelessness**

In 2023, there were only 39,752 beds available for people experiencing homelessness. 

◆ AI Overview

The number of housing units built in Los Angeles County before 1960 was 132,193 units in the 1950s. In the 1960s, the number of houses built increased by 76% to 232,379. 

Los Angeles's housing stock includes 1,373,864 units, with 506,115 owner-occupied and 867,749 renter-occupied. The city's goal is to build more than 450,000 homes by 2029 to meet state housing requirements. 

**Fraction of LA County Housing Units  
built before 1960 is only 3.6% of present-day total:  
 $(132,193) / (3,675,720) = 3.6 \%$**

Table 1 – NOx Emission Limits

Equipment	NOx Emission Limits	
	ng/J	ppmv
Water Heater*	10	15
Mobile Home Water Heater	40	55

\* Excluding Mobile Home Water Heater

(2) On and after the applicable Table 2 compliance dates, no person shall manufacture, supply, sell, resell, offer for sale, import, or install a Water Heater for use in the South Coast AQMD that exceeds the Table 2 NOx emission limits. The applicable Table 2 compliance dates for New Building types shall be determined based on the construction or alteration completion date.

PAR 1121 - 5

### Response to Comment Letter #45:

*Response to Comment 45-1:*

Staff appreciate your comment and analysis. Please see Response to General Comment 10 for staff response.

**COMMENT LETTER #46: BAN SUP (SINGLE USE PLASTIC)**

December 10, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

RE: Support for Proposed Amended Rules 1111 and 1121

Dear Mr. Krause and Ms. Farr,

Ban SUP (Single Use Plastic), an organization that focuses on reduction of single use plastic and associated global greenhouse gas emissions with over 400 members, applauds South Coast AQMD's efforts to clean up appliance pollution with amendments to Rules 1111 and 1121.

We are excited this recommendation could reduce more emissions than other initiatives passed in the last three decades. This is especially important since California is slated to miss all of our climate goals.

According to Edison International, California wants to reduce greenhouse gases 40% below 1990 levels by 2030 but the state could miss the mark by 30 to 90 million metric tons if specific steps are not made to significantly bring down carbon emissions. We think that may be underestimated. Therefore, it is imperative that this amendment passes soon.

We need to make sure that these rules go to the Governing Board quickly with strong wording in order to be adopted in February to try to meet our climate goals, especially since other entities are failing.

Thanks for AQMD's focus and efforts on these proposed amendments.

Sincerely,

Cheryl Auger  
President  
Ban SUP (Single Use Plastic)

46-1

**Response to Comment Letter #46:**

*Response to Comment 46-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



**COMMENT LETTER #47: STEPHANIE PIN CETL**

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of myself, Stephanie Pincetl, Professor at the UCLA Institute of the Environment and Sustainability, I write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. I am deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

My research with colleagues at UCLA shows that indoor air quality through the burning of fossil gas, is measurable and detrimental to public health. We also have conducted numerous telephone interviews with renters in disadvantaged communities and find that people are open to electrification, even of their stoves. Obviously the biggest obstacle is cost. But public health benefits are significant, and electrification of home appliances can be conducted with existing technologies.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Stephanie Pincetl  
 Professor at UCLA's Institute for the Environment and Sustainability, writing on my own behalf.

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

47-1

**Response to Comment Letter #47:***Response to Comment 47-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #48: CLIMATE ACTION SANTA MONICA**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121s**

Dear Mr. Krause and Ms. Farr:

Climate Action Santa Monica supports the South Coast Air Quality Management District's (SCAQMD) proposal to reduce appliance air pollution to improve public health by adopting Rule 1111 and 1121 amendments requiring that all new and replacement water heaters and furnaces be electric. We urge the adoption of strong requirements with minimal exemptions that take effect when currently proposed. We also support the approval of \$100 million in incentives to support the implementation of these amendments, especially for lower income residents, through SCAQMD's Go Zero program.

The City of Santa Monica has adopted a Title 24 Reach Code encouraging the use of electric water and space heating in new buildings and is working on an existing building ordinance for larger structures. Therefore the proposed Rule 1111 and 1121 amendments would help the City achieve its goals.

As a community organization, we know that many community members are working on electrifying their homes to improve indoor air quality and their health, and to reduce greenhouse gases. The proposed Rule 1111 and 1121 amendments would help both contractors and homeowners by spurring the further development of the markets and skills needed to facilitate the economical and timely execution of electrification projects.

Please adopt the Rule 1111 and 1121 amendments with urgency to expedite the transition away from hazardous air emissions in our homes and communities.

Sincerely,

Laurene von Klan – Executive Director and Co-Chair  
Kent Strumpell – Co-Chair

48-1

**Response to Comment Letter #48:***Response to Comment 48-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

COMMENT LETTER #49: SHARED STREETS



SHARED STREETS

Youth Activists for Safer Streets

Board of Directors

- Michelle Kim
- Edward Duong
- Laboni Hoq
- Dorothy Wong
- Jack Sheng
- Ken Lei
- Edward Kim
- Ringo Suen

Student Leaders

- Thomas Kim
- Eric Qiu
- Andrew Le
- Edwin Suen

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765

RE: Support for Proposed Amended Rules 1111 and 1121

Dear Mr. Krause and Ms. Farr:

49-1

On behalf of **Shared Streets**, we write to support the South Coast AQMD’s efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that “[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources.” Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Appliance pollution, specifically from gas-powered appliances such as furnaces and water heaters, is a significant contributor to poor air quality in our homes and communities. The emissions from these appliances are responsible for substantial levels of nitrogen oxides (NOx) and other harmful pollutants that worsen respiratory conditions like asthma and disproportionately impact vulnerable populations, including children and the elderly. Transitioning to zero-emission appliances is not just a necessary step for climate action—it is an urgent public health measure to protect our communities from the harmful effects of indoor and outdoor air pollution.



www.shared-streets.org



info@shared-streets.org



(626) 394-6248



**SHARED STREETS**

Youth Activists for Safer Streets

49-1

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Michelle Kim  
Executive Director  
Shared Streets  
mkim@shared-streets.org



[www.shared-streets.org](http://www.shared-streets.org)



[info@shared-streets.org](mailto:info@shared-streets.org)



(626) 394-6248

**Response to Comment #49:***Response to Comment 49-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #50: PASADENA CHAMBER OF COMMERCE AND CIVIC ASSOCIATION

December 12, 2024

Mr. Peter Campbell and Governing Board Members  
 Planning, Rule Development, and Implementation  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 VIA Email: [pcampbell@aqmd.gov](mailto:pcampbell@aqmd.gov)

RE: SCAQMD PAR 1111 and PAR 1121

Dear Mr. Campbell, Governing Board and Committee Members,

The Board of Directors of the Pasadena Chamber of Commerce and Civic Association has significant concerns related to the implementation of South Coast Air Quality Management District PAR 1111 and PAR 1121 which would phase in all-electric appliance regulations.

Here are our concerns:

1. Implementation of these rules will have negligible impact on clean air or our environment. 50-1
2. Costs to consumers, businesses and the public will be expensive, especially for those who will be required to switch from gas appliances to electric. 50-2
3. These rules are being considered without adequate input from the public which is mostly unaware of these proposed changes. 50-3

The Board of the Pasadena Chamber of Commerce regularly supports measures that are environmentally friendly, often putting us at odds with other business organizations. In this instance, however, we believe the potential costs and burden on businesses, residents and consumers do not justify these new regulations.

Please reject these new regulations. There are better ways to achieve your goals.

Thank you,



Paul Little  
 President and Chief Executive Officer

### Response to Comment Letter #50:

#### *Response to Comment 50-1:*

Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

#### *Response to Comment 50-2:*

The new rule concept for Proposed Amended Rules 1111 and 1121 released February 7, 2025, which includes zero-NOx emission sales targets for manufacturers will further address the cost concern for zero-NOx emission units. The new rule proposal allows the sale of both zero-NOx emission electric units and NOx-emitting natural gas-fired units, allowing consumers to make individual decisions on the type of unit to install.

Please refer to General Response to Comment 2.

*Response to Comment 50-3:*

Please refer to General Response to Comment 5.



COMMENT LETTER #51: ACTIVESGV



activeSGV.org #ActiveSGV

December 13, 2024

BOARD

Vincent Chang

David Diaz

Rafaal Gonzalez

Stephanie Ramirez

Wesley Rautimann

Mr. Krause and Ms. Farr
South Coast Air Quality Management District (South Coast AQMD)
21865 Copley Drive
Diamond Bar, CA 9176

RE: SUPPORT | Proposed Amended Rules 1111 and 1121

Dear Mr. Krause and Ms. Farr:

51-1

As a community-based organization committed to realizing a more sustainable, equitable, and livable San Gabriel Valley, ActiveSGV strongly supports evidence-based efforts to reduce air pollution, including Rules 1111 and 1121. The proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The rulemaking is also a key step towards implementing the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."

Given the serious pollution in the region, which remains an extreme nonattainment zone, timely adoption of zero-emission technology is desperately needed. Fortunately zero-emission appliances are quickly becoming a best practice, with the rapid adoption of the technology around the world over the past decade. In light of this track record and the need to accelerate the switch, ActiveSGV is concerned by any attempts to weaken the proposal via delayed compliance deadlines or other loopholes. It is critical that these rules go to the Governing Board in a strong form and be adopted in February 2025.

ActiveSGV is also pleased to see the South Coast AQMD's Go Zero program take form. Targeted incentives are essential to realizing an equitable transition to zero emission buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. We applaud this effort and urge the Board to endorse an allocation of \$100 million to the new program.

As a public health organization headquartered in El Monte, one of the most pollution-burdened communities in California, ActiveSGV is acutely aware of the health impacts associated with air pollution. The outcomes of our poor air quality in southern California are devastating. High rates of asthma and other respiratory illnesses, as well as cognitive impairments, some cancers, and even obesity have all been linked to exposure to high levels of air pollution. The cost of these health disparities -- particularly long-term, chronic illnesses such as asthma -- is billions in associated healthcare and diminished productivity to Los Angeles County.

The time is now to adopt clear rules and take a significant step towards implementing the 2022 AQMP. ActiveSGV thanks AQMD staff's extensive work in developing the proposed amendments to Rules 1111 and 1121. We urge the Board and staff to wrap up this rulemaking process as soon as possible, so we can begin the work of eliminating dangerous air pollution from buildings.

If you have any questions regarding this matter, please contact me at david@activesgv.org. Thank you for your time and consideration,

David Diaz

David Diaz, MPH
Executive Director

ActiveSGV's mission is to support a more sustainable, equitable, and livable San Gabriel Valley.
Jeff Seymour Center • 10900 Mulhall Street El Monte, CA 91731

**Response to Comment Letter #51:***Response to Comment 51-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #52: AMERICAN LUNG ASSOCIATION**

December 12, 2024

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Via Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**American Lung Association Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

52-1

The American Lung Association writes in support of the South Coast Air Quality Management District's efforts to further reduce pollution from appliances through amendments to strengthen Rules 1111 and 1121. This proposed regulatory package and focus on zero-emission, non-combustion technologies will provide significant relief to the region's air quality and public health challenges. We urge approval of these lifesaving proposals without further delay.

The South Coast region is home to the most difficult air pollution challenges in the United States, ranking as the nation's most ozone-impacted metropolitan region in our "State of the Air" 2024 report. The health impacts of ozone pollution are well known and represent a serious concern for the millions of residents in the region living with asthma and other respiratory and cardiovascular illnesses, children, seniors, residents with lower incomes, people of color and others at greater risk due to unhealthy air.

At a minimum, the proposed amendments to Rules 1111 and 1121 are needed to achieve clean air standards in the region but can also serve as a strong model framework for a statewide program – both local and statewide actions are vital for public health. The district's estimated benefits demonstrate that the proposals represent an important public health intervention to save lives and reduce suffering throughout the region, including:

- 4,000 lives saved over the course of implementation,
- 16,000 cases of asthma avoided, and
- 4,000 emergency room visits avoided.

To bring these potential health benefits online in communities throughout the South Coast region, the American Lung Association supports timely adoption and implementation of the strongest possible 1111 and 1121 rules without further delay. We also appreciate and support the district's efforts to expand the "Go Zero" incentive funding available to accelerate the transition away from combustion and toward zero-emission technologies with an emphasis on equitable outcomes. Please contact Will Barrett at [William.Barrett@Lung.org](mailto:William.Barrett@Lung.org) with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Will Barrett".

Will Barrett  
 Senior Director  
 Nationwide Advocacy, Clean Air

**Response to Comment #52:***Response to Comment 52-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #53: INDUSTRIOUS LABS



Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of Industrious Labs, I write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

53-1

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Evan Gillespie  
Partner  
Industrious Labs

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<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

**Response to Comment #53:***Response to Comment 53-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #54: CLIMATE REALITY PROJECT



Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

54-1

On behalf of our three chapters of the Climate Reality Project, we write in **support of the South Coast AQMD's Proposed Amended Rules 1111 and 1121**, which would set zero-emission standards for gas furnaces and water heaters, and in **opposition to weakening the rules by changing their future effective dates for existing buildings**.

The proposal as currently drafted requires new water heaters installed in existing buildings to achieve zero NOx emissions beginning on January 1, 2027, and requires new furnaces installed in existing buildings to achieve zero emissions beginning on January 1, 2028. We oppose changing these dates to January 1, 2029 for several reasons.

**Delayed implementation delays the rules' health and climate benefits.** This proposed regulatory package will achieve more emissions reductions than any effort in the past three decades, but with the 15 to 25 year life of these appliances and alternative compliance options staff has included, the rules will take decades to be fully effective. Given the time lag of these rules and the serious pollution in this region, an implementation delay would needlessly delay desperately-needed health gains from millions of people in the region. A delay means that even more residents will be tethered to greenhouse gas-emitting methane-burning appliances well into the 2050s and well past the year California plans to reach carbon neutrality.

**Delayed implementation is not supported by evidence.** Several exceptions have already been included in the proposal, including mobile homes, high elevation communities, and installations that require construction. These exceptions were based on staff's assessment of currently available technology and cost benefit calculations. No similar analysis has been given to support a broader delay of the rules. No explanation has been given as to why water heater rules should be delayed two years while furnace rules should be delayed one year. Narrow, targeted alternative compliance options are preferable to broad and unsupported delays. In fact, staff has already proposed a separate new implementation delay for central furnaces where paired air conditioners are less than 10 years old, with justification from staff's new, more conservative cost benefit analysis.

**Delayed implementation delays market impacts.** Heat pumps outsold both gas furnaces and gas water heaters in the United States last year and are on pace to do so again this year. With increased popularity and incentive support, heat pump manufacturers are offering more models that fill in more use cases. These rules will accelerate this innovation from

54-1

manufacturers and hasten installer workforce development. Delaying implementation would delay these benefits.

**Delayed implementation delays legal clarity.** Unfortunately, we know that litigation over the rules is likely, if not inevitable. A blanket delay of two years could be followed by a court stay that results in continued emissions and negative health impacts for the region's residents. While AQMD cannot prevent litigation, keeping the current, earlier implementation dates will mean swifter legal clarity that benefits both residents and businesses.

**Technology check-ins can provide another opportunity to add alternative compliance options if needed.** We are confident in the market's ability to meet demand, and willing to support justified compromises to make sure the rule is both strong and fair. We would support adding a second technology check-in at the end of 2027 and using the check-ins to assess supply chain and cost changes and address any exceptionally challenging installations not covered in the current proposal.

We would also support increasing the budget for South Coast AQMD's Go Zero pilot program to \$100 million, which will multiply the impact of this program nearly fivefold.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital to give clarity to the region's homeowners, landlords, tenants, and appliance manufacturers and installers.

Sincerely,

Charles Miller  
Chapter Chair  
**Los Angeles Climate Reality Project**

Lisa Swanson  
Policy Chair  
**Climate Reality Project Orange County Chapter**

Sharon Ungersma  
Chapter Chair  
**San Fernando Valley Climate Reality Project**

#### **Response to Comment #54:**

*Response to Comment 54-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



**COMMENT LETTER #55: COALITION FOR CLEAN AIR**

December 11, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

55-1

Coalition for Clean Air writes in support of the South Coast AQMD's efforts to clean up building emissions through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emission reductions than any other effort passed by the district in over three decades. These rules are also key components of the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> It is important to note that, as proposed, these amendments are technology-neutral and only create zero-emissions standards for these appliances. These standards would be phased in, starting in 2026 through 2029, and would be prospective – meaning existing units would not need to be proactively decommissioned.

Southern California is home to the smoggiest air in the nation. The tens of millions of breathers in Southern California desperately need these rules and their associated public health benefits. We are deeply concerned, however, that the opponents' tactics of delaying and weakening these proposals are succeeding. The opponents' last-minute demand to delay consideration of these rules is merely a time-tested canard to further sow misinformation and confusion about these rule amendments. While public outreach and transparency are essential parts of the rulemaking process, the opposition are setting an unreasonable standard that is impossible to satisfy.

Without a doubt, the opponents will move the goal posts again, barring a complete capitulation by South Coast AQMD. Already, opponents of this rule are proposing to delay implementation by three years until 2029, which staff is actively considering. We urge both staff and the Governing Board to reject efforts to delay this rule and reduce its efficacy. It is vital that these rules go to the Governing Board in a strong form and be adopted in February. Failure to pass these rules would not only call into question South Coast AQMD's commitment to the AQMP but would also greatly encourage further bad faith tactics from polluters.

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<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

55-1

With that said, we remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be instrumental in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We understand that the rulemaking process is difficult, and we appreciate South Coast AQMD staff's work on the proposed amendments to Rules 1111 and 1121. Yet, public health in Southern California is on the line. South Coast AQMD must implement all feasible measures to meet health-protective air quality standards. Failure to do so would jeopardize public health and invite severe Federal sanctions for our continued violations of the Clean Air Act.

For these reasons, we urge you to keep the proposed amendments to Rule 1111 and 1121 on track for passage in February.

Sincerely,



Chris Chavez  
Deputy Policy Director

### **Response to Comment Letter #55:**

#### *Response to Comment 55-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #56: SEAN ARMSTRONG**

From: Sean Armstrong <[REDACTED]>  
 Sent: Wednesday, December 11, 2024 4:49 PM  
 To: Peter Campbell <[REDACTED]>  
 Cc: Melissa Yu <[REDACTED]>; CA Building Decarbonization <[REDACTED]>; San Diego Building Electrification Coalition <[REDACTED]>  
 Subject: [EXTERNAL] Comment Letter to SCAQMD re: Affordable Housing support for rules 1111 and 1121

Dear Peter Campbell,

It is not commonly known that:

1. Nationally Affordable Housing essentially began the modern building electrification movement in 2007, when the USDA Rural Development Division began funding hundreds of houses and apartments each year that competitively scored only if they developed all-electric housing with heat pumps. In California, again it has been affordable housing that developed the supermajority of all-electric housing until 2020, when it became popular with utilities and embraced by the CEC's Title 24 Code.
2. Affordable Housing developers have shown me that when replacing an old 50 gallon gas tank water heater, a new \$900 Ultra Low NOx tank is \$200 more expensive than a \$700 No NOx electric resistance tank. In California electric resistance water heating is operationally more expensive than gas (but not so in other states), so an \$1860 No NOx heat pump tank eliminates that concern. It costs \$300,000 to \$800,000 per apartment to purchase a building, so the additional \$1000 marginal cost of using a heat pump is a de minimus (0.3% to 0.12%) financial impact to the ownership cost of a building.
3. Replacing an old gas wall furnace with a new one is more expensive than removing it in favor of a new packaged heat pump. An Energy Star, \$550 packaged heat pump can be installed in a window in under an hour, or in a wall in 3 hours, and also provide life-saving air conditioning. However, a least-cost, apartment-standard \$900 gas wall furnace requires 4+ hours to safely remove, replace and test for combustion safety.

56-1

56-2

56-3

In short, the circumstances that face affordable housing developers has led them to build and retrofit to all-electric to simply save money. With the addition of tax credits and rebates, it makes no financial sense to install gas replacements to gas appliances. Resistance to change is the reason that some developers oppose new, desperately needed air quality regulations, not information derived from a depth of experience and cost comparisons.

56-4

Sincerely,  
 Sean Armstrong  
 Managing Principal  
 Redwood Energy

**Response to Comment Letter #56:**

*Response to Comment 56-1:*

Staff appreciates the comments and information provided about affordable housing.

*Response to Comment 56-2:*

Staff agrees that although zero-emission water heating appliances may have a higher upfront cost, the cost of operating a zero-emission appliance, specifically highly efficient heat pumps, can be lower than the cost of operating a NOx-emitting appliance. For more information regarding affordability, please refer to Response to General Comment 2.

*Response to Comment 56-3:*

Staff appreciates the comments and information provided about retrofitting a wall furnace with a packaged heat pump.

*Response to Comment 56-4:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #57: BREATHE SOUTHERN CALIFORNIA**

BreatheSoCal.org

5858 Wilshire Blvd., Suite 300  
 Los Angeles, CA 90036  
 P: (323) 935-8050  
 F: (323) 935-1873

December 11, 2024

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of Breathe Southern California, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

57-1

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

A handwritten signature in blue ink that reads "Marc Carrel".

Marc Carrel  
 President and CEO  
 Breathe Southern California

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

Breathe Easier.™

**Response to Comment Letter #57:***Response to Comment 57-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #58: CALIFORNIA ENVIRONMENTAL VOTERS**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

58-1

California Environmental Voters represents over 135,000 members, with a mission to protect and enhance the environment and the health of all California communities by electing environmental champions, advancing critical priorities, and holding policy makers accountable. As such, EnviroVoters is committed to rules that champion a transition away from polluting appliances in the interest of public health and climate change.

California Environmental Voters is in strong support of South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The adoption of this rule is necessary to transition households and businesses away from appliances with known health harms. South Coast residents face a significant air pollution burden— tackling NOx emissions will decrease formation of ozone and PM 2.5 in parallel, and is critical in meeting South Coast's climate goals.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be extremely helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

A handwritten signature in black ink that reads "Gracyna Mohabir".

Gracyna Mohabir  
Clean Air & Energy Regulatory Advocate

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

**Response to Comment Letter #58:***Response to Comment 58-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



**COMMENT LETTER #59: PACIFIC ENVIRONMENT**

December 12, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

59-1

On behalf of Pacific Environment, I write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121.

Pacific Environment is a 501(c)(3) public-benefit corporation, headquartered in San Francisco, with regional offices in Anchorage, Alaska, and Chongqing, China. Founded in 1987, Pacific Environment protects people, wildlife, and ecosystems by promoting grassroots activism, strengthening communities, leading strategic campaigns, and reforming international policies. Pacific Environment has earned rare permanent consultative status at the International Maritime Organization (IMO), the United Nations' entity that sets international shipping law. As a member of the Trade, Health, and Equity (T.H.E.) Impact Project, we collaborate with community-based organizations, eNGOs, and environmental lawyers in the South Coast to reduce emissions from polluting freight and logistic operations that threaten the livelihoods of frontline communities.

This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The South Coast air basin has been in nonattainment with federal Clean Air Act standards for over two decades, yet we still lack regulations that will get us there and drive the adoption of zero-emission technologies. Other sectors like the San Pedro Bay Ports remain responsible for over 100 tons of nitrogen oxide (NOx) emissions per day; however, there is hope that we can achieve the necessary reductions. Regulatory measures from the South Coast AQMD, like the amendments to Rules 1111 and 1121 and the Indirect Source Rule (ISR) for Marine Ports promise much needed emission reductions and are within the district's jurisdiction to tackle.

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.



59-1

Unfortunately, due to the same repeated objections and unsupported claims from the fossil fuel industry, we have seen delays to these life-saving regulations. We need strong regulations to address these sectors and ensure emission reductions that will get us closer to attainment of federal air quality standards. The South Coast AQMD must stand firm against industry pressure and continue its efforts to enforce regulations that safeguard public health and the environment.

Pacific Environment is pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Cristhian Tapia-Delgado  
Climate Campaigner, Southern California  
Pacific Environment

### **Response to Comment Letter #59:**

*Response to Comment 59-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #60: MOVE LA**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**  
Cc: Yessenia Moreno – [ymoreno@earthjustice.org](mailto:ymoreno@earthjustice.org)

Dear Mr. Krause and Ms. Farr:

60-1

On behalf of Move LA, we write to support the South Coast AQMD’s efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that “[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources.”<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Move LA builds broad-based coalitions amongst diverse stakeholders seeking bold solutions to the region’s biggest challenges—i.e., mobility, affordable housing, air quality, homelessness, and climate change. Move LA advocates for the development of a transportation and goods movement system for Los Angeles County that is zero-emission, that includes of commercial and industrial buildings. We fight for policies to ensure prosperous and healthy neighborhoods free of pollution where people of all ages and incomes can live, work, and thrive.

We remain pleased to see the South Coast AQMD’s Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD’s Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff’s significant work on these proposed amendments to Rules

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,



Eli Lipmen  
Executive Director  
Move LA  
[www.moveLA.org](http://www.moveLA.org)  
[Eli@moveLA.org](mailto:Eli@moveLA.org)

**Response to Comment Letter #60:**

*Response to Comment 60-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #61: SIERRA CLUB**

December 13, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: mkrause@aqmd.gov; hfarr@aqmd.gov

**RE: SUPPORT for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

The Sierra Club Angeles Chapter is writing to voice our strong support of Proposed Amended Rules (PAR) 1111 and 1121 to set a zero-NO<sub>x</sub> emission limit on gas-powered furnaces and water heaters. With over 33,000 members in Los Angeles and Orange Counties, one issue that impacts our members regardless of where they live, work, or income is that we are all affected by the poor air quality in the region.

We are seeking your leadership to apply zero-NO<sub>x</sub> standards on furnaces and water heaters, which is critical for meeting National Ambient Air Quality Standards (NAAQS) and a way to achieve the required nitrogen oxide (NO<sub>x</sub>) reductions identified in the 2022 Air Quality Management Plan (AQMP). Understanding that residential gas-burning equipment alone emits more NO<sub>x</sub> pollution than all the region's cement production and power generation combined should add urgency to act and support these rules that over time will target and transition more than 10 million methane-burning furnaces and water heaters.

Our staff, volunteers, and community members have been involved in the process of the proposed amendment of these rules for over a year and we strongly believe that these are reasonable rules. We appreciate staffs engaging working group meetings and discussions where feedback has been provided to ensure a rule works for everyone AND is tackling the poor air quality issue we experience.

These rules are ready. The Go Zero Rebate program is also laying a path forward for stronger success for these rules, including funding for additional outreach, ongoing investments in building and developing the workforce, and funding for rebates ahead of the rules compliance dates. The Go Zero Program will continue to drive the market signal and advance technology, which already exists. Additionally, a technology check-in for June 2027 has been added through the rule-making process which will help share the success of the rules and inform the increased market of technology available in the next few years.

61-1



61-1

Energy-efficient heat pumps offer solutions that provide additional significant benefits, such as reduced greenhouse gas emissions and increased access to efficient cooling and air filtration during extreme heat and wildfire events, which are intensified and frequent year after year. The staff has consistently reaffirmed that technology to support this transition exists today and that these measures are feasible, even inviting contractors to present during working group meetings. We have seen heat pumps outsell gas furnaces in the United States for the last two years and a 35% year-over-year growth in the heat pump water heater market last year as well.

The proposal to move these equipment categories to zero-NO<sub>x</sub> alternatives is key to meeting the goals in the 2022 AQMP. We support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February. Staff has done great work gathering feedback on achievable compliance dates and supporting an equitable transition. The District must stay the course to deliver on the promise of the 2022 AQMP.

Sincerely,

Kim Orbe  
Senior Conservation Program Manager  
Sierra Club, Angeles Chapter

### Response to Comment Letter #61:

#### *Response to Comment 61-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #62: LA FORWARD INSTITUTE**

December 12, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

62-1

On behalf of LA Forward Institute, I write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."

Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is key, so we can work on the important aspects of actually transitioning away from combustion in our homes.

62-1

LA Forward Institute is a multiracial, cross-class, intergenerational community of Angelenos who work for policies that will make our region a fair, flourishing place for everyone. Our civic education, community organizing, and policy advocacy work engages hundreds of thousands of people across Los Angeles County. Addressing air pollution and climate change in a real and comprehensive way is a top interest of our members and the people we engage.

Thank you for your consideration of this important matter.

Sincerely,



David Levitus, Ph.D.  
Executive Director  
LA Forward Institute

**Response to Comment Letter #62:**

*Response to Comment 62-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



COMMENT LETTER #63: DAY ONE



175 n. euclid ave. pasadena, ca 91101  
p 626.229.9750 f 626.765.6239  
www.goDayOne.org

board of directors

**natalie salazar**  
president  
executive director crime stoppers

**tom coston**  
vice president  
light bringer project

**seema satouriam**  
secretary  
social worker  
cedar-sinai medical center

**lorraine nickels**  
human resources  
southern ca edison

**delano yarbough**  
community activist  
retired PUSD principal

lead staff

**christy zamani**  
executive director

**claudia morales**  
environmental prevention services  
director

**jennifer jimenez**  
community prevention programs  
director

**alisha lopez**  
tobacco control and prevention  
director

**ashley mercado**  
special projects director

**colin bogart**  
active transportation  
director

December 13, 2024

RE: Support for Proposed Amended Rules 1111 and 1121

Dear Mr. Krause and Ms. Farr:

63-1

On behalf of Day One, we write to support the South Coast AQMD’s efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades.

The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that “[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources.”<sup>4</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people.

We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to take swift action to safeguard the health and wellness of California residents.

We remain pleased to see the South Coast AQMD’s Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD’s Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff’s significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

Christy Zamani,  
Executive Director, Day One, Inc.

**Response to Comment Letter #63:***Response to Comment 63-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #64: EARTHJUSTICE



Michael Krause  
 Assistant Deputy Executive Officer for Planning, Rule Development & Implementation  
 Heather Farr  
 Planning & Rules Manager  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

64-1

On behalf of Earthjustice, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. By your own estimates, 10 tons of NOx per day could be avoided once the rules are implemented. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero-emission technologies across all stationary and mobile sources."<sup>1</sup>

We cannot overstate the public health benefits of eliminating these dangerous NOx emissions from buildings. NOx emissions are the precursor to ozone pollution and "secondary" PM<sub>2.5</sub> pollution—harmful pollutants known to trigger respiratory illness and cardiovascular disease, cognitive impairment, and premature death.<sup>2</sup> Eliminating the pollution from these appliances could help avoid the nearly 76,000 asthma attacks, 30,000 lost school days, 130 premature deaths annually estimated to result from methane gas-burning equipment currently prevalent in our buildings.<sup>3</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people.

It is important to understand that these rules are not new; they are the result of years of work. The Air District included this control measure in its 2022 AQMP. The development of that plan involved a public process that lasted over three years and included various outreach activities, such as specialized working groups, regional workshops, public hearings, and the convening of an Advisory Council. Additionally, policy briefs were released on key topics, including one focused on emissions from building appliances.

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

<sup>2</sup> Coalition for Clean Air and RMI, *Southern California's Hidden Air Pollution Problem: Gas Furnaces & Water Heaters* (December 2024); <https://www.ccair.org/wp-content/uploads/2024/12/South-Coast-Brief.pdf>

<sup>3</sup> Id

CALIFORNIA OFFICE 707 WILSHIRE BLVD., SUITE 4300 LOS ANGELES, CA 90017

T: 213.766.1059 F: 213.403.4822 CAOFFICE@EARTHJUSTICE.ORG WWW.EARTHJUSTICE.ORG

Michael Krause  
Heather Farr  
December 13, 2024  
Page 2 of 2

64-1

To further address appliance issues, a specific subgroup on this topic was created during the development of the 2022 AQMP. The rulemaking process for Proposed Amended Rules 1111 and 1121 has been occurring over 14 months and counting. This process included seven working group meetings, a public workshop, and numerous meetings with stakeholders, such as building owners, manufacturers, environmental groups, and energy providers.

Despite this extensive rulemaking process, some stakeholders critical of the regulation have only raised their concerns with the South Coast AQMD in recent months. These late comments have led staff to conduct additional analyses, provide further responses, and, in some cases, suggest modifications to these important rule amendments. As a result, staff have proposed solutions that we may not fully agree with, but we acknowledge that they arise from genuine efforts by staff to address the criticisms regarding the zero-NOx standards.

While we are deeply concerned that the proposal is being weakened by delaying compliance deadlines and offering unnecessary loopholes, rule passage is of paramount importance. It is vital these rules go to the Governing Board in February of 2025 for final adoption. The built-in technology review offers a clear inflection point to strengthen the rules with an implementation track record to inform improvements.

To help with implementation of the rule, we remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will help hasten the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives. We also encourage the South Coast AQMD Board to convene stakeholders to work together to bring more resources to the South Coast Air Basin. Earthjustice wants to work with the Governing Board and your staff to alleviate obstacles to removing combustion of fossil fuels from our homes.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,



Fernando Gaytan  
Earthjustice

**Response to Comment Letter #64:***Response to Comment 64-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #65: PATRICIA PIPKIN**

TO:  
Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

65-1

I am writing to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup>

Given the serious pollution in our region, the health gains from advancing zero-emissions technology are desperately needed by millions of people. Therefore, it is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The sooner these rules are adopted, the sooner we can begin the process of transitioning away from combustion in our homes.

Sincerely,

Patricia Pipkin  
1825 Vistillas Rd.  
Altadena, CA 91001  
[pipkin@earthlink.net](mailto:pipkin@earthlink.net)

c: Yessenia Moreno, Earthjustice

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<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

**Response to Comment Letter #65:***Response to Comment 65-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #66: SUSTAINABLE CLAREMONT

**SUSTAINABLE CLAREMONT**

PO Box 1502 | Claremont, CA 91711

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

66-1

On behalf of Sustainable Claremont, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,



Stuart Wood PhD  
Executive Director  
Sustainable Claremont

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.



**Response to Comment Letter #66:***Response to Comment 66-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #67: LOS ANGELES NEIGHBORHOOD LAND TRUST**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

67-1

On behalf of the Los Angeles Neighborhood Land Trust (LANLT), we strongly support the South Coast AQMD's efforts to address appliance pollution through amendments to Rules 1111 and 1121. This regulatory package represents an unprecedented opportunity to achieve significant emissions reductions—aligning with the 2022 Air Quality Management Plan's call for zero-emission technologies across all sources. However, we are concerned about delays and loopholes that may weaken this proposal. To prioritize the health and well-being of millions of residents in the South Coast Air Basin, swift action is needed to finalize a strong rule by February.

As an organization dedicated to creating and enhancing green spaces in underserved communities, we see firsthand the devastating impacts of air pollution on public health, particularly in areas disproportionately burdened by environmental injustices. Cleaner air means healthier communities, where children can play safely and residents can enjoy outdoor spaces without harm.

We commend the AQMD's Go Zero program and the proposed increase in funding from \$21 million to \$100 million for zero-emission incentives. These resources are crucial to advancing equitable access to cleaner technologies, particularly for disadvantaged communities. It is vital the Board endorse this commitment to ensure \$100 million goes towards these incentives.

LANLT appreciates the South Coast AQMD staff's dedication and urges swift adoption of these amendments to continue building resilient, healthy communities across Los Angeles.

Sincerely,

A handwritten signature in black ink, appearing to be "Tori Kjer", written in a cursive style.

Tori Kjer  
Executive Director  
Los Angeles Neighborhood Land Trust

**Response to Comment Letter #67:***Response to Comment 67-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

COMMENT LETTER #68: JOBS TO MOVE AMERICA



BOARD OF DIRECTORS

- Ed Wytkind, Chair
President, EW Strategies LLC
Carl Kennebrew, Vice-Chair
President, IUE-CWA
Tanya Wallace-Goburn, Vice-Chair
Exec. Director, National Black Worker Center
Robert Puentes, Sec-Treas.
President & CEO, Eno Center for Transportation
Michael Coleman
President, Sheet Metal Workers' International Association (SMART)
John A. Costa
Intl. President, Amalgamated Transit Union
Joe DiMichele
Director, Professional and Industrial IBEW Membership Development
Scott Douglas
Exec. Director, Greater Birmingham Ministries
Cecilia Estolano
CEO and Founder, Estolano Advisors
Ana Garcia-Ashley
Exec. Director, Gamaliel Network
Jacky Grimshaw
Vice President of Government Affairs, Center for Neighborhood Technology
Tamara L. Lee, Esq.
Assoc. Professor, Labor Studies & Employment Relations, Rutgers University
Mike Miller
Director, Region 6, United Auto Workers Union
Greg Regan
President, Transportation Trades Department, AFL-CIO
John Samuelsen
Intl. President, Transport Workers Union of America
Dr. Beverly Scott
Beverly Scott & Associates
Maria Somma
Organizing Director, United Steelworkers
Christian Sweeney
Deputy Organizing Director, AFL-CIO
Xinge Wang
Deputy Director, Transportation Learning Center

EXECUTIVE DIRECTOR

Madeline Janis, Esq.

DEPUTY DIRECTOR

Miranda Nelson

December 13, 2024

Mr. Krause and Ms. Farr
South Coast Air Quality Management District (South Coast AQMD)
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Krause and Ms. Farr:

On behalf of Jobs to Move America, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve significant emissions reductions and spur manufacturers to create a new generation of zero-emission furnaces and water heaters. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."1 Given the serious pollution across the region, these regulatory amendments will bring real health gains and more clean manufacturing jobs by advancing zero-emissions when good "high-road" jobs are desperately needed. Our concern however is the proposal to weaken these rules through delaying compliance deadlines and loopholes. We encourage staff to see these efforts as what they are, a ploy to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board without loopholes or delays and be adopted in February.

There is no need to slow the progress of these rules when we no longer have to choose between creating "high road" jobs and reducing pollution from buildings. The current move to zero-emissions is being embraced by manufacturers as evident in the multiple stakeholder meetings, and the conversation is no longer if, but when our buildings become decarbonized. It is in these conversations that we must continue the call for a better class of jobs in the clean energy transition. Any concerns from the furnace and heater supply chain in meeting these goals should be met with collaboration and creativity, especially when workers are on the front lines, manufacturing, selling, installing and maintaining these new technologies.

We remain pleased to see the South Coast AQMD's Go Zero

1 South Coast AQMD, 2022 AQMP, at Executive Summary.

68-1

program take form. These incentives will be really helpful up-grading buildings' with new zero-emission technologies. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. We'd like to see the Board endorse this commitment with a resolution to ensure the over \$100 million will go towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121 and your consideration of the points made in this letter. Wrapping up this rulemaking process as soon as possible is our hope, and we look forward to working on the important aspects of reducing pollution in our homes and increasing workers protections at our jobs.

Sincerely,

Jasmin Vargas  
CA Senior Organizer,  
Jobs to Move America

---

California

Illinois

New York/New Jersey

Alabama

---

525 S. Hewitt St, Los Angeles, CA 90013 | 213.358.6548 | [info@jobstomoveamerica.org](mailto:info@jobstomoveamerica.org) | [jobstomoveamerica.org](http://jobstomoveamerica.org)

**Response to Comment Letter #68:***Response to Comment 68-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 which explains the need for the rule amendments and financial incentives.

**COMMENT LETTER #69: COMMUNITIES FOR A BETTER ENVIRONMENT (CBE)**

12/13/2024

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District  
 (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

69-1

On behalf of Communities for a Better Environment (CBE), we support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed package achieves major and crucial air pollution reductions, necessary to meet health standards in a region with the worst air pollution in the nation.

This effort toward zero emission energy sources was found in the 2022 Air Quality Management Plan (AQMP) as the *only* way to meet health standards in the region, as you know. We need to further expand on this approach, and not step backward.

We are deeply concerned the proposal could be weakened or delayed, and we urge staff to reject such efforts that would reduce rule efficacy. These rules need to go to the Governing Board in a strong form, and adopted in February.

We are pleased that AQMD's Go Zero program incentives are continuing to speed up the transition away from combustion in buildings. We understand that AQMD's Executive Officer committed to a 5-fold increase in the \$21 million allocated to this program, another vitally important issue needing Board endorsement.

Thank you for your significant work on proposed amendments to Rules 1111 and 1121. Wrapping up rulemaking as soon as possible is essential toward transitioning away combustion in our homes.

Sincerely,

Julia May  
 Communities for a Better Environment (CBE)

**Response to Comment Letter #69:***Response to Comment 69-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #70: CLIMATE ACTION CAMPAIGN**

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 December 13, 2024  
 Via Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

70-1

On behalf of Climate Action Campaign, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Air pollution remains a significant threat in the South Coast region, where the dense population and high levels of industrial activity combine to create some of the worst air quality in the nation. The region frequently fails to meet federal and state air quality standards for pollutants like nitrogen oxides (NOx) and particulate matter (PM), both of which are harmful to public health. Appliance pollution, particularly from gas-fired furnaces, water heaters, and stoves, is a major contributor to these emissions. By transitioning to zero-emissions technologies, we can dramatically reduce harmful pollutants that cause respiratory issues, heart disease, and other chronic health conditions. The impacts of appliance pollution are felt most acutely by vulnerable populations, including low-income communities and communities of color, who disproportionately live near sources of pollution and experience higher rates of asthma, lung disease, and other related illnesses. Strengthening the proposed amendments to Rules 1111 and 1121 will ensure that we take meaningful steps to protect public health and achieve the necessary air quality improvements.

We are pleased to see the South Coast AQMD's Go Zero program take form. These

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.



70-1

incentives will help hasten the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a five-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

David Martinez  
Orange County Climate Equity Advocate and Organizer  
Climate Action Campaign

### **Response to Comment Letter #70:**

*Response to Comment 70-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #71: CENTER FOR COMMUNITY ACTION AND ENVIRONMENTAL JUSTICE (CCAIEJ)

CENTER FOR COMMUNITY ACTION AND ENVIRONMENTAL JUSTICE  
 "Bringing People Together to Improve Our Social and Natural Environment"

December 13, 2024

Mr. Krause and Ms. Farr  
 South Coast Air Quality Management District (South Coast AQMD)  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

RE: Support for Proposed Amended Rules 1111 and 1121

Dear Mr. Krause and Ms. Farr:

I am writing on behalf of the Center for Community Action and Environmental Justice (CCAIEJ) to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

As an organization which works in communities facing some of the worst air quality in the nation, CCAIEJ is strongly in support of these efforts to address the largest single source of pollution in the region. These rules will be instrumental to clearing the air and saving lives and we look forward to seeing families, friends, and neighbors living fuller lives for longer.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure the full \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,



Marven E. Norman, MPA  
 Policy Coordinator

CCAIEJ is a long-standing community based organization with over 40 years of experience advocating for stronger regulations through strategic campaigns and building a base of community power. Most notably, CCAIEJ's founder Penny Newman won a landmark federal case against Stringfellow Construction which resulted in the "Stringfellow Acid Pits" being declared one of the first Superfund sites in the nation. CCAIEJ prioritizes community voices as we continue our grassroots efforts to bring lasting environmental justice to the Inland Valley Region.

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

Mailing Address  
 PO Box 33124  
 Jurupa Valley, CA 92519  
[www.ccae.org](http://www.ccae.org)

**Response to Comment Letter #71:***Response to Comment 71-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #72: GLENDALE ENVIRONMENTAL COALITION**

December 12, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov), [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

72-1

The Glendale Environmental Coalition supports the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. It is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NO<sub>x</sub> reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We strongly urge staff to reject efforts to delay compliance, or create loopholes that reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Preventing the installation of new gas-powered equipment in the basin is a crucial step in transitioning from a gas-based economy to one that is sustainable and that supports a livable future. Adding new equipment that emits nitrogen oxides and other harmful air pollutants is counterproductive and incompatible with the SCAQMD's goals of achieving meaningful emissions reductions.

We support the SCAQMD's Go Zero Program, and urge the Board to issue a resolution providing for \$100 million to go toward these incentives. And, we urge the SCAQMD to wrap up the rulemaking process as soon as possible to allow the work of transitioning away from combustion in our homes to proceed!

Sincerely,

Elise Kalfayan, Board Member  
Glendale Environmental Coalition

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

**Response to Comment Letter #72:***Response to Comment 72-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #73: LEAGUE OF WOMEN VOTES OF LOS ANGELES COUNTY**

An Inter-League organization: Beach Cities • East San Gabriel Valley • Long Beach Area • Greater Los Angeles  
Mt. Baldy Area • Palos Verdes Peninsula/San Pedro • Pasadena Area • Santa Monica • Torrance Area • Whittier

10011 Melgar Drive, Whittier, CA 90603

December 13, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

73-1

On behalf of the League of Women Voters of Los Angeles County, I am writing to express support for the South Coast AQMD's efforts to reduce appliance pollution through amending Rules 1111 and 1121. These proposed amendments represent a historic opportunity to achieve critical emissions reductions in alignment with the 2022 Air Quality Management Plan (AQMP), which concluded that "[t]he only way to achieve the required NOx reductions is through extensive use of zero-emission technologies across all stationary and mobile sources." In a region facing severe pollution, these health and environmental benefits are urgently needed by millions of residents.

The League of Women Voters has long supported policies and actions promoting the electrification of appliances and vehicles to meet the California Renewable Portfolio Standards. Specifically, the League's **Climate Action Policy** advocates for:

- Mandating all-electric appliances in new construction for homes, offices, and commercial properties;
- Retrofits of municipal and county buildings to rely exclusively on renewable energy; and
- Incentives to retrofit private structures for renewable energy supply and energy efficiency.

We appreciate the inclusion of the Go Zero program, which aligns with these goals. Increasing its funding from \$21 million to \$100 million is critical to support an equitable and timely transition away from combustion in buildings. We urge the Governing Board to endorse this commitment via resolution to ensure its realization.

We are deeply concerned, however, about efforts to weaken the proposal through delayed compliance deadlines and loopholes. To meet the region's health and climate goals, it is vital that Rules 1111 and 1121 go to the Governing Board in February 2025 in their strongest form, without compromises that undermine their efficacy.

*The League of Women Voters, a nonpartisan political organization, encourages informed and active participation in government, works to increase understanding of major public policy issues, and influences public policy through education and advocacy.*

73-1

Finally, we urge South Coast AQMD to prioritize equity in implementation, ensuring that low-income and underserved communities can access the benefits of cleaner air and improved infrastructure.

We commend AQMD staff for their diligent work on these amendments and encourage swift action to finalize this process. A clear and decisive timeline for rulemaking and implementation will be critical to accelerating the transition to zero-emission technologies.

Respectfully,



Margo A. Reeg  
President  
League of Women Voters of Los Angeles County  
10011 Melgar Drive  
Whittier, CA, 90603  
Email: margolwv@gmail.com

*The League of Women Voters, a nonpartisan political organization, encourages informed and active participation in government, works to increase understanding of major public policy issues, and influences public policy through education and advocacy.*

**Response to Comment Letter #73:***Response to Comment 73-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.



**COMMENT LETTER #84: WEST LONG BEACH ASSOCIATION**

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765

Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

74-1

On behalf of West Long Beach Association, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The time is now to put human beings lives first by removing all sources of negative health impacts instated of profit margins. Industry must no longer be able to hide industries murderous deeds with in weak rules. At some point the board becomes complicit in industries action. Study after study shows the harm NOx is doing to communities and yet you are reluctant to move forward with the resolve to move forward to save human lives. Your own reports have shown the results of NOx pollution are catastrophic, people are dying as a result. The fact is more people are dying from pollution in Los Angeles county than the homicide rate per year in any of the past five years. These reports and other are not read and file, but to read, file and take the accurate action to eliminate their soure or sources of pollution.

[We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our

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<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.

74-1

buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of transitioning away from combustion in our homes.

Sincerely,

Theral Golden  
Treasurer  
West Long Beach Association]

#### **Response to Comment Letter #74:**

##### *Response to Comment 74-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #75: DEL AMO ACTION COMMITTEE



Staff  
Cynthia Babich  
Director

Board of Directors  
Florence Gharibian  
Board Chair

Jan Kalani  
Board Member  
Homeowner/Resident

Bruce Bansen  
Board Member  
Homeowner/Resident

Cynthia Medina  
Board Member  
Homeowner/Resident

Bryan Castro  
Board Member

Emeritus Board  
Lizabeth Blanco  
Homeowner/Resident

In Memoriam  
Nick Blanco  
Homeowner/Resident

Barbara Stockwell  
Homeowner

Brenda Bibee  
Board Member

Valerie Medina  
Board Member  
Resident

Lydia Valdez  
Board Member  
Homeowner/Resident

December 13, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

On behalf of Del Amo Action Committee we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that the only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources. Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

Times have changed and protections must change to meet the needed protections.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,  
Cynthia Babich  
Director  
Del Amo Action Committee

75-1

967 Torrance Blvd., Torrance, California 90502  
P. O. Box 549, Rosamond, California 93560  
Office: 661-256-7144 Cell: 310-769-4813

**Response to Comment Letter #75:***Response to Comment 75-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #76: CENTER FOR BIOLOGICAL DIVERSITY**

CENTER for BIOLOGICAL DIVERSITY

*Because life is good.*December 13<sup>th</sup>, 2024*Sent via email*

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

76-1

The Center for Biological Diversity supports the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.7 million members and online activists throughout California and the United States. The Center and its members have worked for many years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life in Contra Costa County and the surrounding region.

Air quality is a significant environmental and public health concern in California. Unhealthy, polluted air contributes to and exacerbates many diseases and increases mortality rates. The U.S. government has estimated that between 10 to 12 percent of total health costs can be attributed to air pollution. (VCAPCD 2003.) Greenhouse gases, such as the air pollutant carbon dioxide, which is released by fossil fuel combustion, contribute directly to human-induced climate change (EPA 2016), and in a positive feedback loop, poor air quality that contributes to climate change will in turn worsen the impacts of climate change and attendant air pollution. (BAAQMD 2016.)

Air pollution and its impacts are felt most heavily by young children, the elderly,

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.



76-1

pregnant women and people with existing heart and lung disease. People living in poverty are also more susceptible to air pollution as they are less able to relocate to less polluted areas, and their homes and places of work are more likely to be located near sources of pollution, such as freeways or ports, as these areas are more affordable. (ALA 2022.) Some of the nation's most polluted counties are in Southern California, and San Bernadino County continually tops the list. (ALA 2022.) According to the American Lung Association's 2022 "State of the Air" report, San Bernadino County is the ninth-worst ranked county in the state for both ozone pollution and year-round particulate matter (PM2.5) pollution, with a "Fail" grade and an average number of 180 days per year with ozone levels in the unhealthy range. (Id.)

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in reducing combustion-related pollution in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,



Elizabeth Reid-Wainscoat  
Campaigner  
Center for Biological Diversity  
[ereidwainscoat@biologicaldiversity.org](mailto:ereidwainscoat@biologicaldiversity.org)

## Response to Comment Letter #76:

### *Response to Comment 76-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #77: HEALING AND JUSTICE CENTER**



Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: [mkrause@aqmd.gov](mailto:mkrause@aqmd.gov); [hfarr@aqmd.gov](mailto:hfarr@aqmd.gov)

**RE: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

77-1

On behalf of **Healing and Justice Center**, we write to support the South Coast AQMD's efforts to clean up appliance pollution through amending Rules 1111 and 1121. This proposed regulatory package will achieve more emissions reductions than any other effort passed in over three decades. The effort is also consistent with the 2022 Air Quality Management Plan (AQMP), which determined that "[t]he only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources."<sup>1</sup> Given the serious pollution in this region, these health gains from advancing zero-emissions are desperately needed for millions of people. We are deeply concerned that the proposal is getting weakened through delaying compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy of the rule. It is vital that these rules go to the Governing Board in a strong form and be adopted in February.

The Healing and Justice Center (HJC) is a worker self-directed nonprofit dedicated to fostering collective healing and justice for BIPOC (Black, Indigenous, and People of Color) individuals, communities, and organizations. Our mission is to create safe, connected spaces where community members can access healing-centered strategies that address the physical, mental, and emotional impacts of systemic oppression. Our advocacy efforts focus on dismantling cycles of trauma and burnout through transformative healing justice models. We believe that sustainable social justice requires holistic practices that uplift communities from survival to thriving.

HJC recognizes the clear and vital intersection between environmental justice, housing stability, and the health and well-being of community residents. Pollution in residential areas disproportionately impacts vulnerable communities, often exacerbating health disparities for those already affected by housing insecurity. Our organization is deeply committed to supporting

<sup>1</sup> South Coast AQMD, 2022 AQMP, at Executive Summary.  
[Info@HealingAndJusticeCenter.org](mailto:Info@HealingAndJusticeCenter.org) | [www.HealingAndJusticeCenter.org](http://www.HealingAndJusticeCenter.org)



77-1

policy changes that reduce environmental burdens on communities of color, ensure safe and healthy housing, and promote the overall well-being of residents. The proposed amendments to South Coast AQMD Rules 1111 and 1121 present an essential opportunity to reduce pollution at its source and ensure that all residents, particularly those in historically underserved neighborhoods, have access to healthier living environments. The adoption of these rules in their strongest form would support our shared vision of healthy, resilient, and just communities where every person can thrive.

We remain pleased to see the South Coast AQMD's Go Zero program take form. These incentives will be really helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital the Board endorse this commitment via resolution to ensure \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121. Wrapping up this rulemaking process as soon as possible is vital, so we can work on the important aspects of actually transitioning away from combustion in our homes.

Sincerely,

*Jorge Rivera*  
Jorge Rivera  
Executive Co-Director  
Healing and Justice Center





**Response to Comment Letter #77:***Response to Comment 77-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #78: CENTER FOR PROGRESSIVE REFORM**

December 13, 2024

Mr. Krause and Ms. Farr  
South Coast Air Quality Management District (South Coast AQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765

**Re: Support for Proposed Amended Rules 1111 and 1121**

Dear Mr. Krause and Ms. Farr:

78-1

My name is Catalina Gonzalez. I am a Los Angeles County resident and a Senior Policy Analyst at the Center for Progressive Reform; we are a nonprofit research and advocacy organization guided by a network of legal scholars and staff with expertise in governance and regulation. On behalf of the Center, I am writing to express our support for the South Coast AQMD's efforts to reduce appliance pollution and, in particular, for amending Rule 1111 and 1121. This proposed regulatory package is consistent with the 2022 Air Quality Management Plan (AQMP) and will achieve more emissions reductions than any other effort passed in over three decades.

On a daily basis, a population of approximately 17 million residents in the South Coast Air Basin are exposed to the most polluted air in the nation, with the highest rankings of smog and particulate matter. This pollution disproportionately impacts environmental justice communities who are primarily low-income communities of color and children. Adopting and implementing standards or zero-NOx water heaters and furnaces under Rules 1111 and 1121 is the next critical step that is needed to begin the process of reducing pollution that will bring health and air quality benefits to millions in the South Coast Air Basin.

We are deeply concerned that the proposal is getting weakened due to delays in compliance deadlines and many loopholes. We encourage staff to reject these efforts to reduce the efficacy

78-1

of the rule. It is vital that the strongest possible version of these rules go to the Governing Board and be adopted in February.

We believe a combination of policy tools and strategies will be needed to achieve the level of pollution and emission reductions needed to protect public health, and we are pleased to see the South Coast AQMD's Go Zero program take form. In combination with zero-Nox standards, these incentives will be helpful in hastening the transition away from combustion in our buildings. It is our understanding that the South Coast AQMD's Executive Officer has committed to a 5-fold increase in the \$21 million allocated to this program. It is vital that the Board endorse this commitment via resolution to ensure that \$100 million goes towards these incentives.

We appreciate AQMD staff's significant work on these proposed amendments to Rules 1111 and 1121 and urge AQMD to adopt and implement strong rules without delay.

Sincerely,

Catalina Gonzalez  
Senior Policy Analyst  
Center for Progressive Reform

### **Response to Comment Letter #78:**

#### *Response to Comment 78-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

## COMMENT LETTER #79: LAKE ELSINORE CITY COUNCIL



December 13, 2024

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Re: Opposition to Amendments to Rules 1111 and 1121 Banning Natural Gas as an Energy Option

Dear Coalition Members,

79-1

On behalf of the Lake Elsinore City Council, I am writing to express our *opposition* to the proposed amendments to Rules 1111 and 1121, which would effectively ban natural gas as an energy option. While we recognize and appreciate California's ambitious efforts to combat climate change, including initiatives similar to Senate Bill 100 (2018), removing natural gas from the energy mix is neither practical nor sustainable at this time. Such a policy would have far-reaching consequences, including significantly higher electricity costs for residents and businesses across the state.

The proposed requirement to replace old furnaces and water heaters exclusively with zero-emission alternatives by 2030 presents significant challenges. Natural gas remains a critical component of California's energy landscape, with consumption far exceeding that of other energy resources and renewables. Mandating such a shift would impose undue financial burdens on homeowners and businesses, particularly during emergency repairs to restore essential services like hot water or heating.

Even with proposed incentives, the funding caps would leave a substantial gap between the actual costs and available assistance, disproportionately affecting vulnerable populations, including seniors, low-income families, and small businesses.

In Lake Elsinore, where approximately 11% of our population lives below the poverty line, these policies could result in many residents going without hot water or adequate heating and cooling, particularly during extreme weather conditions. This would seriously harm their quality of life, health, and safety. Moreover, the limited funding for end-user incentives, supply chain issues, and delays in electric equipment availability present further challenges. We also note that the Southern California Gas Company, a leading provider of natural gas in the state, actively supports California's efforts to meet federal air quality standards, decarbonization goals, and net-zero targets.

951.674.3124

130 S. MAIN STREET

LAKE ELSINORE, CA 92530

WWW.LAKE-ELSINORE.ORG

SCAQMD


- 2 -

December 13, 2024

79-1

They are working on innovative solutions to deliver clean, reliable, and affordable energy to residents and businesses. In light of these concerns, we urge you to reconsider the amendments to Rules 1111 and 1121. Policies that force an abrupt transition away from natural gas without addressing the associated costs, infrastructure challenges, and equity impacts will create significant hardships for our community and beyond. Thank you for your consideration.

Sincerely,



Brian Tisdale, Mayor  
City of Lake Elsinore

- cc: Bob McGee, Mayor Pro Tem
- Natasha Johnson, Council Member
- Timothy J. Sheridan, Council Member
- Jason Simpson, City Manager
- Barbara Leibold, City Attorney

951.674.3124  
130 S. MAIN STREET  
LAKE ELSINORE, CA 92530  
WWW.LAKE-ELSINORE.ORG

**Response to Comment Letter #79:***Response to Comment 79-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

For information regarding sustainability of utility demands, please refer to Response to General Comment 3. For information regarding cost and affordability, please refer to Response to General Comment 2. For the need for rule amendments, please refer to Response to General Comment 10.

**COMMENT LETTER #80: ORANGE COUNTY BUSINESS COUNCIL (OCBC)**



2 Park Plaza, Suite 100, Irvine, CA 92614 | P 949.476.2242 | F 949.476.0443 | www.ocbc.org

December 18, 2024

South Coast Air Quality Management District Governing Board  
21865 Copley Drive  
Diamond Bar, CA 91765

**Re: OCBC’s Oppositon to Proposed Amended Rules 1111 & 1121**

Dear SCAQMD Board Members:

Orange County Business Council (OCBC), the leading voice of business in Orange County, is writing today to express our strong opposition to Proposed Amended Rules (PAR) 1111 & 1121, and respectfully request that the South Coast Air Quality Management District (SCAQMD) reconsider these burdensome and consequential amendments.

OCBC has long supported sustainable public and private infrastructure that protects public health, facilitates a well- educated public and workforce, and supports a robust economy – all while providing for reliable natural gas and electric transmission, distribution, and storage systems. Further, OCBC fully supports sufficient “green” and open space infrastructure projects that promote quality of life. However, considering what data and information is currently available, we have serious concerns regarding the potential implementation of PARs 1111 & 1121. The overall impact these PARs would have are costly and detrimental to businesses and residents throughout the district.

If these PARs are adopted in their current form, it could have a significantly negative impact on the housing market. This is already a point of contention for Orange County’s resident workforce. Mandating building owners to refurbish their facilities to be in compliance with these regulations, especially when done at scale, will cost owners an excessive amount in costs – which will undoubtedly be passed down to renters. This comes at a time in which the cost of living is at an all-time high across the region.

80-1

These PARs will also have a significant impact on the hospitality industry – which is one of Orange County’s most vibrant and diverse economic sectors. Many in the hospitality industry are still recovering from losses that were experienced during the lockdowns related to the COVID-19 pandemic. Adding expansive regulatory burdens, just a few years removed from the pandemic, could prove to be detrimental to a major sector of our local economy that is still recovering.

80-2

OCBC is strongly opposed to these burdensome and costly proposed amended rules and encourages you to reconsider in the interest of the region’s economic well-being which we are all dependent upon. We will always support a comprehensive approach, with inclusive dialogue, to address the state’s infrastructure needs. We will continue to work with government entities, such as SCAQMD, to ensure that the voice of Orange County’s business community is engaged when discussing comprehensive infrastructure improvements – such as those being considered through PARs 1111 & 1121. Thank you for your time and consideration on this matter.

Sincerely,

Jeffrey Ball  
President/CEO

THE LEADING VOICE OF BUSINESS IN ORANGE COUNTY

**Response to Comment Letter #80:***Response to Comment 80-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

The new rule concept also revised the proposed applicability and will not expand to larger size spacing heating appliances typically installed at commercial facilities. The revised PAR 1111 and PAR 1121 will be applicable to residential-sized appliances and will have minimal impact to commercial and industrial properties.

For information regarding cost and affordability, please refer to Response to General Comment 2.

*Response to Comment 80-2:*

Please see above Response to Comment 80-1. In addition, space and water heating in hospitals are unlikely subject to PAR 1111 and PAR 1121. Instead, they may be subject to Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters which was adopted in June 2024 for zero-emission standards. Please refer to the Rule 1146.2 Public Hearing documents which include a staff report and socioeconomic impact assessment which contains an analysis related to costs.<sup>(27)</sup>

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<sup>(27)</sup> <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2024/2024-Jun7-026.pdf?sfvrsn=6>



**COMMENT LETTER #81: HENRY ROGERS**

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Wednesday, December 18, 2024 4:27 PM  
**To:** Peter Campbell <[REDACTED]>  
**Subject:** Contact Form

**Contact Form**

**Name:** Henry Rogers

**Email:** [REDACTED]

**Phone:** [REDACTED]

**Message:**

**Re: Opposition to Proposed Amended Rules 1111 and 1121** Dear Honorable Committee Members: On behalf of the Harbor Association of Industry & Commerce (HAIC), I am writing to express our opposition to Proposed Amended Rules (PARs) 1111 and 1121, which would set NOx emissions limits at zero for residential and commercial space heating and residential water heating appliances. While HAIC supports efforts to improve air quality and reduce emissions, we have significant concerns about the potential impacts of these proposed amendments on our members and the broader community: 1. Cost Burden: The proposed rules would impose substantial costs on residents and businesses for appliance replacements and electrical upgrades. Many may struggle to afford these changes, particularly in disadvantaged communities. 2. Feasibility Concerns: The timeline for implementation may not allow sufficient time for the market to develop affordable and reliable zero-emission alternatives, potentially leading to supply chain issues and increased costs. 3. Grid Reliability: A rapid shift to all-electric appliances could strain the electrical grid, potentially compromising reliability and resilience. 4. Limited Alternatives: By effectively banning natural gas appliances, the rules may eliminate viable low-emission options, such as ultra-low NOx gas technologies or hydrogen-enriched systems. 5. Economic Impact: The rules could negatively impact businesses in our region, including those involved in natural gas distribution and appliance manufacturing/servicing. 6. Inadequate Cost-Effectiveness Analysis: We believe the cost-effectiveness calculations presented by SCAQMD staff require further scrutiny and transparency. We respectfully request that the Committee consider the following recommendations: 1. Extend the implementation timeline to allow for a more gradual transition. 2. Conduct a comprehensive economic impact study, including effects on low-income households and small businesses. 3. Explore a technology-neutral approach that allows for multiple pathways to emissions reduction. 4. Enhance incentive programs to assist with the costs of compliance. 5. Conduct additional public outreach to ensure all affected

- 81-1
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- 81-10
- 81-11

parties are fully informed. HAIC appreciates the opportunity to provide input on this important matter. We remain committed to working collaboratively with SCAQMD to achieve our shared goals of improved air quality and a thriving regional economy. Thank you for your consideration. Sincerely, Henry Rogers Executive Director Harbor Association of Industry & Commerce 81-11

### **Response to Comment Letter #81:**

#### *Response to Comment 81-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For information regarding cost and affordability, please refer to Response to General Comment 2.

#### *Response to Comment 81-2:*

Please refer to Response to General Comment 4 for information regarding technology readiness.

#### *Response to Comment 81-3:*

Please refer to Response to General Comment 3 for information regarding electricity demand and grid sustainability.

#### *Response to Comment 81-4:*

As mentioned in Chapter 2 of this report, Rule 1111 and Rule 1121 are fuel and technology neutral, meaning any technology that can meet the emission limits is compliant with the rules. With the new rule concept, consumers will be able to choose either zero-emission appliance options or NOx-emitting natural gas-fired appliance options in the market. Please refer to Response to General Comment 1 for consumer choice.

#### *Response to Comment 81-5:*

Staff is preparing a Draft Socioeconomic Impact Assessment which will be released for public review and comment at least 30 days prior to the Public Hearing for PAR 1111 and PAR 1121 scheduled for 2025. The analysis will consider impact on employment and the regional economy.

#### *Response to Comment 81-6:*

Please refer to General Response to Comment 6 for information regarding the cost-effectiveness analysis.

#### *Response to Comment 81-7:*

Please see Response to General Comment 10 for the need for rule amendment.

#### *Response to Comment 81-8:*

Please see Response to Comment 81-5 relative to the Socioeconomic Impact Assessment, and Response to General Comment 2 relative to cost and affordability.

*Response to Comment 81-9:*

Please refer to Response to Comment 81-7.

*Response to Comment 81-10:*

Staff anticipates launching the Go Zero program in 2025 with the opportunity to expand the program in future phases.

*Response to Comment 81-11:*

For information regarding outreach, please refer to Response to General Comment 5.

**COMMENT LETTER #82: HARBOR ASSOCIATION OF INDUSTRY AND COMMERCE**



December 18, 2024

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

RE: Comments on Proposed Amended Rules 1111 and 1121

To the Members of the Governing Board:

The Harbor Association of Industry and Commerce (HAIC), representing industrial, maritime, and commercial businesses in the Los Angeles Harbor Area, writes to express significant concerns regarding Proposed Amended Rules 1111 and 1121.

Our primary concerns include:

**Cost and Implementation**

- Substantial replacement costs ranging from \$18,500-\$21,500 for space heaters and \$5,200-\$8,200 for water heaters
- Significant electrical infrastructure upgrades required for many industrial and commercial properties
- Timeline starting in 2026 poses challenges for capital planning and budgeting
- Current supply chain constraints and workforce limitations could impede compliance

82-1

**Industrial Impact**

- Many of our members operate large facilities requiring multiple unit replacements
- Electrical capacity concerns for industrial properties
- Operational disruptions during transitions
- Potential impacts on manufacturing processes

82-2

**Economic Analysis Concerns**

- Cost-effectiveness analysis needs further evaluation for industrial applications
- Infrastructure readiness requires additional study
- Grid capacity assessment needed for industrial areas
- Workforce development considerations for installation and maintenance

82-3

Recommendations:

Harbor Association of Industry and Commerce  
6475 E. Pacific Coast Hwy. #400 Long Beach, CA 90803  
www.harborassn.com

1. Extend implementation timeline to allow proper infrastructure planning
2. Conduct additional analysis of industrial sector impacts
3. Consider alternative compliance pathways for industrial facilities
4. Develop transition assistance programs
5. Address grid capacity concerns

82-4

While HAIC supports efforts to improve air quality in our region, we believe these rules as proposed would create significant operational and financial challenges for our industrial and maritime businesses. We urge you to address these concerns before proceeding with rule adoption.

Sincerely,



Henry Rogers  
Executive Director  
Harbor Association of Industry and Commerce

**Response to Comment Letter #82:***Response to Comment 82-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

PAR 1111 and PAR 1121 apply at the unit natural turnover when a replacement unit must be installed, often at unit breakdown. The zero emission standards with manufacturer sales targets will start in 2027.

For information regarding cost and affordability, please refer to Response to General Comment 2. For information regarding electricity demand and grid sustainability, please refer to Response to General Comment 3.

*Response to Comment 82-2:*

The new rule concept also revised the proposed applicability and will not expand to larger size spacing heating units. PAR 1111 and PAR 1121 will be applicable to residential-sized appliances less likely to be installed in industrial settings.

*Response to Comment 82-3:*

For more information regarding the cost-effectiveness analysis, please refer to Response to General Comment 6. Please also see above Responses to Appendix C Comments 82-1 and 82-2.

*Response to Comment 82-4:*

Staff appreciates the recommendations and will take recommendations into consideration.

## COMMENT LETTER #83: LA VERNE CITY COUNCIL



## CITY OF LA VERNE CITY HALL

3660 "D" Street, La Verne, California 91750-3599  
www.cityoflaverne.org

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: mkrause@aqmd.gov; hfarr@aqmd.gov

Subject: Opposition to Amendments to Rules 1111 and 1121 Banning Natural Gas Appliances

Dear Mr. Krause and Ms. Farr,

On behalf of the La Verne City Council, I am writing to express our strong opposition to the proposed amendments to Rules 1111 and 1121, which mandate zero-emission requirements for residential and commercial space and water heating appliances. While we share SCAQMD's commitment to improving air quality, these amendments pose significant challenges and unintended consequences for our community. 83-1

The proposed rules impose prohibitively high replacement costs for appliances, which could range from \$3,000 to \$21,500 per unit when factoring in necessary electrical panel upgrades. These expenses are especially burdensome for lower-income households and small businesses already struggling with significant financial pressures. Although incentive programs like Go Zero provide some relief, they are rebate-based, requiring low-income households to cover the unreasonable upfront costs before reimbursement. Furthermore, with future funding for such incentives being limited and uncertain, the financial strain on affected households and businesses becomes a lasting issue. These requirements risk deepening existing economic inequities within our community, leaving those most vulnerable to bear a disproportionate burden. 83-2

Furthermore, transitioning to electric appliances will increase electricity demand, potentially straining the energy grid and leading to higher utility costs for residents and businesses. Without adequate financial assistance or incentives, compliance with these requirements will be unattainable for many, creating further disparities.

Although we recognize the environmental objectives of these amendments, there has been insufficient consideration of financial assistance programs or incentives to mitigate the transition costs. Without robust subsidies or rebates, the proposed rules risk alienating the very communities they aim to support and protect.

While we appreciate the intent of these amendments, the proposed rules in their current form are impractical, inequitable, and economically burdensome. We strongly urge SCAQMD to reevaluate the proposals and collaborate with local governments, businesses, and residents to develop more balanced, inclusive solutions that achieve air quality improvements without disproportionate harm to vulnerable populations.

Sincerely,

Tim Hepburn  
Mayor

General Administration 909/596-8726 • Water Customer Service 909/596-8744 • Community Services 909/596-8700  
Public Works 909/596-8741 • Finance 909/596-8716 • Community Development 909/596-8706 • Building 909/596-8713  
Police Department 909/596-1913 • Fire Department 909/596-5991 • General Fax 909/596-8737

**Response to Comment Letter #83:***Response to Comment 83-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For information regarding affordability and costs, please refer to Response to General Comment 2.

*Response to Comment 83-2:*

Please refer to Response to General Comment 3 regarding electricity demand and grid reliability.



COMMENT LETTER #84: EARTHJUSTICE, ACTIVESGV, ET AL.



VIA ELECTRONIC MAIL

December 18, 2024

Chair McCallon and Members of the Stationary Source Committee  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765  
 Email: [lmccallon@cityofhighland.org](mailto:lmccallon@cityofhighland.org)  
 Clerk of the Board, [clerkofboard@aqmd.gov](mailto:clerkofboard@aqmd.gov)

**Re: Agenda Item Nos. 1 & 2 - Support for Amendments to Rules 1111 and 1121;  
 Opposition to Additional Delays in Rule Adoption**

Dear Chair McCallon and members of the Stationary Source Committee:

84-1

On behalf of the undersigned, we submit this letter in strong support of the proposed amendments to Rules 1111 and 1121. These amendments are vital to reducing harmful air pollution from residential and commercial appliances in buildings and advancing the goal of achieving zero emissions across sectors. We are disappointed to see additional delays proposed in bringing these amendments to the Governing Board. In the most recent round of comments that ended on December 13, there was overwhelming support for the proposed rules ranging from the American Lung Association to League of Women Voters Los Angeles to California Enviro Voters to Jobs to Move America, amongst many others. More than 86% of the comments filed in this most recent comment period supported the rules. We urge you to stay the course and move these Zero-NOx standards to a vote in February for the following key reasons:

December 18, 2024

Page 2 of 3

84-1

- **These Rule Amendments Protect Public Health.** The early gains in reducing ozone pollution over the past three decades have stagnated recently, and our region still fails to meet any federal ozone standards. This year, the South Coast Air Basin missed yet another deadline for ozone levels—set during the Clinton Administration—continuing a disturbing trend of non-compliance. This regulatory package is designed to significantly reduce Nitrogen Oxide (NOx), a key contributor to ozone pollution, more than any other initiative in over thirty years. In fact, this is the largest emission-reducing regulatory package in over three decades. By eliminating emissions from these appliances over time, we could save billions of dollars in healthcare costs and prevent 76,000 asthma attacks, 30,000 school absences, and 130 premature deaths each year.<sup>1</sup>
- **The Rule Amendments are Reasonable.** The Zero-NOx standards are not new; they are the result of years of work. The Air District incorporated this control measure into its 2022 Air Quality Management Plan (AQMP). The rulemaking process for these proposed amendments took over 14 months and included seven working group meetings, a public workshop, and numerous discussions with stakeholders, including building owners, manufacturers, environmental groups, and energy providers. While we have concerns about a compliance delay to 2029 and the exceptions included in the rule package, we believe that these rules are overdue for the Board's adoption. Any further delay in rule adoption, even by a few months, is simply unjustified.
- **Delaying Adoption could Lock in Pollution for Decades.** We urge the Committee to reject any further delays in implementation. Already, the current proposal pushes implementation to 2029. Even by a small amount, delaying the implementation of zero-NOx standards further will have significant long-term consequences for public health and air quality. Furnaces and water heaters typically last 15-20 years. Thus, each delay means another generation of NOx-emitting appliances will be sold and installed in our region. Five months ago, the Board Chair Delgado declared that the agency would "[r]eview where accelerated reductions could be possible, including through rulemaking to achieve emission reductions on a more accelerated timeline than identified in the 2022 AQMP."<sup>2</sup> That opportunity is here. We trust that you will deliver on that promise.

The passage of the rule amendments means we can focus on attracting more resources for the region for this transition through the Go Zero program. We urge you to support the Executive Officer's commitment to increase the fund fivefold, guaranteeing that at least \$100 million is allocated towards these incentives.

We appreciate your leadership and commitment to reducing air pollution and stand ready to support the adoption and implementation of these critical amendments.

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<sup>1</sup> Coalition for Clean Air and RMI, *Southern California's Hidden Air Pollution Problem: Gas Furnaces & Water Heaters* (December 2024); <https://www.ccair.org/wp-content/uploads/2024/12/South-Coast-Brief.pdf>

<sup>2</sup> South Coast Air Quality Management District, Letter of Commitment, July 22, 2024; [https://www.aqmd.gov/docs/default-source/clean-air-plans/aqmd-commitment-letter\\_7-16-24.pdf?sfvrsn=22](https://www.aqmd.gov/docs/default-source/clean-air-plans/aqmd-commitment-letter_7-16-24.pdf?sfvrsn=22)

December 18, 2024

Page 3 of 3

Sincerely,

Fernando Gaytan, Senior Attorney, Earthjustice

David Diaz, Executive Director, Active San Gabriel Valley

Jane Williams, Executive Director, California Communities Against Toxics

Robina Suwol, Executive Director, California Safe Schools

Christopher Chavez, Deputy Policy Director, Coalition for Clean Air

Elizabeth Reid-Wainscoat, Urban Wildlands Campaigner, Center for Biological Diversity

Ana Gonzalez, Executive Director, Center for Community Action & Environmental Justice

Lisa Swanson, Policy Chair, Climate Reality Project Orange County Chapter

Laura Gracia-Santiago, Legal Advocate, Communities for a Better Environment

Charles Miller, Chapter Chair, Los Angeles Climate Reality Project

Eli Lipmen, Executive Director, MoveLA

Hilary Firestone, Director, Western Climate & Energy, Natural Resources Defense Council

Cristhian Tapia-Delgado, Climate Campaigner, Southern California, Pacific Environment

Sharon Ungersma, Chapter Chair, San Fernando Valley Climate Reality Project

Kimberly Orbe, Senior Conservation Program Manager, Sierra Club

Anne Pernick, Senior Advisor, SAFE Cities at Stand.earth

Sam Fishman, Sustainability and Resilience Policy Manager, SPUR

Ben Stapleton, Executive Director, USGBC California

Cc: Wayne Nastri, Executive Officer- South Coast Air Quality Management District

Email: [WNastri@aqmd.gov](mailto:WNastri@aqmd.gov)

Michael Krause, Assistant Deputy Executive Officer - Planning, Rule Development and Implementation

Email: [MKrause@aqmd.gov](mailto:MKrause@aqmd.gov)

Heather Farr, Manager - NOx, SOx, RECLAIM, Rules 3

Email: [HFarr@aqmd.gov](mailto:HFarr@aqmd.gov)

**Response to Comment Letter #84:***Response to Comment 84-1:*

Staff appreciate the support. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #85: SOUTH BAY ASSOCIATION OF CHAMBERS OF COMMERCE (SBACC)**



December 18, 2024

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

RE: Comments on Proposed Amended Rules 1111 and 1121

To the Members of the Governing Board:

The South Bay Association of Chambers of Commerce (SBACC), representing fifteen chambers of commerce and over 60,000 businesses in the South Bay region, writes to express significant concerns regarding Proposed Amended Rules 1111 and 1121.

After careful review of the proposed amendments, we have identified several critical issues that will significantly impact our business community:

**Financial Impact**

- The estimated replacement costs of \$18,500-\$21,500 for space heaters and \$5,200-\$8,200 for water heaters represent a substantial burden for our businesses
- Many properties will require electrical panel upgrades, adding significant unplanned capital expenses
- These costs will disproportionately affect small businesses and property owners already operating on narrow margins

85-1

**Implementation Concerns**

- The 2026 timeline does not provide adequate time for businesses to plan and budget for these significant investments
- Current supply chain constraints and workforce limitations could create significant compliance challenges
- The electrical infrastructure requirements for widespread adoption need further assessment

85-2

**Economic Analysis**

- The cost-effectiveness analysis appears incomplete, particularly regarding multi-family and commercial properties
- Additional study is needed on the economic impact to renters and small businesses
- Infrastructure readiness and grid capacity concerns require further evaluation

85-3

South Bay Association of Chambers of Commerce  
390 W 7th St, San Pedro, CA 90731  
www.sbacc.com

85-4

We respectfully request that SCAQMD:

1. Extend the implementation timeline to allow for proper planning and financing
2. Conduct additional economic impact analysis
3. Consider alternative compliance pathways
4. Develop incentive programs to assist with transition costs
5. Address infrastructure readiness concerns

While SBACC supports efforts to improve air quality in our region, we believe these rules as currently proposed would create undue hardship for our business community. We urge you to address these concerns before proceeding with rule adoption.

Sincerely,



Kimberly Caceres  
Board President  
South Bay Association of Chambers of Commerce

**Response to Comment Letter #85:**

*Response to Comment 85-1:*

Please refer to Response to Appendix C Comment 82-1.

*Response to Comment 85-2:*

Please refer to Response to Appendix C Comment 82-2.

*Response to Comment 85-3:*

Please refer to Response to Appendix C Comment 82-3.

*Response to Comment 85-4:*

Please refer to Response to Appendix C Comment 82-4.

COMMENT LETTER #86: CITY OF GLENDORA



City of Glendora  
116 E. Foothill Blvd.  
Glendora, CA 91741

December 18, 2024

South Coast Air Quality Management District  
Attn: Stationary Source Committee  
21865 Copley Drive  
Diamond Bar, CA 91765

SUBJECT: OPPOSITION TO PROPOSED AMENDED RULES 1111 AND 1121

Dear Members of the Stationary Source Committee,

On behalf of the City of Glendora, we write to express our opposition to Proposed Amended Rules (PARs) 1111 and 1121, which would establish zero-NOx emissions limits for residential and commercial space heating and residential water heating. While we commend the South Coast Air Quality Management District (SCAQMD) for its commitment to improving air quality in our region, these proposed amendments present significant concerns for our community, including economic hardships, technological feasibility challenges, environmental trade-offs, and a lack of adequate public engagement.

The proposed rules will impose substantial financial burdens on Glendora residents and businesses. Transitioning to electric heat pump technologies—currently the only available zero-NOx option—requires costly appliance replacements, electric panel upgrades, and infrastructure adjustments. Estimates indicate that replacing a natural gas water heater (\$1,700) with a heat pump water heater could cost up to \$80,000 in some cases, depending on necessary upgrades. Similarly, replacing space heating systems ranges from \$27,099 to \$32,099 for homes requiring panel upgrades. These costs will disproportionately affect low-income households, renters, and small businesses that are least able to absorb such expenses.

86-1

The readiness of electric heat pump technology and supporting infrastructure remains a significant barrier. Many homes in Glendora, particularly older ones, lack the electrical capacity to accommodate these appliances without expensive upgrades. Furthermore, the efficiency rates assumed in the SCAQMD’s cost analyses exceed what is achievable with currently available technology. The reliance on overly optimistic assumptions undermines the feasibility and fairness of these proposed rules.

86-2

While we support efforts to reduce NOx emissions, the projected benefits of these rules must be weighed against their costs. The proposed amendments would reduce NOx emissions by only 2.8% in the South Coast Air Basin, while shifting energy demand to the electrical grid, which may still rely on fossil fuel generation. This approach risks undermining the environmental gains by increasing greenhouse gas emissions elsewhere in the energy supply chain. Additionally, the significant upfront costs may delay broader adoption of clean technologies, impeding long-term progress.

86-3







City of Glendora  
116 E. Foothill Blvd.  
Glendora, CA 91741

The City of Glendora is deeply concerned about the limited public awareness and engagement surrounding these rules. Despite multiple workshops, many residents and small business owners remain unaware of the financial and practical implications of these amendments. Moreover, inconsistencies in the data and assumptions used in cost-effectiveness analyses have hindered stakeholders' ability to accurately assess the impacts of the proposed rules. Transparency and outreach must be improved before moving forward.

86-4

The City of Glendora is committed to collaborating with the SCAQMD to advance air quality improvements in a manner that is equitable, cost-effective, and achievable. We urge the committee to reconsider the proposed amendments and adopt a more balanced approach that addresses the concerns of our residents and businesses.

Thank you for your attention to this critical matter.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mendell L. Thompson".

Mendell L. Thompson  
Mayor



**Response to Comment Letter #86:***Response to Comment 86-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Please refer to Response to General Comment 2 for cost and affordability.

*Response to Comment 86-2:*

Please refer to Response to General Comment 4 regarding zero-NOx emission technology readiness. Technologies, such as 120V plug-in heat pump water heaters, can be installed on the existing circuit for the water heater. Additionally, the cost-effectiveness analysis does not use an assumed efficiency rate.

*Response to Comment 86-3:*

Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

*Response to Comment 86-4:*

For information regarding outreach efforts, please refer to Response to General Comment 5.

COMMENT LETTER #87: LONG BEACH CHAMBER OF COMMERCE



The Long Beach Business Organization Since 1891.
CATALYST for business growth | CONVENER of leaders and influencers | CHAMPION for a stronger community.

December 19, 2024

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on Proposed Amended Rules 1111 and 1121

Dear Members of the Governing Board:

On behalf of the Long Beach Area Chamber of Commerce representing approximately 850 businesses. I am writing to express significant concerns regarding Proposed Amended Rules 1111 and 1121.

While we support the SCAQMD's mission to improve air quality, we have serious concerns about the economic impact and feasibility of these proposed amendments:

1. Economic Burden

- Estimated replacement costs of \$18,500-\$21,500 for space heaters and \$5,200-\$8,200 for water heaters present a significant financial burden
- Many businesses and property owners may require electrical panel upgrades, adding substantial costs
- Small businesses operating on thin margins will be particularly impacted

87-1

2. Implementation Timeline

- The proposed 2026 implementation date does not provide adequate time for businesses to plan and budget for these significant investments
- Supply chain and workforce readiness issues need to be addressed
- Infrastructure requirements for widespread electrification need further assessment

87-2

3. Consumer Impact

- Cost increases will likely be passed on to tenants and consumers
- Limited availability of compliant units could create supply shortages
- Many properties will require significant electrical upgrades

87-3

1 World Trade Center, Suite 101. Long Beach, CA 90831 -101
Phone (562) 436-1251 • Fax (562) 436-7099 • info@lbchamber.com
lbchamber.com fb lbchamber thelbchamber longbeachchamber



The Long Beach Business Organization Since 1891.

CATALYST for business growth | CONVENER of leaders and influencers | CHAMPION for a stronger community.

**Recommendations:**

1. Extend the implementation timeline to allow for proper planning and budgeting
2. Consider a phased approach based on building type and size
3. Develop incentive programs to assist with transition costs
4. Conduct additional economic impact analysis on small businesses
5. Allow for alternative compliance pathways

87-4

We request that SCAQMD carefully consider these impacts and work with the business community to develop a more feasible implementation approach that achieves air quality goals while maintaining economic vitality in our region.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeremy Harris".

Jeremy Harris  
President & CEO  
Long Beach Area Chamber of Commerce

1 World Trade Center, Suite 101. Long Beach, CA 90831 -101

Phone (562) 436-1251 • Fax (562) 436-7099 • [info@lbchamber.com](mailto:info@lbchamber.com)

[lbchamber.com](http://lbchamber.com) [lbchamber](https://www.facebook.com/lbchamber) [theLBChamber](https://twitter.com/theLBChamber) [longbeachchamber](https://www.instagram.com/longbeachchamber)

**Response to Comment Letter #87:**

*Response to Comment 87-1:*

Please refer to Response to Appendix C Comment 82-1.

*Response to Comment 87-2:*

Please refer to Response to Appendix C Comment 82-2.

*Response to Comment 87-3:*

Please refer to Response to Appendix C Comment 82-3.

*Response to Comment 87-4:*

Please refer to Response to Appendix C Comment 82-4.

**COMMENT LETTER #88: A.O. SMITH**

December 19, 2024

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, California 91765

**Re: PAR 1121 Public Working Group 7**

To Heather Farr:

A. O. Smith Corporation (“A. O. Smith” or “Company”) appreciates the opportunity to provide comments on the 7<sup>th</sup> Working Group Meeting (“Working Group”) held by South Coast Air Quality Management District’s (“SCAQMD”) December 4, 2024, pertaining to PAR 1111 and 1121: Reduction of NOx Emissions from Natural Gas-Fired Furnaces and Small Water Heaters. The Company’s comments are focused specifically on PAR 1121. The Company appreciates the work that SCAQMD staff has invested into the development of this rule and looks forward to publication of these rule. While the Company is supportive of SCAQMD’s overarching goals to reduce greenhouse gas (“GHG”) emissions in the District, it does have some concerns with the proposed changes to the timing of this rule following feedback on the concepts proposed during the workshop.

**I. About A. O. Smith**

A. O. Smith Corporation, with global headquarters in Milwaukee, Wisconsin since 1874, applies technology and energy-efficient solutions to products manufactured and marketed worldwide with operations in the U.S., Canada, China, India, Mexico, the Netherlands, and the UK. Listed on the New York Stock Exchange (NYSE: AOS), the Company is one of the world’s largest manufacturers of residential and commercial water heating equipment and boilers, as well as a leading manufacturer of water treatment and air purification products. Along with its wholly owned subsidiaries, A. O. Smith is the largest manufacturer and seller of residential and commercial water heating equipment, high efficiency residential and commercial boilers, and pool heaters in North America.

**II. Overview**

On September 20, 2024, after 6 public working group meetings SCAQMD published PAR 1121 draft rule language proposing zero-NOx requirements for small water heaters with compliance dates of 2026

88-1

for new construction and 2027 for retrofits.<sup>1</sup> This draft rule language also provided several exceptions and alternate compliance options to address concerns around: mobile homes, emergency replacements, and retrofits that would require construction. Following the publication of this draft rule language SCAQMD staff gathered more diverse stakeholder feedback on the rule and published the Second PAR 1121 Draft Rule language on November 5, 2024.<sup>2</sup> This second draft rule language maintained the same zero-NOx compliance dates as the initial draft rule language but added in additional compliance pathways for multifamily properties and water heaters for installation or use in existing buildings at High-Altitude. The Second Draft also added in more concrete labeling and record keeping requirements for “Rental Companies”. The Company is supportive the Second Draft rule language.

In the 7<sup>th</sup> public working group meeting, following the publication of the second draft rule language staff stated that they were considering delaying the compliance date for zero- NOx water heaters to 2029. Staff highlighted comments received from stakeholders about installation costs in multifamily properties and concerns raised around the availability of these products in the district. The Company understands the concerns surrounding multifamily properties and the costs that would be incurred if a central HVAC or water heating system would need to be replaced. However, 1121 is only regulating small residential sized water heaters, which have cost effective and commercially available products.

### III. Impacts of the rule on Multifamily

The company acknowledges that Multifamily housing is a more complicated property type to replace gas-fired equipment with electric equipment and has some unique concerns that need to be considered. However, in terms of rule 1121, this property type is limited to properties that utilize in-unit residential water heaters, not larger central domestic hot water plants. This drastically simplifies the cost of a project to be more in-line with a residential retrofit and reduces the need to have large storage tanks and design around an already space limited machine room. In a multifamily building that utilized individual in-unit water heaters there are technology solutions for water heater replacements and their space requirements.

The company does, however, understand that there may be issues with available panel capacity and total electrical service delivered to the building, that may increase the overall installation costs of the project. These costs will not change with an implementation delay of the rule and will need to be addressed in order to make these buildings complaint. SCAQMD staff should ensure that there are adequate compliance pathways to allow both time for the work to be completed to make the building complaint as well as a mechanism for the property owner to spread the cost of the upgrades out and phase in their upgrades without being non-compliant.

<sup>1</sup> <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1121-preliminary-draft-rule-language.pdf>

<sup>2</sup> <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1121-second-preliminary-draft-rule-language.pdf>

The SCAQMD jurisdiction also has a unique design in their multifamily buildings in which the water heater is also used as the heat source for a hydronic heating loop. This could add some additional costs to the project if the zero-emission product needs to be upsized to meet the heating demand as well as the water heating load. The Company would encourage SCAQMD Staff to review the impact of these installation as part of their technology review.

#### A. Installation Costs

On the topic of installation costs, the Company disagrees with the attestation that delaying the rule from 2027 to 2029 will provide a benefit in the installation costs of zero-emissions water heaters. PAR 1121 has been acknowledged by staff as being a leading rule that will drive up the adoption of zero-emission technologies. In the absence of this rule, it is not expected that there will be any noticeable change in the installation costs of these products. There is however risk that a delay in the compliance date of this rule will result in less available rebate funding through the IRA, which has a legislative sunset date of September 20, 2031.<sup>3</sup> It is important to note that the federal IRA fund can, and are expected to, run out ahead of the September 20, 2031, date. Additionally, other rebates that are currently being offered may not be available come a 2029 compliance date. Requiring zero-NOx retrofits after these funds run out will lead to an overall increase in costs to comply with this rule.

#### B. Operating Costs

Deployment of HPWHs in the region is the most cost-effective approach to achieve the air quality standards when compared to other options. In the SCAQMD region water heating accounts for 63% of total household gas usage while space heating only represents 27%.<sup>4</sup> Given the high gas usage and subsequent NOx emissions, water heating should be prioritized as a cost justified control measure, and not be delayed until 2029. Additionally, HPWH's are a guaranteed bill savings compared to heat pumps for space heating. A minimally complaint gas-fired 40-gallon water heater has a UEF of .58, while an average HPWH has a UEF of 3.75, this means that on average a HPWH is 6.5 times more efficient than a gas water heater. With local utility data, local electric rates are \$0.35/kW and gas rates are \$1.6/therm or \$0.055/kW.<sup>5,6,7</sup> Comparing the cost of electricity to gas yields a ratio of 6.4, given that this ratio is lower than the efficiency ratio for a heat pump to a gas water heater, the consumer will have a reduced energy bill regardless of their energy usage.

#### C. Product Availability

<sup>3</sup> 42 USC 18795 (a)(1) and 42 USC 18795 (c)(1)

<sup>4</sup> California Energy Commission. [2019 California Residential Appliance Saturation Study \(RASS\)](#), July 2021 at Figure ES-5.

<sup>5</sup> 1 Therm is equal to 29.307kW

<sup>6</sup> <https://www.cpuc.ca.gov/RateComparison>

<sup>7</sup> <https://fred.stlouisfed.org/series/APUS49A72620>



Concerns have also been raised regarding the availability of these products, SCAQMD staff analysis shows that the rule would lead to an expected increase in 340,000 zero-emission water heaters annually. With adequate notice of this rule going into effect manufacturers can plan to meet the increased demand on the market. In the case where this demand could not be met, staff would be able to easily identify this deficiency in the technology review ahead of the zero-NOx rule going into effect.

#### IV. Conclusion

The Company is supportive of SCAQMD's goal to reduce NOx emissions in the District and meet their requirements under the Clean Air Act. The Company believes that Staff properly reviewed concerns raised and added adequate exemptions and alternative compliance pathways to address difficult installations. The Company believes that a successful technology review ahead of the 2027 compliance date will facilitate a successful transition to zero-NOx products, ensuring an adequate supply of compliant products, and meet the district's NOx emissions goals while limiting the burden on its residents.

The Company appreciates the opportunity to comment on the SCAQMD's draft rule language pertaining to zero-NOx standards for small water heaters and looks forward to continuing the dialogue and working with the SCAQMD Staff throughout the rulemaking process.

Please do not hesitate to contact me if you have questions.

Respectfully submitted,



Kyle Bergeron  
Manager, Government and Regulatory Affairs  
A. O. Smith Corporation  
Global Headquarters  
11270 West Park Place  
(414) 389 7297  
[Kyle.bergeron@aosmith.com](mailto:Kyle.bergeron@aosmith.com)

**Response to Comment Letter #88:***Response to Comment 88-1:*

Staff appreciates the information provided in the comment letter and the support for the rules. Staff believes that adoption of the amended rules will send a market signal to manufacturers, which will, in turn, drive overall costs down. Additionally, the market signal can help encourage manufacturers to develop and provide innovative solutions to different scenarios, such as installations in multifamily buildings.

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Please see Response to Comment 10 for more regarding the need for rule amendment.

**COMMENT LETTER #89: EVAN TRUBEE**

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Thursday, December 19, 2024 3:11 PM  
**To:** Peter Campbell [REDACTED]  
**Subject:** Contact Form

**Contact Form**

**Name:** Evan Trubee

**Email:** [REDACTED]

**Phone:** [REDACTED]

**Message:**

Hello, I am vehemently opposed to the proposed PAR 1111 and 1121. I serve on Palm Desert City Council and I am a business owner, home owner, father and husband. If you choose to prohibit our freedom to choose which mode of heating and cooling our homes as well as how we obtain hot water you will be giving a monopoly to the electric utilities. You would be taking away options to consumers and giving it to utility providers who have not demonstrated a willingness to fairly serve the public. In addition I do not believe the entire premise of global warming and climate change nor do I believe that natural gas is harmful. I am 53 years old and the next climate change prediction that comes true will be the first. I have heard all the dire predictions. I believe that this rule is about behavior control....not about saving the planet. Thank you!

89-1

**Response to Comment Letter #89:***Response to Comment 89-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Under the new approach, consumers will be able to choose between installing NOx-emitting natural gas-fired appliances and zero-emissions appliances.

Please see Response to General Comment 10 and 11 for the need for rule amendments and incentives.

**COMMENT LETTER #90: KAREN HAWLEY**

From: Karen Darras Hawley <[REDACTED]>  
Sent: Thursday, December 19, 2024 2:04 PM  
To: Heather Farr <[REDACTED]>  
Subject: [EXTERNAL] Stationary Source Committee

90-1

I am writing as a concerned citizen of California regarding your pending bills for zero NOx emissions for homes and commercial buildings. Bills 1111 & 1121 to change from gas stoves, heat & water heaters to electric. These are Very Expensive changes.

As a retired woman I am on a very fixed income. My home is older and would be very costly to make that change.

I am a native Californian and have watched this state lose many inhabitants because of the Rules and Regulations of Costly taxes and mandates.

How can we afford ALL Electric when we don't have enough electricity for the EV autos that are being sold.

We are Over Regulated and Taxed....

Please do not go further with these bills.

NO on 1111 and 1121.

Sincerely,

Karen Hawley  
Palm Desert, CA

**Response to Comment Letter #90:**

*Response to Comment 90-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the need for rule amendment, please refer to Response to General Comment 10.

Please note that PARs 1111 and 1121 do not apply to stoves, they apply to space and water heating appliances.

**COMMENT LETTER #91: ARLENE WOHLGEMUTH**

From: Arlene Wohlgemuth <[REDACTED]>

Sent: Thursday, December 19, 2024 4:20 PM

To: Heather Farr <[REDACTED]>

Subject: [EXTERNAL] Rules 1111 and 1121

I object to the passage of these two rules. As a California homeowner and full time resident, I consider these rules an extreme overreach, needlessly expensive, and scientifically foundless. Renewables have failed to meet this state's requirements for electricity. Until it does, removing fossil fuels from our energy portfolio is harmful and cruel to our low-income population.

91-1

Arlene Wohlgemuth  
[REDACTED]  
[REDACTED]

**Response to Comment Letter #91:***Response to Comment 91-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the need for rule amendment, please refer to Response to General Comment 10.

**COMMENT LETTER #92: VALLEY INDUSTRY & COMMERCE ASSOCIATION (VICA)**

**From:** Victor Reyes <[REDACTED]>  
**Sent:** Friday, December 20, 2024 12:59 PM  
**To:** Peter Campbell <[REDACTED]>  
**Cc:** Mikayla Jakubecy-Gibson <[REDACTED]>  
**Subject:** [EXTERNAL] Re: Submission of Letter on Proposed Amendments to Rules 1111 and 1121

Good afternoon Mr. Campbell, happy Friday,

Please see my intended comment at today's AQMD Stationary Source Committee meeting, I had intended to provide public comments though they had cut off public comment, regarding proposed Rule 1111/1121.

"VICA strongly opposes Proposed Amended Rules 1111 and 1121 and urges the South Coast Air Quality Management District Governing Board to delay their adoption.

These rules impose costly and complex mechanical, electrical, and plumbing retrofits on commercial buildings, single-family homes, and multifamily residences, disproportionately impacting small businesses and working families.

92-1

The high compliance costs risk pushing multifamily property owners to sell or redevelop, significantly reducing the region's already strained supply of affordable housing.

While VICA supports efforts to improve air quality, these rules could stifle job creation and further escalate the cost of living in the San Fernando Valley and beyond.

We urge the Board to take additional time for stakeholder outreach and dialogue to address concerns regarding costs, technological feasibility, and potential incentives.

92-2

Thank you for your consideration. VICA stands ready to work collaboratively toward solutions that balance economic growth and environmental goals."

Please reach out if you have any questions/comments.

All the best and happy holidays,

Victor Reyes-Morelos  
Legislative Affairs Manager  
Valley Industry & Commerce Association

O: [REDACTED]  
C: [REDACTED]

---

**From:** Victor Reyes  
**Sent:** Friday, September 20, 2024 2:44:02 PM  
**To:** [REDACTED] <[REDACTED]>  
**Cc:** Mikayla Jakubecy-Gibson <[REDACTED]>  
**Subject:** Submission of Letter on Proposed Amendments to Rules 1111 and 1121

Dear Mr. Campbell and SCAQMD Staff,

I hope you are doing well. We are reaching out, with an attached letter regarding the proposed amendments to Rules 1111 and 1121, which discusses the impacts of these changes on residential and commercial space and water heating.

Thank you for considering our input. Please feel free to reach out if you have any questions.

All the best,



**Victor Reyes-Morelos**  
Legislative Affairs Manager  
Valley Industry & Commerce Association

O: [REDACTED]  
C: [REDACTED]  
[REDACTED]

**Response to Comment Letter #92:***Response to Comment 92-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

*Response to Comment 92-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on technology readiness, please refer to Response to General Comment 4.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the need for rule amendment and incentives, please refer to Response to General Comment 10 and 11.



**COMMENT LETTER #93: BARBARA ROHLF**

From: [REDACTED] <[REDACTED]>  
Sent: Sunday, December 29, 2024 5:24 PM  
To: Peter Campbell <[REDACTED]>  
Subject: Contact Form

## Contact Form

Name: Barbara Rohlf

Email: [REDACTED]

Phone: [REDACTED]

## Message:

I wanted to give you input on Rules 1111 and 1121. I'm hoping this is the place to do that. It is just amazing to me these bills are even being considered. CA residents are being so overwhelmed with the cost of housing. These bills will just be a huge unbearable cost with little ability to help air quality. As usual, these costs will be passed on to the people who can least afford them. Rather than try and reexplain my concerns, please refer to article by Don Wagner in the OC Register article in Sunday's 12/29 edition. My feelings are very aligned with what he writes. These are nothing but two more HUGE concerns and reasons why more and more people are leaving or going to leave CA because we just cannot afford to live here any more. Thank you for the opportunity to respond.

93-1

**Response to Comment Letter #93:***Response to Comment 93-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the need for rule amendment and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #94: MEL FOLEY**

From: [REDACTED] <[REDACTED]>  
Sent: Thursday, January 2, 2025 4:18 PM  
To: Jennifer Vinh <[REDACTED]>  
Subject: Contact Form

Contact Form

Name: Mel Foley

Email: [REDACTED]

Phone: [REDACTED]

Message:

I am totally AGAINST amended rules 1111 and 1121. My electric bills are so high now that I as a senior on fixed income cannot afford any increase in electrical cost, much less the cost to replace gas appliances with electric. The benefits in air quality proposed are minimal. Stop or at least postpone this proposal please

94-1

**Response to Comment Letter #94:**

*Response to Comment 94-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the need for rule amendment and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #95: ARNOLD GREGG**

**Subject:** Natural Gas Restrictions

**Date:** Thu, 2 Jan 2025 09:31:14 -0800

**From:** Arnold Gregg <[REDACTED]>

**To:** [REDACTED]

I recently became aware of a scheme by The South Coast Air Quality Management District (the "AQMD") to mandate the elimination of residential natural gas appliances and heaters starting in 2027. **I am firmly opposed to this overreach** as it will cost property owners countless thousands of dollars in initial outlays and higher operating costs with little or no environmental benefit.

95-1

What is your basis for such financially punishing policies? Where is the cost / benefit analysis? California's electricity rates are already the highest in the nation and the grid is failing to provide reliable service. Since air is fungible, there can be no benefit from these policies as California's global impact is negligible.

The AQMD was not elected by the people. The draconian policies you are proposing are not necessary and extremely costly. I would like a response to my input along with the full economic and environmental analysis for your proposals.

Arnold Gregg

Anaheim, [REDACTED]

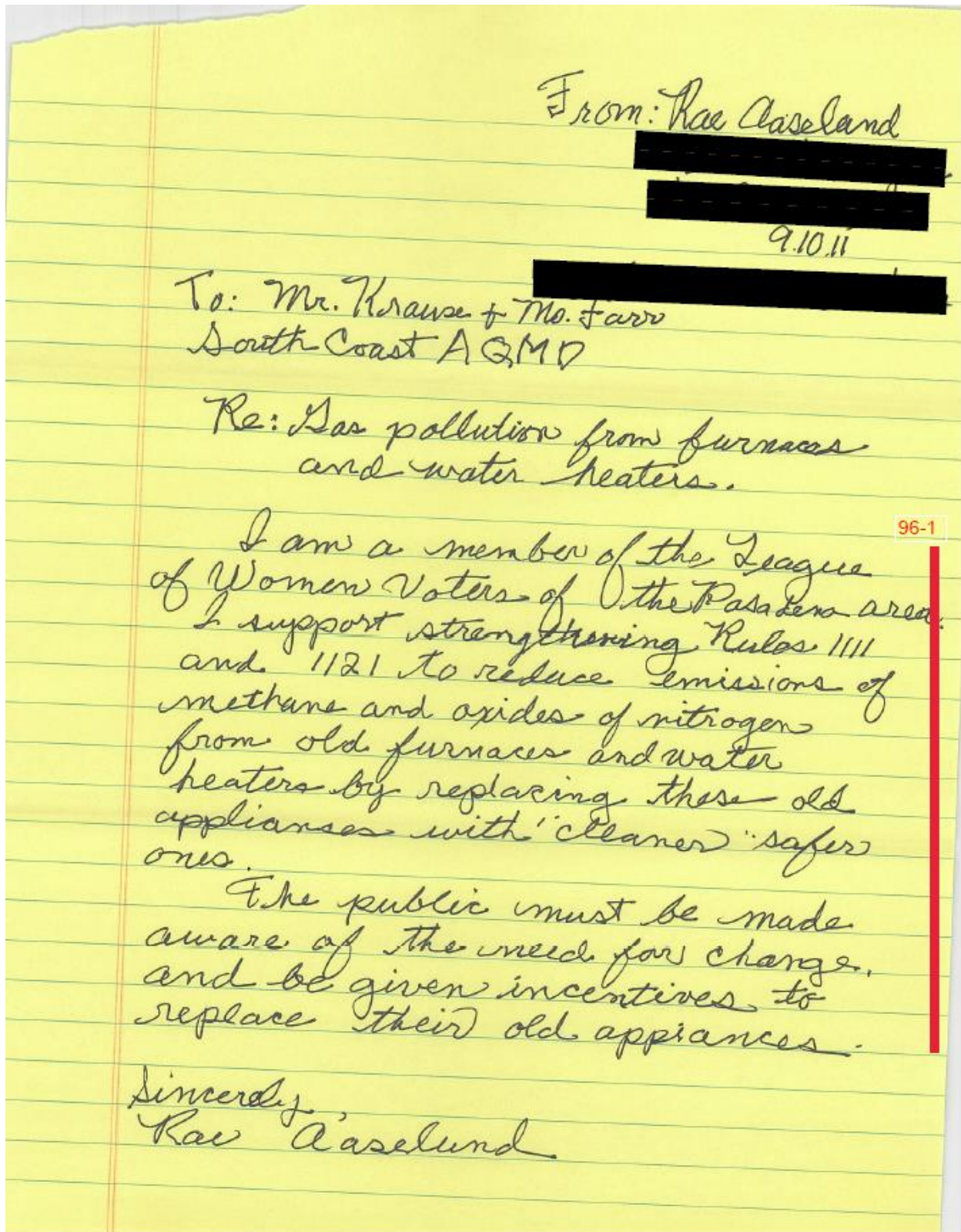
**Response to Comment Letter #95:**

*Response to Comment 95-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the need for rule amendment and incentives, please refer to Response to General Comment 10 and 11.

## COMMENT LETTER #96: RAE A'ASELUND



**Response to Comment Letter #96:***Response to Comment 96-1:*

Staff appreciates the support for PARs 1111 and 1121. South Coast AQMD's Go Zero incentive program will provide additional funding which can address upfront costs. Please see Response to General Comment 10 and 11 for the need for rule amendment and incentives.

**COMMENT LETTER #97: NICOLE AND JIM REYNOLDS**

**From:** James G Reynolds <[REDACTED]>  
**Sent:** Wednesday, January 15, 2025 8:18 AM  
**To:** Yanrong Zhu <[REDACTED]>  
**Cc:** Nicole Felsette Reynolds <[REDACTED]>  
**Subject:** [EXTERNAL] Proposed Amended Rule 1111 and 1121

AQMD,

We can't say it any better than what our friend said;

"I recently became aware of a scheme by The South Coast Air Quality Management District (the "AQMD") to mandate the elimination of residential natural gas appliances and heaters starting in 2027. **I am firmly opposed to this overreach** as it will cost property owners countless thousands of dollars in initial outlays and higher operating costs with little or no environmental benefit.

97-1

What is your basis for such financially punishing policies? Where is the cost / benefit analysis? California's electricity rates are already the highest in the nation and the grid is failing to provide reliable service. Since air is fungible, there can be no benefit from these policies as California's global impact is negligible.

The AQMD was not elected by the people. The draconian policies you are proposing are not necessary and extremely costly. I would like a response to my input along with the full economic and environmental analysis for your proposals."

Thank you,

Nicole and Jim Reynolds

**Response to Comment Letter #97:**

*Response to Comment 97-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the need for rule amendment and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #98: SAN BERNARDINO COUNCIL OF GOVERNMENTS****RESOLUTION NO. 25-059****RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN BERNARDINO COUNCIL OF GOVERNMENTS (SBCOG) IN OPPOSITION TO SCAQMD RULES 1111 AND 1121.**

**WHEREAS**, The South Coast Air Quality District (SCAQMD) is a regional air pollution control agency representing Los Angeles, Orange, Riverside and San Bernardino counties with responsibility for regulating stationary sources of air pollution;

**WHEREAS**, The SCAQMD is considering two rules that would have a significant impact on up to 17 million South Coast homeowners, renters and businesses: Rule 1111 would regulate air emissions from gas-powered central furnaces; and Rule 1121 would regulate air emissions from residential-type, natural gas-powered water heaters;

98-1

**WHEREAS**, Rules 1111 and 1121 would impose high costs to consumers while providing limited measurable air quality benefits for the four-county SCAQMD service area;

**WHEREAS**, The two rules would ban the use of natural gas-powered furnaces and water heaters in new construction, taking effect in 2026. These rules would phase out existing natural gas furnaces and water heaters in existing single-family homes, multi-family housing, and businesses in 2027;

**WHEREAS**, Housing affordability is and will remain a top public policy priority for San Bernardino County for the foreseeable future. Local governments are being pressured to build more housing. Specifically, housing people can afford. Any regulations that increase these costs deserve scrutiny to ensure that the increased costs are met with an equal or more significant amount of benefit to the consumer;

**WHEREAS**, Unlike most SCAQMD rules that regulate large stationary sources of air pollution like oil refineries and warehouses, Rules 1111 and 1121 specifically target individual homeowners, apartment buildings, and businesses large and small, meaning that families and business owners will directly bear the costs of these two rules;

**WHEREAS**, Rules 1111 and 1121 would require retrofitting homes, apartments, and businesses with electrical panel upgrades, extensive new plumbing, and physical renovations to accommodate compliant units.

**WHEREAS**, For apartment owners, the cost to replace natural gas water heaters and furnaces with all-electric units will be passed down to tenants, leading to rent increases and placing additional financial pressure on renters in a region already struggling with housing affordability;

**WHEREAS**, Rules 1111 and 1121 will increase electricity demands. Transitioning to all-electric water heaters and furnaces means an increased demand on an electric grid that has not proven capable of consistently meeting existing demand. Water heaters and furnaces are essential elements in any house, apartment, or business. Millions of new electric water heaters and furnaces would draw power from the grid and raise the risk of power brownouts or outages.

98-2



**NOW, THEREFORE, BE IT RESOLVED** by the Board of Directors of SBCOG:

1. Rules 1111 and 1121 will have a profound impact and impose significant costs on millions of Southern California homeowners, renters and businesses, and
2. SBCOG opposes **Proposed Amended Rules 1111 and 1121** and urges the SCAQMD to indefinitely delay or cease consideration of these two anti-consumer regulations immediately.

PASSED AND ADOPTED at a meeting of the San Bernardino Council of Governments held on January 8, 2025.



Ray Marquez, Board President  
San Bernardino Council of Governments

ATTEST:



Marleana Roman, Clerk of the Board  
San Bernardino Council of Governments

### **Response to Comment Letter #98:**

#### *Response to Comment 98-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the cost-effectiveness analysis, please refer to Response to General Comment 6.

Additional discussion can be found in Response to General Comment 9.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.

#### *Response to Comment 98-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the electric grid, please refer to Response to General Comment 3.

**COMMENT LETTER #99: CITY OF CHINO HILLS**

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## RESOLUTION NO. 2025R-003

A RESOLUTION OF THE CITY OF CHINO HILLS, OPPOSING SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULES 1111 AND 1121 REGULATING AIR EMISSIONS FROM GAS-POWERED CENTRAL FURNACES AND FROM RESIDENTIAL-TYPE, NATURAL GAS-POWERED WATER HEATERS, RESPECTIVELY

WHEREAS, the South Coast Air Quality District (SCAQMD) is a regional air pollution control agency representing Los Angeles, Orange, Riverside and San Bernardino counties with responsibility for regulating stationary sources of air pollution; and

WHEREAS, the SCAQMD is considering two rules that would have a significant impact on Chino Hills' homeowners, renters and businesses: Rule 1111 would regulate air emissions from gas-powered central furnaces; and Rule 1121 would regulate air emissions from residential-type, natural gas-powered water heaters; and

99-1

WHEREAS, Rules 1111 and 1121 would impose \$20-plus billion in costs to consumers while providing minimal measurable air quality benefits for the four-county SCAQMD service area, which includes the City of Chino Hills; and

WHEREAS, these two rules would ban the use of natural gas-powered furnaces and water heaters in new construction, taking effect in 2026, further elevating construction costs and housing prices, thereby putting homeownership even further out of reach for many Chino Hills' residents. These rules would phase out existing natural gas furnaces and water heaters in existing single-family homes, multi-family housing, and businesses in 2027; and

WHEREAS, housing affordability throughout California is and will remain a top public policy priority for the foreseeable future. Local governments are being pressured to build more housing - specifically, housing that people can afford. Any regulations that increase these costs deserve careful scrutiny to ensure that the increased costs are met with an equal or greater amount of benefit to the consumer; and

WHEREAS, unlike most SCAQMD rules that regulate large stationary sources of air pollution like oil refineries and warehouses, Rules 1111 and 1121 specifically target individual homeowners, apartment buildings, and businesses large and small - meaning that the costs of these two rules will be directly borne by hard-working families and business owners; and

WHEREAS, Rules 1111 and 1121 would require apartment owners, homeowners and businesses to invest not only in expensive all-electric furnaces and water heaters but would also necessitate that they retrofit homes and businesses with expensive electrical panel upgrades, extensive new plumbing, and physical renovations to accommodate

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compliant units - further raising the cost of new housing and likely pricing many potential homeowners and renters out of an already expensive market; and

99-1

WHEREAS, for apartment owners, the mandate to replace natural gas water heaters and furnaces with all-electric units is incredibly expensive. These significant costs will be passed down to tenants - leading to rent increases and placing additional financial pressure on renters in a region already struggling with housing affordability; and

WHEREAS, the SCAQMD's water heater and furnace mandates will impose a significant increase in electricity demand on California's electric grid. Transitioning to all-electric water heaters and furnaces means increased demand on an electric grid that has not proven capable of consistently meeting existing demand. Water heaters and furnaces are essential elements in any house, apartment or business. Millions of new electric water heaters and furnaces would draw power from the grid and raise the risk of power brownouts or outages.

99-2

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF CHINO HILLS DOES RESOLVE, DETERMINE, AND ORDER AS FOLLOWS:

SECTION 1. Rules 1111 and 1121 will have a profound impact and impose significant costs on Chino Hills' homeowners, renters and businesses who are already struggling to make ends meet while providing minimal air quality benefit.

SECTION 2. The City of Chino Hills opposes Proposed Amended Rules 1111 and 1121 and urges the SCAQMD to indefinitely delay or cease consideration of these two anti-consumer regulations immediately.

SECTION 3. The City Clerk shall certify as to the adoption of this resolution.

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PASSED, APPROVED, AND ADOPTED 28th day of January, 2025.

DocuSigned by:  
  
B79A3E78817D92C

ART BENNETT, MAYOR

ATTEST:   
DocuSigned by:  
  
1044818FA20430

CHERYL BALZ, CITY CLERK

APPROVED AS TO FORM:

Signed by:  
  
AE4187CDC929422

MARK D. HENSLEY, CITY ATTORNEY

DocuSign Envelope ID: 7387DE7C-702E-42A6-B236-701D8B3F3D37

STATE OF CALIFORNIA            )  
 COUNTY OF SAN BERNARDINO    )    §  
 CITY OF CHINO HILLS            )

I, CHERYL BALZ, City Clerk of the City of Chino Hills, DO HEREBY CERTIFY that the foregoing Resolution No. 2025R-003 was duly adopted at a regular meeting of the City Council of the City of Chino Hills held on the 28th day of January 2025, by the following vote, to wit:


AYES:            COUNCIL MEMBERS:    BENNETT, JOHSZ, MARQUEZ, ROGERS


NOES:           COUNCIL MEMBERS:    NONE

ABSENT:        COUNCIL MEMBERS:    MORAN

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Chino Hills, California, on the day and year last written below.

DS

DocuSigned by:  
  
 10448818FA20430




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CHERYL BALZ, CITY CLERK

1/30/2025

---

DATE

**Response to Comment Letter #99:***Response to Comment 99-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the cost-effectiveness analysis, please refer to Response to General Comment 6.

Additional discussion can be found in Response to General Comment 9.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11

*Response to Comment 99-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the electric grid, please refer to Response to General Comment 3.

**COMMENT LETTER #100: MONA CLARK**

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Saturday, January 4, 2025 10:30 PM  
**To:** Jennifer Vinh <[REDACTED]>  
**Subject:** Contact Form

**Contact Form**

**Name:** Mona Clark

**Email:** [REDACTED]

**Phone:** [REDACTED]

**Message:**

No on these proposed amended rules 1111 & 1121, NO NO NO please | 100-1

**Response to Comment Letter #100:***Response to Comment 100-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.



**COMMENT LETTER #101: TOM QUAST**

January 4, 2025

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Dear SCAQMD,

I am a landlord who does not charge market value for my rental units in order to keep housing affordable in my neighborhood and to retain long term tenants. If you impose proposed rules 1111 and 1121, I will have no choice but to substantially increase rents to cover the capital improvement costs SCAQMD imposes when a more affordable alternative exists. Additionally, my tenant's utility expenses will increase due to increased electricity usage while again, a more affordable alternative exists. My expectation is the end result will be an unnecessary increase in capital outlay for myself, loss of affordable housing for my tenants (some of whom have been with me over a decade), and my rental units sitting vacant due to lack of affordability.

101-1

Please do not mandate rules 1111 and 1121, as it will have a substantial impact on small operators such as myself.

Sincerely,



Tom Quast  
402 W Main St  
San Jacinto, CA 92583

**Response to Comment Letter #101:**

*Response to Comment 101-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #102: EDWIN GOW**

January 9, 2025

Edwin Gow  
25 Falkner Drive  
Ladera Ranch, CA 92694

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

Dear SCAQMD Board Members,

I am writing as a resident of Ladera Ranch and a small business owner in San Juan Capistrano to express my strong opposition to the proposed amendments to Rules 1111 and 1121, which would require homeowners, landlords, and businesses to replace gas furnaces and water heaters with expensive “zero-emission” electrical units.

While I support efforts to improve regional air quality, these proposals impose significant financial burdens on residents and small business owners, with minimal environmental benefits. According to an editorial published on December 27, 2024 in the Orange County Register, the projected cost of implementing these rules across the SCAQMD service area is at least \$20.4 billion. For many, the upfront costs of upgrading to electric units—potentially tens of thousands of dollars per household or business—are simply unaffordable.

102-1

The editorial also highlighted a serious flaw: California’s electric grid is already under strain, with frequent power outages and reliability issues. Replacing natural gas appliances with electric alternatives will increase demand, potentially worsening grid instability. Forcing residents and businesses to rely solely on electricity without addressing infrastructure vulnerabilities is shortsighted and risks even more frequent brownouts and service disruptions.

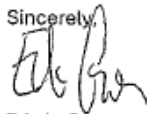
102-2

Furthermore, these rules will exacerbate the region’s housing crisis. As Donald Wagner, Chairman of the Orange County Board of Supervisors and a member of the SCAQMD Board, noted, landlords will pass compliance costs to tenants, making rents less affordable. The expense of retrofitting older buildings will discourage the development of affordable housing and further reduce homeownership opportunities.

102-3

The marginal air quality improvements these rules might achieve come at an exorbitant cost, disproportionately affecting middle- and lower-income families and small business owners. I urge the SCAQMD to consider alternative approaches, such as incentivizing cleaner technologies, which would allow for a gradual transition while preserving affordability and reliability.

Thank you for your time and consideration. I trust that the Board will act in the best interests of all residents and businesses within the district.

Sincerely,  


Edwin Gow  
949-933-0964  
edwin.gow@gmail.com

Gow Business Partners, Inc.  
Gow Consulting, LLC (The Entrepreneur’s Source)  
Gow Fitness LLC (The Exercise Coach-San Juan Capistrano)

**Response to Comment Letter #102:***Response to Comment 102-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

*Response to Comment 102-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the electric grid, please refer to Response to General Comment 3.

*Response to Comment 102-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #103: CITY OF COLTON**



January 16, 2025

South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765

**Subject: Opposition to Proposed Amended Rules 1111 and 1121**

Dear Members of the South Coast Air Quality Management District (SCAQMD),

The City of Colton has a strong opposition to the proposed amendments to Rules 1111 and 1121, which seek to regulate air emissions from natural gas-powered central furnaces and water heaters in the South Coast Air Quality Management District's (SCAQMD) service area. While we understand and support the SCAQMD's commitment to improving air quality, these rules, if implemented, will impose significant financial burdens on Colton's residents, homeowners, renters, and local businesses, with little measurable benefit to air quality.

These proposed amendments would impact an estimated 17 million people across the four-county SCAQMD service area, including many in our community. Rule 1111 would regulate emissions from gas-powered central furnaces, and Rule 1121 would regulate residential natural gas-powered water heaters. The rules would phase out the use of natural gas-powered units in new construction starting in 2026, with a full phase-out in existing buildings scheduled for 2027. This transition is expected to impose significant costs on homeowners, apartment owners, and businesses.

The City of Colton is committed to addressing affordable housing needs, a priority that continues to grow as local governments face increasing pressure to build more housing, particularly affordable housing. The retrofitting and replacement requirements under these rules will only increase the costs associated with homeownership, rental properties, and small businesses, putting an additional strain on an already struggling community. Housing affordability is a critical issue in our region, and we must ensure that any regulations affecting housing costs provide measurable benefits to offset these increases.

Unlike many SCAQMD rules that regulate large industrial sources of air pollution, such as oil refineries and warehouses, Rules 1111 and 1121 would directly affect individual homeowners, apartment building owners, and small businesses. Property owners will be forced to shoulder the costs of expensive retrofits to meet the new standards, including electrical panel upgrades, new plumbing, and the installation of electric units, which can cost thousands of dollars per property. These additional costs will likely be passed down to renters in the form of rent increases, which will exacerbate the financial pressures on Colton's low- and moderate-income households.

103-1

**MAYOR**

Frank J. Navarro

**COUNCIL MEMBERS**

David J. Toro  
District 1

Kelly J. Chastain  
District 2

Dr. Luis S. González  
District 3

John R. Echevarria  
Mayor Pro Tem  
District 4

**CITY MANAGER**

William R. Smith  
CIVIC CENTER  
650 N. La Cadena Drive  
Colton, CA 92324  
(909) 370-5099

South Coast Air Quality Management District  
January 16, 2025  
Page 2

Additionally, the transition to electric water heaters and furnaces will significantly increase demand for the already stressed electrical grid. Given that our region has experienced power shortages in recent years, it is concerning that the increased demand from millions of new electric appliances could lead to power brownouts or outages. This could have a particularly detrimental impact on our community, where reliable access to power is essential for daily living, business operations, and public safety.

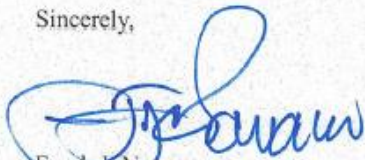
103-2

In summary, while we understand the importance of improving air quality, the proposed rules would result in substantial costs for the residents and businesses in Colton and throughout the SCAQMD service area. The rules would provide limited air quality benefits and could further strain housing affordability and energy infrastructure.

For these reasons, the City of Colton opposes the proposed amendments to Rules 1111 and 1121. We urge the SCAQMD to reconsider these rules and delay or cease their consideration until the full financial, economic, and infrastructure impacts can be thoroughly evaluated.

Thank you for your attention to this critical matter. We look forward to your thoughtful consideration of our concerns.

Sincerely,



Frank J. Navarro  
Mayor

Cc: Ray Marquez, Board President San Bernardino Council of Governments  
Bill Smith, City Manager City of Colton

### **Response to Comment Letter #103:**

#### *Response to Comment 103-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the cost-effectiveness analysis, please refer to Response to General Comment 6.

Additional discussion can be found in Response to General Comment 9.

*Response to Comment 103-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the electric grid, please refer to Response to General Comment 3.

**COMMENT LETTER #104: DAVE MOCK**

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Saturday, January 25, 2025 9:31 AM  
**To:** Jennifer Vinh [REDACTED] >  
**Subject:** Contact Form

**Contact Form**

**Name:** Dave Mock

**Email:** [REDACTED]

**Phone:** [REDACTED]

**Message:**

I am writing this in opposition to the Amended Rules 1111 and 1121. With the already overextended electrical grid and the cost to homeowners, landlords, and businesses with limited (proven) air quality improvement. If the AQMD thinks over 17 million people can afford to replace all of their natural gas appliances with electric units, you must not be on the same planet as everyday people. Common sense would also make you think that if over 17 million people changed over to electric appliances, there is no way the electrical grid could handle the increase in usage. I implore you to reconsider adopting these two rules. If you pass these rules, you are making millions of people susceptible to undo hardships - such as not being able to charge their cars, cook for their families, take a hot shower, or heat their houses on an already stretched electrical grid.

104-1

**Response to Comment Letter #104:***Response to Comment 104-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on need for rule amendments and incentives, please refer to Response to General Comment 10 and 11.

**COMMENT LETTER #105: JOANNE GENIS**

February 1, 2025

Vanessa Delgado, Chair  
And Honorable Governing Board Members  
South Coast Air Quality Management District 21865  
Copley Drive Diamond Bar, CA 91765

Subject: Comments on Proposed Amendments to Rule 1111 and Rule 1121

Dear Ms. Delgado and Honorable Members of the Governing Board:

I just recently attended a city council meeting and heard for the first time of these two proposed amended Rulings. Has SCAQMD done their due diligence in notifying the 17 million people, which reside in your district, about these proposed changes? Did I perhaps miss a mailer? 105-1

As a homeowner and senior citizen living in SCAQMD's district, I have concerns with the impact that Rule 1111 and Rule 1121 would have on my livelihood. These two Rulings would cause an additional monetary burden on my finances. Appliances that are natural gas-powered are less expensive and more reliable to operate than those using electricity. I can count on my gas-powered water heater to provide hot water when SCE implements their Public Safety Power Shutoff-PSPS, which can last for a few hours to several days. 105-2

How many older homes with 100 amp electrical panels will need to do an upgrade in order to sustain the additional electricity needed? This unexpected cost can range from \$1000 on up. This issue could have a significant impact on people's pocketbooks, especially the senior citizens and low-income families. I read that AQMD is working on an incentive program to provide rebates for residents, building owners, and small businesses, but will that incentive program pay or reimburse the individual for the expense of having to upgrading their electrical panels? I share your commitment to clear air, but enacting Rulings that will only cause financial burdens to many is not the right approach to meet your intended goals. 105-3

It seems that every summer or when there's a heat wave, we deal with power outages due to an overwhelmed power grid. The state's transitioning to electrical appliances and cars will only put an additional strain on the power grid. 105-4

California is second on the list of the highest electricity rates in the nation. And just recently the CPUC approved SCE's request for another rate increase. When is enough enough?

My husband and I just installed a new gas-powered water heater and the emissions are significant lower than our previous one. Forcing a homeowner to install electrical appliances I believe is taking away from their rights and freedom to choose. 105-4

Thank you for giving me the opportunity to respond.

Sincerely,  
Joanne Genis  
Chino Hills, CA

**Response to Comment Letter #105:***Response to Comment 105-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on outreach, please refer to Response to General Comment 5.



*Response to Comment 105-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the cost-effectiveness analysis, please refer to Response to General Comment 6.

*Response to Comment 105-3:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on the electric grid, please refer to Response to General Comment 3.

*Response to Comment 105-4:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

**COMMENT LETTER #106: REMO HOMES**

(323)708-4094  
 WWW.REMO.HOMES  
 1519 W. 139TH ST  
 GARDENA CA 90249

February 6, 2025

Mr. Wayne Natri  
 Executive Officer  
 South Coast Air Quality Management District  
 21865 Copley Drive  
 Diamond Bar, CA 91765

POSITION: SUPPORT Amendments to South Coast AQMD Rules 1111 and 1121

Dear Mr. Natri:

In view of the state's goal of achieving carbon neutrality by 2045 (Executive Order B-55-18-2018), amendments to South Coast Air Quality Management District Rules 1111 and 1121 would address the transition to zero-emission appliances and reducing emissions, specifically residential furnaces (Rule 111) and water heaters (Rule 1121).

As the future of home building, [ReMo Homes](#)' innovative and technological advanced clean energy systems include both the clean residential furnace and water heater. More importantly, by transitioning to all-electric systems, we can eliminate these emissions at the source, improving both public health and environmental quality.

For ReMo Homes' factory pre-made material assembled onsite, electrification policies such as South Coast AQMD Rules 1111 and 1121 are critical to accelerating California's transition to safer, more sustainable housing. We urge South Coast AQMD to move forward with the amendments and continue supporting policies that reduce emissions, lower costs, and create a cleaner future for all Californians.

Sincerely,

Vamsi Kotla  
 President & CEO  
 ReMo Homes

106-1

**Response to Comment Letter #106:***Response to Comment 106-1:*

Staff appreciates the support for PARs 1111 and 1121, recognizing the need for emission reductions.

**COMMENT LETTER #107: THE CITY COUNCIL OF THE CITY OF LA VERNE, CALIFORNIA**

**RESOLUTION NO. 25-09**

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**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LA VERNE, CALIFORNIA, OPPOSING PROPOSED AMENDED RULES 1111 AND 1121 OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RELATED TO REGULATION OF NATURAL GAS EMISSIONS DUE TO COSTS TO AFFECTED BUSINESS AND RESIDENTS**

**WHEREAS**, the South Coast Air Quality District (SCAQMD) is a regional air pollution control agency representing Los Angeles, Orange, Riverside and San Bernardino counties with responsibility for regulating stationary sources of air pollution; and

**WHEREAS**, the SCAQMD is considering two rules that would have a significant impact on up to 17 million South Coast homeowners, renters and businesses: Rule 1111 would regulate air emissions from gas-powered central furnaces; and Rule 1121 would regulate air emissions from residential-type, natural gas-powered water heaters; and

**WHEREAS**, Rules 1111 and 1121 would impose high costs to consumers while providing limited measurable air quality benefits for the four-county SCAQMD service area; and

**WHEREAS**, the two rules would ban the use of natural gas-powered furnaces and water heaters in new construction, taking effect in 2026. These rules would phase out existing natural gas furnaces and water heaters in existing single-family homes, multi-family housing, and businesses in 2027; and

**WHEREAS**, housing affordability is and will remain a top public policy priority for all local governments for the foreseeable future, and local governments are being pressured to build more housing, specifically housing people can afford and maintain. Any regulations that increase these costs deserve scrutiny to ensure that the increased costs are met with an equal or more significant amount of benefit to the consumer; and

**WHEREAS**, unlike most SCAQMD rules that regulate large stationary sources of air pollution like oil refineries and warehouses, Rules 1111 and 1121 specifically target

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1 individual homeowners, apartment buildings, and businesses large and small, meaning  
2 that families and business owners will directly bear the costs of these two rules; and

3 **WHEREAS**, Rules 1111 and 1121 would require retrofitting homes, apartments,  
4 and businesses with electrical panel upgrades, extensive new plumbing, and physical  
5 renovations to accommodate compliant units; and

6 **WHEREAS**, on June 7, 2024, SCAQMD's Governing Board approved updates to  
7 Rule 1146.2 that will require new and existing residential and commercial buildings to  
8 transition to zero-emission (ZE) water heaters, to include natural gas-fired pool heaters,  
9 larger water heaters, small commercial water heaters, boilers, and process heaters,  
10 starting January 1, 2026; and

11 **WHEREAS**, for apartment owners, the cost to replace natural gas water heaters  
12 and furnaces with all- electric units will be passed down to tenants, leading to rent  
13 increases and placing additional financial pressure on renters; and

14 **WHEREAS**, updates to Rule 1146.2 will impact approximately 710,000 natural  
15 gas-fired residential pool and spa heaters alone, which will lead to further economic  
16 hardship to those pool owners; and

17 **WHEREAS**, for homeowners, and especially senior homeowners, of whom the  
18 City has a higher percentage than other cities, the costs to retrofit homes could be  
19 financially infeasible; and

20 **WHEREAS**, the City Council shares the commitment of SCAQMD to clean air and  
21 water and other quality of life benefits that draw and retain residents and businesses;  
22 however, the current version of Rules 1111 and 1121 will increase the cost of living in La  
23 Verne and potentially impact job creation and business retention.

24 **NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL  
25 OF THE CITY OF LA VERNE THAT:**

26 **SECTION 1.** Rules 1111 and 1121 will have a profound impact and impose  
27 significant costs on thousands of La Verne homeowners and renters and hundreds of  
28 businesses; and  
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**SECTION 2.** The City Council requests more time to allow for a more robust public outreach process that ensures residents and businesses are properly informed and that questions regarding cost, technology, and the availability of potential incentives are able to be addressed; and

**SECTION 3.** The City Council of the City of La Verne opposes Proposed Amended Rules 1111 and 1121 and urges the SCAQMD to indefinitely delay or cease consideration of these two regulations.

**SECTION 4.** That the Mayor shall sign and the Deputy City Clerk shall certify to the passage and adoption of this resolution and thereupon the same shall take effect and be in force.

**PASSED, APPROVED, AND ADOPTED this 3rd day of February 2025.**

  
\_\_\_\_\_  
Tim Hepburn, Mayor

ATTEST:

  
\_\_\_\_\_  
Debra Fritz, CMC Deputy City Clerk

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I hereby certify that the foregoing **Resolution No. 25-09** was introduced and adopted at a regular meeting of the City Council of the City of La Verne held on the **3rd day of February 2025**, by the following votes:

AYES: Kashifalghita, Lau, Johnson, and Hepburn.  
NOES: None.  
ABSENT: Crosby.  
ABSTAIN: None.

  
Debra Fritz, CMC Deputy City Clerk

## City of La Verne, City Council Agenda Report



**Approved on 2/3/25 at  
the regular meeting of the  
La Verne City Council.**

**DATE:** February 3, 2025  
**TO:** Honorable Mayor and City Council  
**FROM:** Ken Domer, City Manager  
**SUBJECT:** RESOLUTION OPPOSING SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT PROPOSED AMENDED RULES 1111 AND 1121 RELATED TO REGULATION OF AIR EMISSIONS FROM RESIDENTIAL AND BUSINESS NATURAL GAS FURNACES AND WATER HEATERS.

### SUMMARY

The South Coast Air Quality Management District (SCAQMD) will consider two Proposed Amended Rules (PARs), Rule 1111 and Rule 1121, regulating the emissions from residential and commercial furnaces and emissions from residential water heaters. The proposed amendments to the rules seek to transition to zero-emission space and water heating appliances, based on future effective dates, when existing appliances need to be replaced. The proposed Resolution seeks to oppose the two rules based on costs to transition and seeks additional time and assistance to affected residents and businesses.

### RECOMMENDATION

That the City Council adopt a Resolution titled, "A RESOLUTION OF THE CITY COUNCIL, CITY OF LA VERNE, CALIFORNIA, OPPOSING PROPOSED AMENDED RULES 1111 AND 1121 OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RELATED TO REGULATION OF NATURAL GAS EMISSIONS DUE TO COSTS TO AFFECTED BUSINESS AND RESIDENTS."

### DISCUSSION

After being contacted by residents, Mayor Tim Hepburn requested that this item be placed for consideration by the City Council. Previously, on December XX, 2024, the City sent a letter to the South Coast Air Quality Management District (SCAQMD) expressing the City Council's opposition to the Proposed Amended Rules stating that while the City Council shares SCAQMD's commitment to improving air quality, the proposed amendments pose significant challenges and unintended consequences for our community.

One of the functions of SCAQMD is to promulgate rules that assist the region in attaining federal air quality standards. Rule 1111 regulates the emissions from residential and commercial furnaces and Rule 1121 regulates the emissions from residential water heaters. The proposed amendments to the rules seek to transition to zero-emission space and water heating appliances, based on future effective dates, when existing appliances need to be replaced.

There is strong concern over the two Proposed Amended Rules (PARS) due to the costs associated with implementing the regulations upon residents and business owners. Estimates

Resolution Opposing South Coast Air Quality Management District Proposed Amended Rules 1111 and 1121  
Related to Regulation of Air Emissions from Residential and Business Natural Gas Furnaces and Water Heaters.,  
Page 2

from a SCAQMD draft staff report on the PARS show replacement costs for space heaters ranging from \$18,500 to \$21,500 in an electric panel upgrade is needed. For water heater replacements, the cost to go electric ranges from approximately \$5,200 to \$8,200. At this time, SCAQMD has not released information on the proposed Go Zero Incentive Plan which is proposed to reimburse residents for the transition. It is important to note that as understood, the Go Zero Incentive Plan is a rebate program so residents would need to provide upfront funding. An example from a SCAQMD presentation shows the cost of a Heat Pump Water Heater at \$5,200 while the incentive rebated is only in the \$1,000 to \$2,000 range, though with longer-term fuel savings derived from the switch.

Previously, on June 7, 2024, SCAQMD's Governing Board approved updates to Rule 1146.2 that will require new and existing residential and commercial buildings to transition to zero-emission (ZE) water heaters, to include natural gas-fired pool heaters, larger water heaters, small commercial water heaters, boilers, and process heaters, starting January 1, 2026.

Concern expressed by industry and resident commenters in meetings held by SCAQMD include that the rules create significant burdens for consumers and will potentially cost billions of dollars to only slightly reduce overall nitrogen oxide (NOx) emissions within the South Coast Air Basin. Based on information contained in a preliminary staff report for the Proposed Amended Rules, that percentage is 10 tons per day out of the total 351 tons per day of NOx emitted by all sources within the basin. As such, there is concern that PARs 1111 and 1121 require significantly more public education and consideration before being promulgated by SCAQMD.

#### **FISCAL ANALYSIS**

The consideration and adoption of the Resolution does not have a City fiscal impact.

#### **ENVIRONMENTAL ANALYSIS**

Not applicable.


#### **LEGAL REVIEW**

The City Attorney has reviewed the proposed Resolution.

#### **ATTACHMENTS**

1. Reso No 25-XX SCAQMD Rules 1111 and 1121
2. Rule 1111 and 1121 Factsheet





# South Coast AQMD is Conducting Rulemaking that Could Impact Your Home Water Heaters and Furnaces

The rules will reduce emissions from residential furnaces (Rule 1111) and water heaters (Rule 1121) by transitioning to zero-emission appliances.

### How Will the Rules Impact You?

Rules will take effect in 2-5 years and will be required only when:

**Appliances are voluntarily replaced** 

**Existing appliances break** 

### Will There be any Flexibility?

Exceptions will be allowed for:

-  **Construction or utility upgrades delays**
-  **High-altitude areas**
-  **Owners of multifamily buildings**
-  **Considering other circumstances**

### Health Benefits

Once implemented, these rules will prevent:

-  **4,000** premature deaths
-  **16,000** cases of newly onset asthma
-  **4,000** emergency room visits

### Will Financial Assistance be Available?

South Coast AQMD is working on an incentive program to provide rebates for residents, building owners and small businesses.

More info →



### Get Involved

Want to provide feedback on the rules or need more information? Join a working group meeting. More information can be found at: [www.aqmd.gov/home/rules-compliance/rules](http://www.aqmd.gov/home/rules-compliance/rules). To receive future updates on rulemaking and incentives via email newsletter: Subscribe by checking the "Building Appliances" box located under Rule Updates: [www.aqmd.gov/sign-up](http://www.aqmd.gov/sign-up).



South Coast Air Quality Management District  
21865 Copley Dr. Diamond Bar, CA 91765  
[www.aqmd.gov](http://www.aqmd.gov) • 1-800-CUT-SMOG®

@SouthCoastAQMD



**Response to Comment Letter #107:***Response to Comment 107-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on consumer choice, please refer to Response to General Comment 1.

For discussion on cost, please refer to Response to General Comment 2.

For discussion on the electric grid, please refer to Response to General Comment 3.

For discussion on the cost-effectiveness analysis, please refer to Response to General Comment 6.

Additional discussion can be found in Response to General Comment 9.

For discussion on need for rule amendments and incentives, please refer to Response to general Comment 10 and 11.

Staff will conduct a status update/technology check-in(s) to further assess the market and provide updates to the Stationary Source Committee.

*Response to Comment 107-2:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

For discussion on outreach, please refer to Response to General Comment 5.

**Comment Letter #108: Alexandria Helmer**

**From:** [REDACTED] <[REDACTED]>  
**Sent:** Monday, February 10, 2025 5:35 PM  
**To:** Jennifer Vinh <[REDACTED]>  
**Subject:** Contact Form

**Contact Form**

**Name:** Alexandria Helmer

**Email:** [REDACTED]

**Phone:** [REDACTED]

**Message:**

**I am opposed to Rule 1111 and 1121 mandates. Please do not approve.**

108-1

**Response to Comment Letter #108:***Response to Comment 108-1:*

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NO<sub>x</sub> emission sales targets for manufacturers, will allow for both zero-NO<sub>x</sub> emission units and NO<sub>x</sub>-emitting natural gas-fired units to be sold and installed for use.

Please refer to Response to General Comment 10 for the need for rule amendments.