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VIA ELECTRONIC MAIL

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Re: Comments on Proposed Amendments to Rules 1111 & 1121- Zero-NOx Standards for Residential Water Heaters and Furnaces

Dear Mses. Farr and Vinh:

We appreciate your continued focus on Rules 1111 and 1121 (Rules). It is imperative we pass rule amendments in May to ensure we are on track to achieve important regional emission reductions and move towards compliance with federal ozone and PM2.5 standards. Unfortunately, the concessions in the third preliminary draft of the proposed amendments drastically reduce the expected emission reductions by 40% compared to the previous drafts and allow for significant manufacturer noncompliance. Even achieving these smaller pollution reductions is highly uncertain as the proposed mitigation and penalty fees are likely insufficient

to incentivize compliance with the zero-emissions sales targets. The unnecessary weakening of the Rules not only jeopardizes their intended health benefits but also poses a significant barrier to achieving a successful transition to zero-emissions equipment—a key tenet of the 2022 AQMP.

I. Summary of Recommendations

To ensure the Rules are effective in maximizing emission reductions, it is imperative that the following changes be made to the rule language:

- Accelerate the timeline for zero-emission NOx appliance targets to meet or exceed the state's commitments.
- Tier the non-compliance fee for each NOx-emitting unit sold above the sales target based on the degree of manufacturer non-compliance.
- Tie the per-unit mitigation fee for polluting appliances to the cost of health impacts from the NOx pollution emitted over its lifetime.
- Eliminate the proposed discounted mitigation fee.

These changes will ensure the agency's success by maximizing the emission reduction rules 1111 and 1121 can offer.

II. The Rule Should Accelerate the Sales Targets of Zero-NOx Units

To develop the right market signals, the rule must require manufacturers to make a greater percentage of zero-NOx units available sooner. The final rule should **accelerate compliance percentage targets to, at the very least, exceed the targets established by California Air Resources Board in the multistate agreement signed last year**,[1] ensuring more zero-emission appliances enter the market, which will help drive down costs.

The rule should skip the initial 70% NOx-emitting sales cap and move directly to a 50% cap for both space and water heating by 2027. In the case of space heating, an RMI analysis indicates that baseline sales of NOx-emitting units in 2027 will already be at 64%[2], meaning a 70% cap accomplishes nothing. An initial 50% cap is necessary to push the market forward.

Target Dates	2027-2028	2029-2032	2033-2036	2037 and beyond
NOx emitting units (e.g. gas)	50%	25%	10%	0%

[1] NESCAUM, Nine States Pledge Joint Action to Accelerate Transition to Clean Buildings, (February 2024), https://www.nescaum.org/documents/2.7.24-nescaum-mou-press-release.pdf.

[2] RMI analysis of 2027 sales baseline includes business-as-usual data from the REPEAT Project's Frozen Policies Benchmark (https://repeatproject.org/results comparison=benchmark&state=national&page=1&limit=25) and internal estimates of Title 24 impacts on zero-emission new construction.

Zero-emission Units	50%	75%	90%	100%

Zero-emission models offer more predictable installation costs for water heating systems and are available in 120V configurations, eliminating the need for expensive electrical upgrades. These units can be easily implemented with appropriate regulatory signals, further speeding up the transition. Additionally, the regulation should aim for a target of 100% zero emissions. This would align the regulation with the Governing Board's objective for these Rules. With a proposed 10-year time frame, this is more than enough time for the market to adjust.

III. The Fees in the Rules Must Be Increased To Ensure Zero-Emission Appliance Deployments.

The proposed amended rules create a whole new regulatory framework for the agency. The following sections outline changes to the fees needed to make that framework is successful.

A) Tier Manufacturer Alternative Compliance Fee to the Degree of Non-Compliance

The latest iteration of proposed amendments to Rules 1111 and 1121 includes a $500 fee for polluting units sold over the sales target, which increases by $100 in each subsequent compliance phase.[3] Rather than incrementally increasing the non-compliance fee each year, the Final Rule should tier non-compliance fees based on the degree of non-compliance annually. These non-compliance fees should be in addition to the standard NOx-emitting mitigation fee imposed per unit. This will better deter violations, incentivize manufacturers to minimize exceedances, and, where non-compliance is significant, generate more funds to increase the deployment of non-polluting appliances for low-income customers and help meet compliance targets the following year.

Exceedance over target (%)	**Fee Per Unit ($)**
1-10%	$500
11-20%	$750
21% or over	$1000

Accordingly, if the sale of polluting appliances should not exceed 50 percent in the first compliance period, the manufacturer would pay a $500 non-compliance fee for each polluting unit that exceeds that target by up to ten percent. For each additional non-complaint unit that

[3] *See,* Third Preliminary Draft Proposed Amendment Rule 1111 at Section (f)(2), https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-third-preliminary-draft-rule-language.pdf?sfvrsn=10.

exceeds the target by between 11 and 20 percent, the fee would increase to $750 for those units, and to $1000 for each unit that is more than 20 percent of the sales target.[4]

B) The Final Rules Should Include a Per Unit Mitigation Fee that Accounts for the Health Cost of NOx Emissions Over the Appliance's Lifetime.

While the centering of consumer "choice" in the latest revisions can be a workable framework, the Board should recognize that an individual's choice to install a polluting appliance results in community harm by locking in a new source of NOx pollution and its corresponding impacts on public health. The Final Rules should ensure that the costs of that choice to harm are properly borne by the customer making that choice. The lifetime health costs from NOx pollution from a new gas water heater are approximately $950.[5] The lifetime health costs from NOx pollution from a new residential central furnace are approximately $3,300.[6]These costs far exceed the proposed $50 mitigation fee for gas water heaters and $100 fee for gas furnaces, failing to account for the true health and environmental damage caused by these appliances. Accordingly, **the Final Rule should be revised to increase the mitigation fees for polluting appliances to $950 for water heaters and $3,300 for residential central furnaces**. These adjustments will strengthen the rule's effectiveness by ensuring that mitigation fees more accurately account for the public health costs associated with NOx pollution.

Notably, on top of failing to capture the cost of health harms, the current proposed $100 mitigation fee for gas furnaces is only 1% of the estimated $10,000 capital cost of a new furnace and is eclipsed by rebates offered by the gas industry to continue to purchase polluting appliances.[7] SoCalGas offers up to $2,250 rebates for efficient gas models, creating a stronger

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[4] As an example, if the compliance period has a 50 percent zero-NOx sales target and a manufacturer sells 100,000 units, of which 75,000 are NOx-emitting, the manufacturer would be assessed a $500 fee for each of the first 10,000 units, a $750 fee for each of the next 10,000 units, and a $1,000 fee for the remaining 5,000 units.

[5] This cost was calculated using baseline daily emissions, estimated number of units, and useful life figures from the Preliminary Draft Staff Report and the agency's health-based screening threshold. The Staff Report identifies 5,128,000 water heating units with baseline emissions of 2.32 TPD, and with water heating units having an average 15-year life. SCAQMD, Preliminary Draft Staff Report for Proposed Amended Rules 1111 and 1121 ("Preliminary Draft Staff Report") at 2-20; Table 5-1 (Sept. 2024), 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. The $383,000 in health costs per ton of NOx is taken from SCAQMD most recent cost analysis. SCAQMD, Proposed Amended Rule 1111/1121, Public Consultation (Mar. 6, 2025) at Slide 69, https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-pc-march-2025.pdf?sfvrsn=10. With 5,128,000 units in the category, an equipment life of 15 years, and a health-based valuation of $383,000 per ton of NOx, the lifetime cost of NOx pollution is $948.68 per unit. (2.32/5128000*365*15*383,000)=948.68.

[6] This cost was calculated using the same formula as in the previous note. The category emits 3.99 tons of NOx per day. With 4,200,000 units in the category, an equipment life of 25 years, and a health-based valuation of $383,000 per ton of NOx, the lifetime cost of NOx pollution is $3,320.13 per unit. (3.99/4200000*365*25*383000)=3320.13.

[7] Preliminary Draft Staff Report at 2-18.

financial incentive to stick with polluting appliances.[8] The capital cost difference between a gas furnace and a heat pump is $8,800,[9] making the proposed fee insufficient to shift consumer behavior. Even assuming an initial $500 manufacturer fee for sales that exceed zero-emission targets is passed onto customers choosing to purchase a polluting appliance, the mitigation fees from the purchase of polluting appliances is still unlikely to shift purchasing behavior. This is especially true when considering the generous rebates offered by the gas industry.

Similarly, the $50 mitigation fee for gas water heaters is less than 2% of the estimated $3,000 capital cost. SoCalGas offers rebates of $75 to $1,500 for gas water heaters[10]—again, higher than the proposed fee. With a capital cost difference of $2,200 between gas and heat pump water heaters,[11] the mitigation fee is too insignificant to influence purchasing decisions. Even at its lowest offered level, incentives for gas water heaters exceed the mitigation fee proposed for water heaters. These fees, therefore, must be significantly higher.

C) Higher Fees for Polluting Appliances Will Generate Meaningful and Reliable Funding to Ensure Zero-Emission Appliances Are Affordable for Low-Income Customers.

The Preliminary Draft Staff Report estimates 5.35 million furnaces, and 5.128 million water heaters will be impacted by the rule.[12] Annually, about 556,000 space and water heating units are replaced.[13] Assuming 70% of water heater sales in 2027 are still polluting models, the $50 per unit fee would generate $12 million—enough for only 4,000 rebates of $3,000 each out of 342,000 units sold. Similarly, assuming 70% of furnace sales in 2027 are still polluting models, the $100 per unit fee would generate $19 million, funding only 6,300 rebates out of 214,000 units sold.

Moreover, the potential for supplemental incentives from federal programs is far from assured. For example, with the Trump Administration stopping execution of awarded contracts from the Environmental Protection Agency, the California Energy Commission recently announced a hold on dispersing funds from the federal Home Electrification and Appliance Rebates ("HEEHRA") program.[14] Fees that capture appliance pollution costs both properly put

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[8] According to the Preliminary Draft Staff Report, a typical residential furnace is between 40,000 and 90,000 Btu/hr. *Id.* For a Tier III gas furnace, SoCalGas currently provides a rebate of $25 per kBtu/hr. https://www.socalgas.com/sites/default/files/2025-02/SoCalGas-Home-Energy-Efficiency-Rebate-Program-Application-2025.pdf. A Tier III 90,000 Btu/hr furnace would therefore be eligible for a $2,250 rebate (90 kBtu/hr * $25 kBtu/hr).

[9] Preliminary Draft Staff Report at 2-18.

[10] SoCalGas, 2025 Home Energy Efficiency Rebate Program Application.

[11] Preliminary Draft Staff Report at 2-20.

[12] *Id.* at 5-2 (Table 5-1).

[13] Assuming a 25-year useful life for a furnace and a 15-year useful life for a water heater- translating into 214,000 furnace and 342,000 water heater installations each year.

[14] Tech Clean California, HEEHRA Rebates Paused (Feb. 2025), https://techcleanca.com/about/news/heehra-rebates-paused/.

these costs on manufacturers supplying polluting appliances and generate meaningful and sustained funding to ensure zero-emission appliances are affordable for low-income customers.

IV. The Proposed Discounted Rate for Over-Compliance Should Be Eliminated

The proposed discounted mitigation rate for manufacturers exceeding zero-NOx requirements in one year should be removed. While intended as an incentive, it risks undermining early gains by encouraging manufacturers to increase production of NOx-emitting appliances later and pay a lower fee. Rather than accelerating progress, this loophole could incentivize backsliding and delay full market transformation.

V. Conclusion

The stakes are too high not to move towards a zero-NOx standard for these sources, and the latest draft is a disappointing compromise that significantly weakens the expected emission reductions. Fortunately, there is still time to course correct by accelerating the compliance timeline, tiering non-compliance fees to levels of non-compliance, raising mitigation fees to reflect actual pollution costs, and eliminating unnecessary and counterproductive discounts in the fee structure. We look forward to working with you to see this rule passed by the Governing Board in May.

Sincerely

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