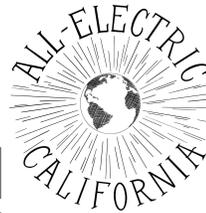




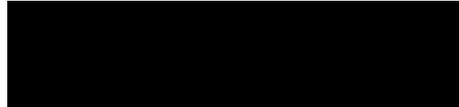
ACTION FOR A HEALTHY PLANET



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EARTHJUSTICE
BECAUSE THE EARTH NEEDS A GOOD LAWYER

September 26, 2025

Bay Area Air District
375 Beale Street, Suite 600
San Francisco, CA 94105

Subject: Recommendations for flexibility amendments to Rule 9-6

Dear Air District staff,

The organizations signed below write in support of an equitable transition to a clean-energy economy in the Bay Area and applaud the Air District for the policy leadership it showed by amending Rules 9-4 and 9-6 in March 2023 to reduce the significant emissions of smog-forming nitrogen oxides (NO_x) from furnaces and water heaters. The region's gas-burning appliances in buildings emit more NO_x pollution than all passenger vehicles¹—and more than six times as much NO_x as all the power plants in the region combined.² Eliminating this pollution is expected to avert 15,000 asthma attacks and up to 85 premature deaths each year, with total annual health benefits of up to \$890 million.³

Provisions of Rule 9-6 that impact the sale and installation of new gas tank water heaters (with a heat input rating up to 75,000 Btu/hour) are due to go into effect on January 1, 2027.⁴ Following input from an Implementation Working Group that examined the issues and challenges surrounding a transition to zero-emission water heaters in 21 meetings between May 2023 and August 2024⁵—and responsive to the Board of Directors' discussion of staff's December 2024 interim readiness report⁶—the agency will soon undertake a rulemaking to introduce common-sense flexibility measures into Rule 9-6. These flexibility amendments will ensure that, as the region pursues its gradual transition to clean water heating, the Air District's regulation minimizes unintended harms to vulnerable communities, grants exceptions for infeasible installations, and provides additional workability for residents who need it.

Some recommendations for appropriate flexibility amendments to Rule 9-6 follow, focused on equipment covered under the January 2027 compliance date.

¹ Bay Area Air Quality Management District (BAAQMD), [Final Staff Report: Proposed Amendments to Building Appliance Rules – Regulation 9, Rule 4: Nitrogen Oxides from Fan Type Residential Central Furnaces and Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters](#), p.4, March 2023.

² U.S. Environmental Protection Agency, [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.

³ BAAQMD, [Final Staff Report](#), pp. 30-31, 40.

⁴ BAAQMD, [“Regulation 9: Inorganic Gaseous Pollutants, Rule 6: Nitrogen Oxides Emissions From Natural Gas-Fired Boilers and Water Heaters,”](#) March 2023.

⁵ BAAQMD, [“Building Appliances Implementation Working Group.”](#)

⁶ BAAQMD, [“Informational Update Regarding Regulation 9, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters less than 75,000 BTU/hr,”](#) December 2024.

Program Design Principles for Flexibility Measures

The Air District's Implementation Working Group identified and studied a range of challenges that some buildings in the region could face in making the transition to zero-emission water heating equipment. Some examples of these challenges include:

- Finding appropriate compliant equipment that fits the current physical space constraints, or needing to relocate equipment;
- Providing the airflow needed for heat pump water heaters (HPWHs) in tightly enclosed spaces;
- Upgrading or upsizing building electrical panels or wiring, in cases when employing Power Efficient Design choices to avoid these costs and delays proves infeasible; and
- Funding and/or financing the incremental upfront cost of compliant equipment.

It's critical that the amended rule includes enough flexibility to address cases where challenges like these make compliance genuinely infeasible, while still providing a strong, clear market signal that drives critical emission reductions. As such, these principles are important for the Air District to consider as it crafts flexibility measures for Rule 9-6:

- **Prioritizing market transformation at the outset will increase emission reductions over time** – To meet air quality goals, an expedient effort to install zero-emission equipment at scale is vital. Allowing exceptions as the region initially eases into the program would change the overall emission reduction trajectory minimally and would support the proper market conditions for a successful program in the long term by avoiding infeasible install scenarios and averting negative experiences with zero-emission equipment.
- **Prioritize low- and moderate-income (LMI) households** – Flexibility measures should serve the purpose of easing the region's transition to zero-emission equipment, but housing conditions may lead to more LMI households qualifying for exceptions, potentially leaving them to shoulder the burden of stranded gas assets and increasing gas rates in the coming decade. New and existing resources, including direct install programs, incentive programs, and other supportive policies and programs should be prioritized for LMI residents to ensure they share in the benefits of clean equipment.
- **Craft positive customer, installer, and supplier experiences** – Flexibility measures should be designed to work smoothly for customers, contractors, and other supply chain actors without creating undue burden. Exceptions should be granted swiftly so residents do not experience an extended delay in having reliable hot water. Good experiences with the transition to clean equipment will compound, maintaining public support for the program and minimizing negative impacts.
- **Education will drive compliance** – While it's important that flexibility be available in cases of infeasibility, strong public education to multiple targeted audiences must be built into the exception process to ensure that residents are informed on the benefits of zero-emission technology and the available solutions to common feasibility concerns.
- **Collect data on exceptions** – The Air District's exception process should be designed so that useful data is collected on any situations requiring noncompliance, allowing complementary programs to be tailored to address the most salient conditions driving

exceptions. Anonymized data should be made publicly available so that third parties can also target work on enabling reforms.

Building upon the framework that staff introduced in their April 2025 update to the board's Stationary Source Committee,⁷ the following recommendations on Rule 9-6 flexibility measures cover two categories of exceptions:

- 1) **Equipment-Based Exceptions** that extend the opportunity for residents to purchase certain categories of polluting equipment where zero-NOx models could use additional time for product development and commercialization; and
- 2) **Project-Based Exceptions** that take into account case-by-case hardship barriers that impact feasibility of compliance for owners of existing buildings.

Equipment-Based Exceptions

As adopted, Rule 9-6 subjects all gas water heating equipment with a heat input rating of 75,000 Btu/hour or less to the same regulatory requirements. It would be appropriate to identify specific equipment and installation types within that broader category that could use additional time for product development and commercialization—and to postpone effective dates for that specific equipment to allow market actors to better prepare for successful implementation.

1. Water heaters 35 gallons and smaller

Some stakeholders have expressed concern that units of this size may have increased difficulty transitioning because space constraints can preclude the installation of standard HPWH form factors of that size class in certain building configurations. The Northwest Energy Efficiency Alliance's Hot Water Innovation Prize is focused on the development and commercialization of novel split system HPWHs in this size category that will address such space-constrained installs.⁸ Prize winners will be announced in late 2026 or early 2027, with demonstration projects planned for 2027 to 2028. According to the Advanced Water Heating Initiative, customers should have good options for split system HPWHs of 35 gallons and smaller by 2029.⁹

With knowledge of the work underway to innovate solutions for this size category, an extension of the Rule 9-6 effective date from January 2027 to January 2030 would be prudent for water heating equipment up to 35 gallons. This extension will provide useful time for the market to develop and commercialize extremely efficient, zero-emission small water heaters.

2. Water heaters utilized for high-temperature applications (i.e., above 160°F)

Based on a survey of specification sheets for available equipment, standard HPWHs with a heat input rating of 75,000 Btu/hour or less have a maximum outlet water temperature of 140–160°F. Older hydronic heating systems in residential buildings may require higher output temperatures than this for effective performance, so an extension of the Rule 9-6 effective date from January 2027 to January 2030 may be needed for these specific changeouts to allow for additional product

⁷ BAAQMD, "[Stationary Source Committee Meeting - Wednesday, April 9, 2025 - Approved Minutes](#)," April 2025.

⁸ Northwest Energy Efficiency Alliance, "[Hot Water Innovation Prize](#)."

⁹ J. Holtzman, Personal communication, March 20, 2025.

development. Conversely, many households have retired their legacy hydronic heating in favor of air-source heat pumps—so, as the Air District considers future implementation of Rule 9-4’s provisions on zero-emission *space* heating in January 2029 and beyond, it should investigate the feasibility and affordability of transitioning legacy hydronic heating systems using NOx-emitting boilers to zero-emission space heating options.

Important commercial and institutional end uses like food service, health care, laboratories, and dry cleaners may also require higher output water temperatures for their business processes. An extension of the Rule 9-6 effective date from January 2027 to January 2030 for this high-temperature equipment would be reasonable if needed.

It is unclear, however, to what extent these commercial and institutional settings employ equipment with a heat input rating of 75,000 Btu/hour or less. These end users more likely utilize larger equipment covered by the January 2031 effective date of the rule, and it would be premature at this time to introduce flexibility measures that are based on *current* market conditions for rule provisions that are still more than five years away from implementation. Air District outreach to potentially affected high-temperature business sectors will be important to assess the degree to which they will be impacted by the rule’s January 2027 effective date and require flexibility.

Project-Based Exceptions

Along with the equipment-based exceptions recommended above, it would be prudent to target some exceptions based on site-level conditions on a case-by-case basis to avoid undue hardship for owners of existing buildings where compliance would be infeasible. Continued market transformation and solution development will reduce the need to utilize these exceptions as implementation progresses.

Exceptions should only be needed for equipment replacements in existing buildings. Because new buildings can be designed from the start to meet equipment requirements—and doing so is more cost-effective¹⁰—project-based exceptions aren’t necessary for this market segment.

1. Emergency replacements

Since most water heaters are replaced upon failure, it is imperative that hot water service be restored as quickly as possible.¹¹ When a challenge prevents the quick installation of comparable non-emitting equipment, Rule 9-6 should allow for “loaner equipment” to be installed on a temporary basis for up to 6 months to allow time for addressing any physical or electrical issues preventing compliance. Loaner programs should encourage the use of 120-volt HPWH units wherever feasible, but allowing for NOx-emitting equipment to be utilized for up to 6 months will provide wide flexibility to building owners as they complete any needed work to ameliorate physical or electrical barriers to compliance..

¹⁰ RMI, [The Economics of Electrifying Buildings: Residential New Construction](#), 2022.

¹¹ CalNEXT, [Emergency Replacement Heat Pump Water Heater Market Study](#), June 2024.

The development of a coordinated program that provides coverage across the Bay Area’s nine counties will be necessary for residents to participate reliably and at scale. Given its regional role, the Air District should consider supporting the creation of such loaner programs, either directly or through other entities like CCAs, equipment distributors, etc.

2. Space-constrained installs

Rule-compliant HPWHs sometimes require more physical space to install than the comparable equipment that they are replacing. In addition, HPWHs have requirements for a minimum amount of air volume or ventilation in the space they occupy in order to function effectively.

In some cases, it can be very difficult or costly to modify the existing installation space to accommodate a HPWH or to relocate the water heater to an appropriate space. The Air District’s December 2024 interim readiness report highlights space-constrained installations as a category of “edge-case” installations with costs and project timelines that are well above average.¹² In such cases, Rule 9-6 can (1) direct building owners to loaner programs to allow sufficient time for the modifications needed for a compliant installation to progress more feasibly and cost-effectively—or (2) grant building owners an exception for the installation of NOx-emitting equipment for its full lifetime if an installer certifies that a compliant installation is infeasible.

3. Electrical infrastructure-constrained installs

In some cases, constraints on electrical service, panel size, or building wiring may prevent the installation of a suitable non-emitting water heater; these conditions are also cited as a reason for “edge-case” installations in the Air District’s interim report.¹³ These cases should be relatively rare, given the increasing availability of 120-volt HPWHs and the minimal load that water heaters place on an electrical system.

Some amount of new or upgraded wiring would be expected when installing new electric equipment, but it makes sense to provide flexibility when electrical upgrades would be prohibitively expensive or onerous. In such cases, Rule 9-6 can (1) direct building owners to loaner programs to allow sufficient time for the modifications needed for a compliant installation to progress more feasibly and cost-effectively—or (2) grant building owners an exception for the installation of NOx-emitting equipment for its full lifetime if an installer certifies that a compliant installation is infeasible.

Installers would benefit from coordinated education from the Air District and/or other regional or state experts about Power Efficient Design strategies and concerted encouragement to utilize these approaches whenever possible to minimize expenses for building owners and the need for major upgrades.^{14,15}

¹² BAAQMD, [Informational Update Regarding Regulation 9, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters less than 75,000 BTU/hr](#), December 2024.

¹³ Ibid.

¹⁴ Consortium for Power Efficiency/Dunsky, [Overview of Power Efficient Design Strategies](#), December 2024.

¹⁵ SPUR, [Solving the Panel Puzzle: Avoiding and streamlining electric panel and service upsizing to accelerate building decarbonization](#), May 2024.

4. Income-based flexibility

Currently, the upfront cost for installing efficient, non-emitting equipment often exceeds the cost of like-for-like replacement with polluting equipment, which can present a serious hardship for low-income households. Although there is currently insufficient funding for every qualified household to receive support, a number of programs already exist to help low- and middle-income customers purchase HPWHs. To drive equitable implementation of Rule 9-6, the Air District will need to work with state programs, utilities, and other entities to help provide expanded support for low-income households to afford any additional costs of upgrading to clean equipment.

Ideally, low-income households would be upgraded to zero-emission equipment at rates as fast or faster than the community average so that they and their neighbors could share in the many benefits of such a transition. Funding to support that transition remains limited, however, and it is harmful to require low-income households to pay for upgrades they cannot afford. Thus, additional flexibility in this area seems necessary.

In concert with new financial support from the Air District and other parties, Rule 9-6 can grant homeowners with income below 80% of the Area Median Income an exception for the installation of NOx-emitting equipment for its full lifetime, based on self-attestation of income. Prior to and during the process of self-attestation, residents who qualify for this exception should be directed as often as possible toward resources that can help them transition to zero-pollution equipment at lower cost. For rental units, exceptions should be limited to cases where the costs of upgrades would be passed through to low-income households, causing an untenable burden for them.

Granting Exceptions

Any system for exceptions must be designed to be practical for building owners and installers as well as equipment distributors and retailers. Such a system must also be designed for practical implementation by the Air District itself.

A system that allows for building owners and equipment installers to attest to the need for an exception via an online web-based form meets these needs. After completing the application, exceptions would be automatically approved, with certification thereof made available to the installer and/or directly to parties that have been authorized by the Air District to sell non-compliant equipment with a certificate of exception.

The attestation and waiver model could work as follows:

1. The installer assesses the feasibility of installing compliant equipment with the building owner and determines an exception is warranted.
2. The installer navigates to the Air District attestation and waiver website and:
 - a. Completes a cascading series of dropdown menus that guide compliance and collect data to inform future complementary policy efforts, enforcement strategies, funding streams, etc.;
 - b. Signs the web form under penalty of perjury; and

- c. Is automatically granted a waiver tied to the specific installation under question.
3. The installer then uses the waiver to purchase the NOx-emitting equipment from a distributor or retailer, with the seller tying the serial number of the polluting equipment to the waiver at the time of purchase. Prioritizing zero-NOx water heaters on showroom shelves will help accelerate market development and support industry alignment with emerging standards. .
4. The Air District maintains access to the waiver and all data collected therein and also maintains the right to audit waiver grantees and verify elements of their attestation form.

The Air District attestation webform should include the following:

Initial form information: Users of the attestation system should be informed that they are required to answer truthfully under penalty of law. Users should be encouraged through the interface to install compliant equipment whenever possible and directed toward supportive resources and information for doing so. And users should be informed of the negative health consequences resulting from the operation of gas-fired water heaters, including the estimated health impacts over the lifetime of the unit.

Basic user information: Users will fill out basic information, including the location of the install and the installer assessing the need for an exception.

Pre-requisites for requesting an exception: Users must attest that they are requesting an exception for an existing building, for a replacement of gas equipment, and that the feasibility of installing compliant zero-pollution equipment was assessed.

Exception attestation inputs: The form will include cascading dropdown menus that will identify which, if any, exceptions for which the project qualifies. These menus will include expanding sections for space-constrained installs, electrical infrastructure-constrained installs, and income-based flexibility, as described above. Each section will provide checklists for the user to identify specific constraint details, and users will be prompted to verify whether they have pursued common solutions (e.g., low-cost ventilation measures, Power Efficient Design strategies, exploration of rebates and supportive programs, etc.).

Final signature and waiver: If the answers in the attestation inputs section qualify the user for a waiver, the user will be directed to the final page, where they will sign and submit the attestation under penalty of perjury and be granted a waiver automatically.

Conclusion

The above principles and flexibility measures will strengthen the transition to zero-emission water heating by offering off-ramps for building owners who would otherwise face undue hardship and infeasible installation scenarios. The equipment and project-based exceptions proposed offer robust flexibility while maintaining Rule 9-6's trajectory toward market transformation, an equitable transition, and large-scale reductions in harmful NOx emissions. The proposed project-based

exceptions pathway also offers the benefit of a strong data collection platform that will allow the Air District, program implementers, and third parties to respond to salient conditions that are driving exceptions.

We thank the Air District staff for their consideration of these recommendations for flexibility amendments to Rule 9-6 and for their leadership in reducing health-harming, smog-forming NOx emissions from gas water heaters and furnaces.

Respectfully,

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