



Rule 9-6: Flexibility and Affordability Amendments for Zero NOx Water Heaters

Board of Directors Meeting

May 13, 2026

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Regulatory Development Division



Presentation Outline

- I. Rule 9-6 Background and Overview
- II. Need for Flexibilities
- III. Summary of Potential 9-6 Amendments
- IV. Common Questions and Concerns
- V. Next Steps and Discussion

Recommended Action

Discuss and provide input on staff recommendations or alternative approaches.

Abbreviations

AMI: Area median income

BTU/hr: British thermal units per hour; measure of heat energy

CARE: California Alternate Rates for Energy

CEC: California Energy Commission

CEQA: California Environmental Quality Act

CPUC: California Public Utilities Commission

FERA: Family Electric Rate Assistance Program

HPWH: Heat pump water heater

M: Million

NOx: Nitrogen Oxides

PG&E: Pacific Gas and Electric

PM: Particulate matter

PM_{2.5}: Fine particulate matter

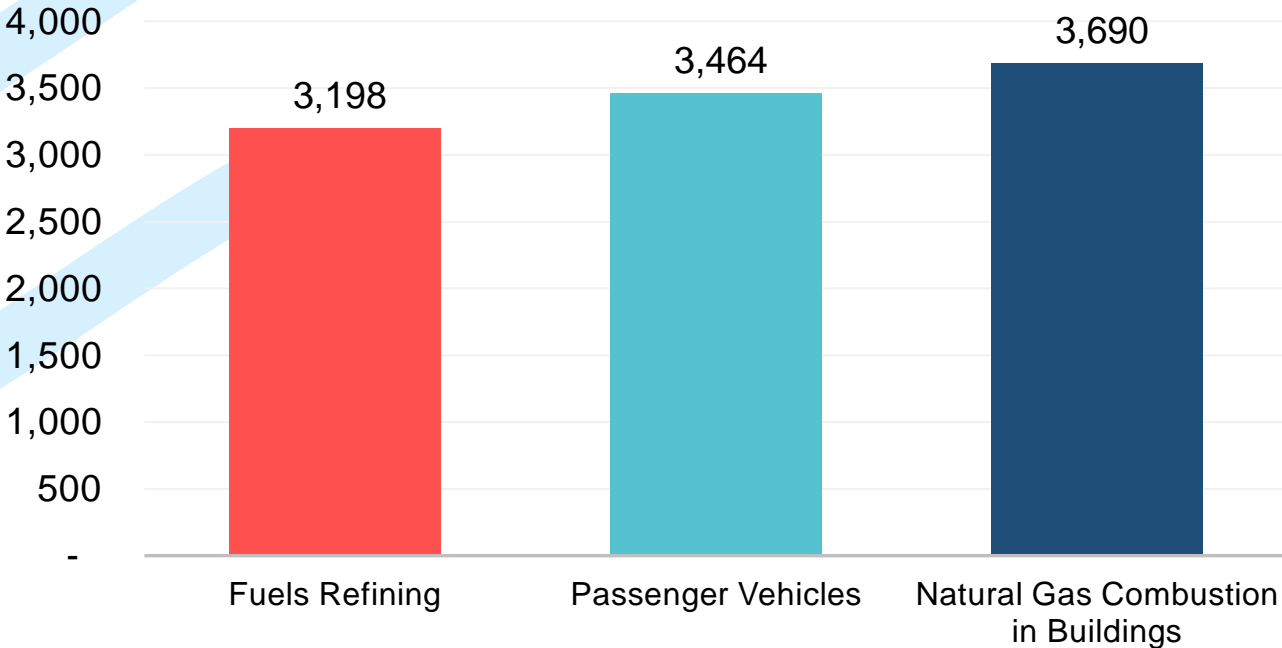
WIC: Women, Infants and Children (supplemental nutrition program)

**Part I. Why did Air
District Board of
Directors adopt zero NOx
standards for furnaces
and water heaters?**

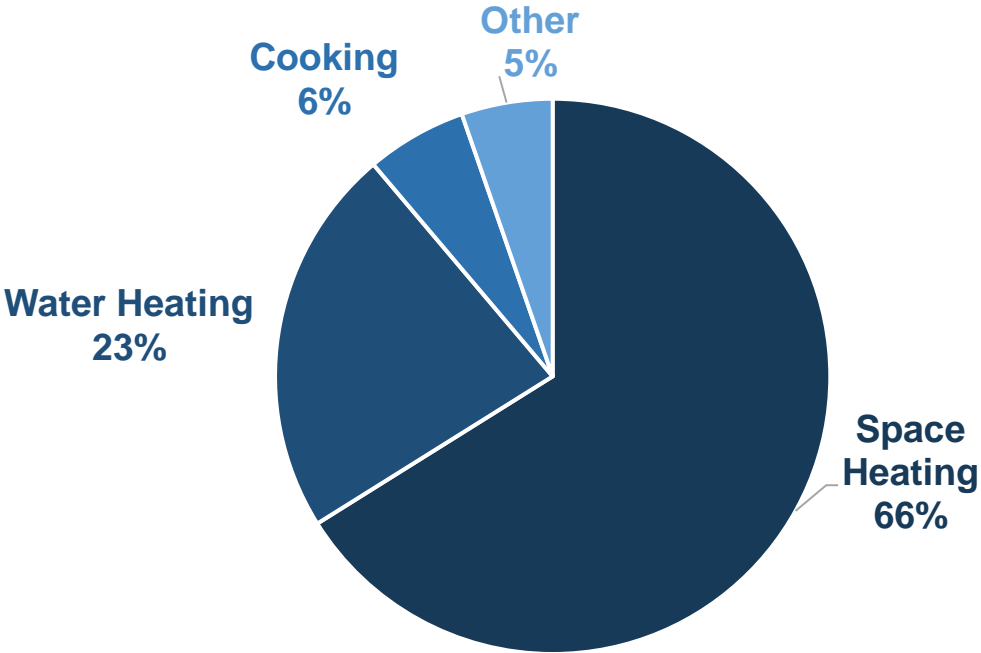


NOx Emissions from Buildings

2019 Air District NOx Emissions (tons)



Air District Residential Natural Gas Combustion NOx Emissions (2019)

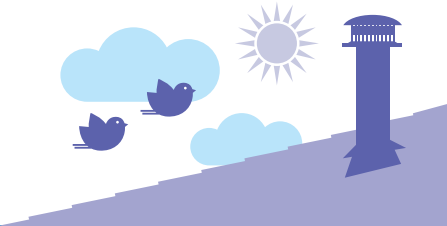


Major Health Benefits from Rules 9-4 and 9-6

These appliance rules help improve regional air quality by reducing pollution from furnaces and water heaters.

Cleaner outdoor air

Less NOx and PM_{2.5} from venting



Lower pollution means lower exposure to fine particles (PM_{2.5}).

Cleaner Bay Area communities

Biggest PM_{2.5} reductions in communities of color and overburdened neighborhoods



Reducing PM_{2.5} and NOx exposure can prevent dozens of early deaths every year in the Bay Area.

Up to 85 early deaths avoided
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Health improvements from cleaner air avert unnecessary costs from health impacts.

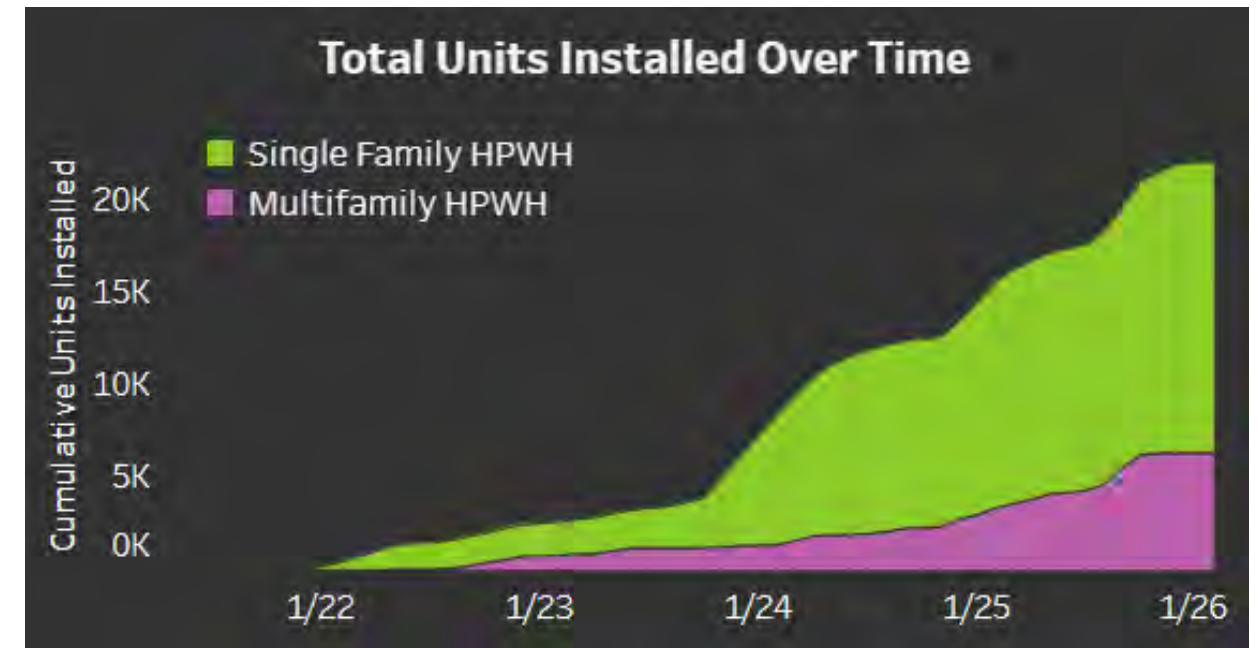
Up to \$890M

Annual health benefits saved in avoided illnesses, hospital visits, and early deaths



Zero NOx Water Heater Technology is Widely Available

- Diverse technology options available for installation
- 20,000+ units installed in the Bay Area and growing



Source: [TECH Public Reporting Heat Pump Data Visuals](#)

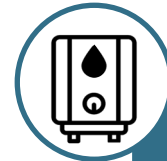
Zero NOx Standards – 2023 Amendments

- NOx standards within Rule 9-4 (furnaces) and Rule 9-6 (water heaters) have been in place for almost four decades
- Standards have **gradual phase-in**: all new sales or installations of units manufactured after compliance dates

1/1/2027	Water heaters less than 75,000 BTU/hr
1/1/2029	All applicable natural gas-fired furnaces (e.g., residential and commercial; including direct-vent units)
1/1/2031	Water heaters 75,000 to 2 million BTU/hr

- Staff update to the Board due two years prior to each compliance date

Implementation Working Group Phase 1 Small Water Heaters



**Technical
Readiness**



**Equitable
Transition**

40+ members

**Environmental
Justice and
Community-
Based
Organizations**

**Subject Matter
Experts on
Energy,
Buildings, and
Technology**

**Regional/Local
Government
and State
Agencies**

**Labor and
Trade
Organizations**

**Utilities and
Community
Choice
Aggregators**

Meetings

6 Public
Plenary

5 Steering
Committee

5 Technical
Subcommittee

5 Equity
Subcommittee

Board and Committee Timeline

Date	Venue	Summary
March 15, 2023	Board of Directors	Adoption of zero NOx amendments to Rules 9-4 & 9-6 Board directed staff to come back with a Rule 9-6 implementation report in 2024
December 4, 2024	Board of Directors	Informational report on staff's research and a summary of IWG findings for Rule 9-6 implementation
October 24, 2025	Public Comment Period	Public Release of Rule 9-6 Concepts Paper (flexibility options) informed by Phase I of the IWG
December 10, 2025	Stationary Source Committee	Presentation on potential flexibility amendments based on affordability and availability issues for Rule 9-6 Committee directed staff to come back with information on possible exemptions for low-income property owners
February 11, 2026	Stationary Source Committee	Presentation on the definition of "low-income" including considerations for housing cost burden and how much it costs to help low-income households switch to zero NOx water heaters Committee directed staff to return in May 2026 with a full set of proposed changes so the full Board can give clear directions on how to proceed with the rule

Release of the Regulatory Overview



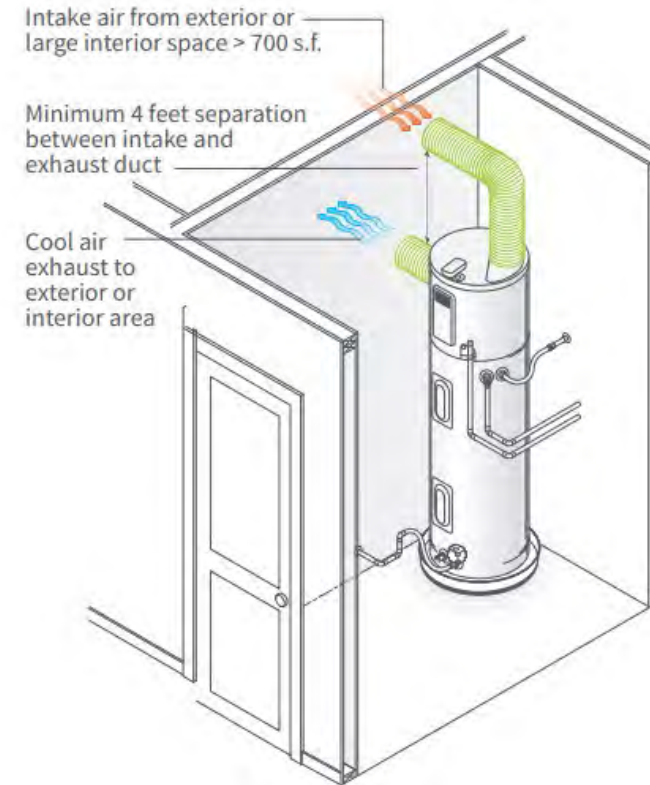
- Highlights steps taken since the adoption of the 2023 amendments to Rule 9-6
- Additional background information and details on flexibility and affordability amendments
- Released April 13, 2026

Part II. Why do Rule 9-6 zero NOx standards for water heaters need flexibilities?

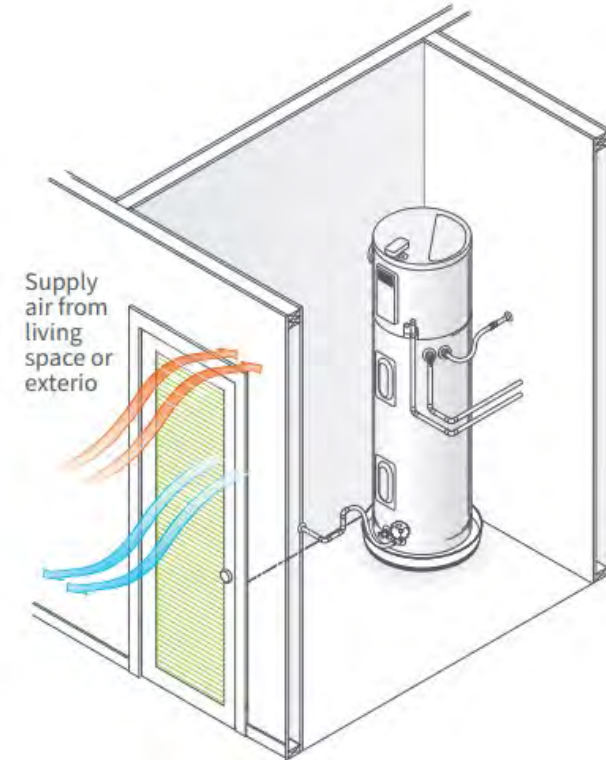


Space Constraints

- HPWHs take up more space
 - *confined spaces (e.g. closets) may not physically fit the larger HPWH*
- HPWHs need sufficient air to pull heat from; most manufacturers recommend at least 700 ft³ of space
 - *some installs can use venting measures to allow installs in smaller spaces*
- Smaller HPWH technology still under development



> Ventilate with air ducts



> Ventilate with louvered doors

Source: www.peninsulacleanenergy.com

Electrical Constraints

- In some cases, complex electrical work and panel and utility service upsizing can result in higher installation costs and long timelines
 - 120-volt plug-in HPWHs can help for some homes
- “Watt diet” or panel optimization strategies could be deployed in 32% of single-family homes and 59% of multi-family homes in California to avoid panel and service upsizing



Source: Granger.com

Costs Associated with Implementation

Zero NOx Average Additional (Incremental) Costs:

- Approximately \$3,500 (\$600-\$1,600 additional retail cost for equipment, plus installation)
- Rebates where available will offset some incremental costs
- Operational cost savings may offset some upfront incremental costs over time
- Median incremental costs are similar to the average



Cost Distribution of Replacement Projects



Source: Appendix A of Staff Report: Informational Update on Rule 9-6 & TECH Clean CA
December 2023

- Majority of ~4,000 Bay Area HPWH projects evaluated were close to the median and average of ~\$7,000 for total equipment and install costs
- Program data showed some outliers and high-cost projects due to:
 - Electrical upgrades
 - Water heater relocation

Incentive Availability

- Federal, State and local incentives are currently available
- Not enough current funding to cover incremental costs for all Bay Area low-income homes beyond the next few years

THE SWITCH IS ON

Zipcode Water Heating

SEARCH

SEARCH
for local incentives by location, specialty and more.

CONNECT
with trusted contractors, in our contractor directory

(-) HEAT PUMP WATER HEATER

INCENTIVE LOOKUP FOR CUSTOMERS

INCENTIVE TYPE ▾

REBATE
 FINANCING

EQUIPMENT TYPE ▾

Heat Pump Water Heater

INCENTIVE PROVIDER ▾

Source: www.switchison.org

Part III. What are the proposed flexibility exemptions?



Objectives of Exemptions

1. Address **affordability** and the **drivers** of high cost
2. **Simple** and **automated** process
3. Continued sales for equipment lacking zero NOx options



Source: istockphoto.com

Categories for Rule 9-6 Compliance

Qualifying Exemptions *(one per property)*

- Electrical and/or Space Constraints (Main Drivers of High Installation Costs)
- Low-Income Property Owners

Delayed Compliance Dates *(until 2031)*

- Small Capacity Units (<30 gallons)
- Large Capacity Units (>75,001 BTU/hour)*
- Hydronic Systems

Limited Exemptions *(if requirements are met)*

- Emergency Replacement Loaners
- Businesses with High-Heat Demand

**MOST
COMMON**

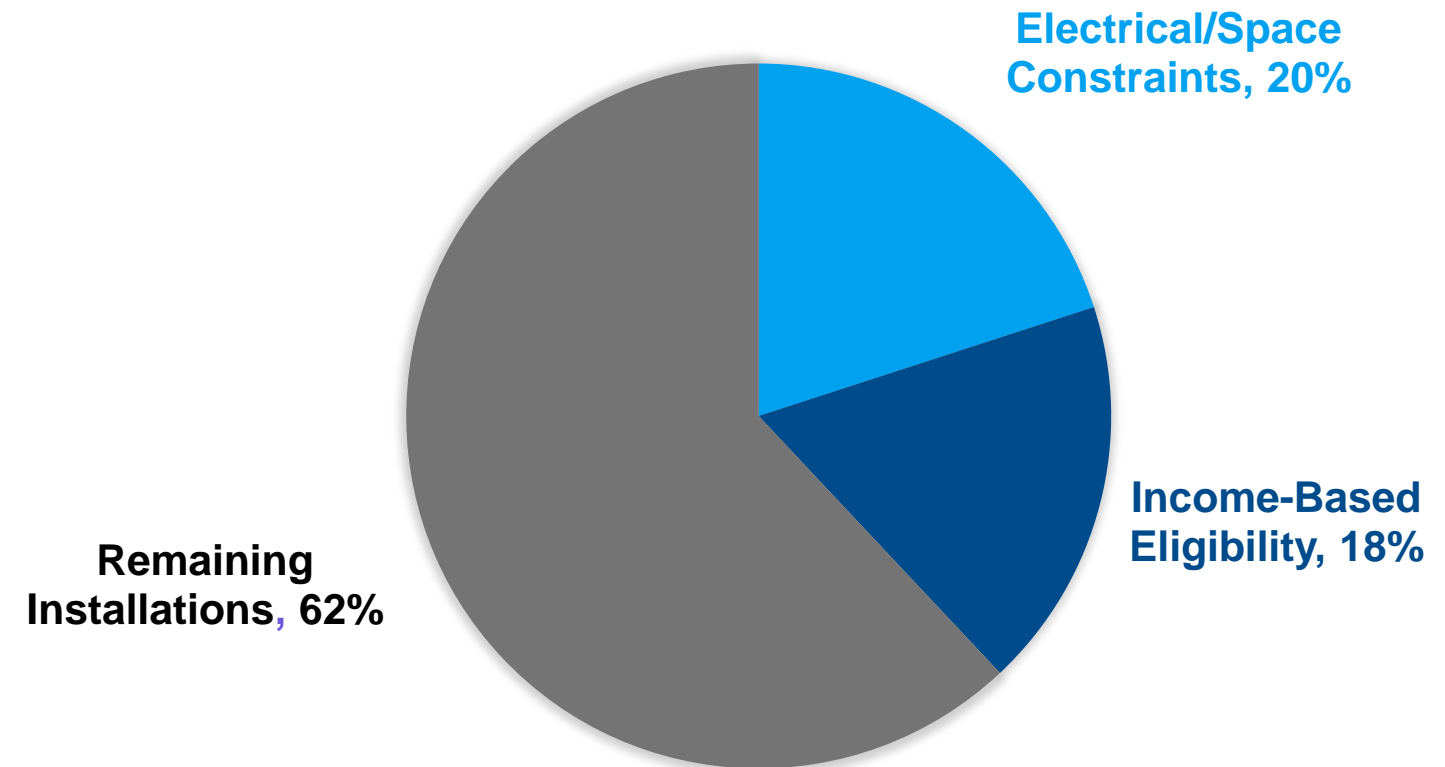
**LEAST
COMMON**

*Note: Large capacity unit compliance date is existing requirement, not planned change

Total Estimated Exemptions

- Staff estimate up to 38% of water heater installations would qualify for exemptions

ESTIMATED ANNUAL DISTRIBUTION OF EXEMPTION PATHWAYS



Project Cost Impacts

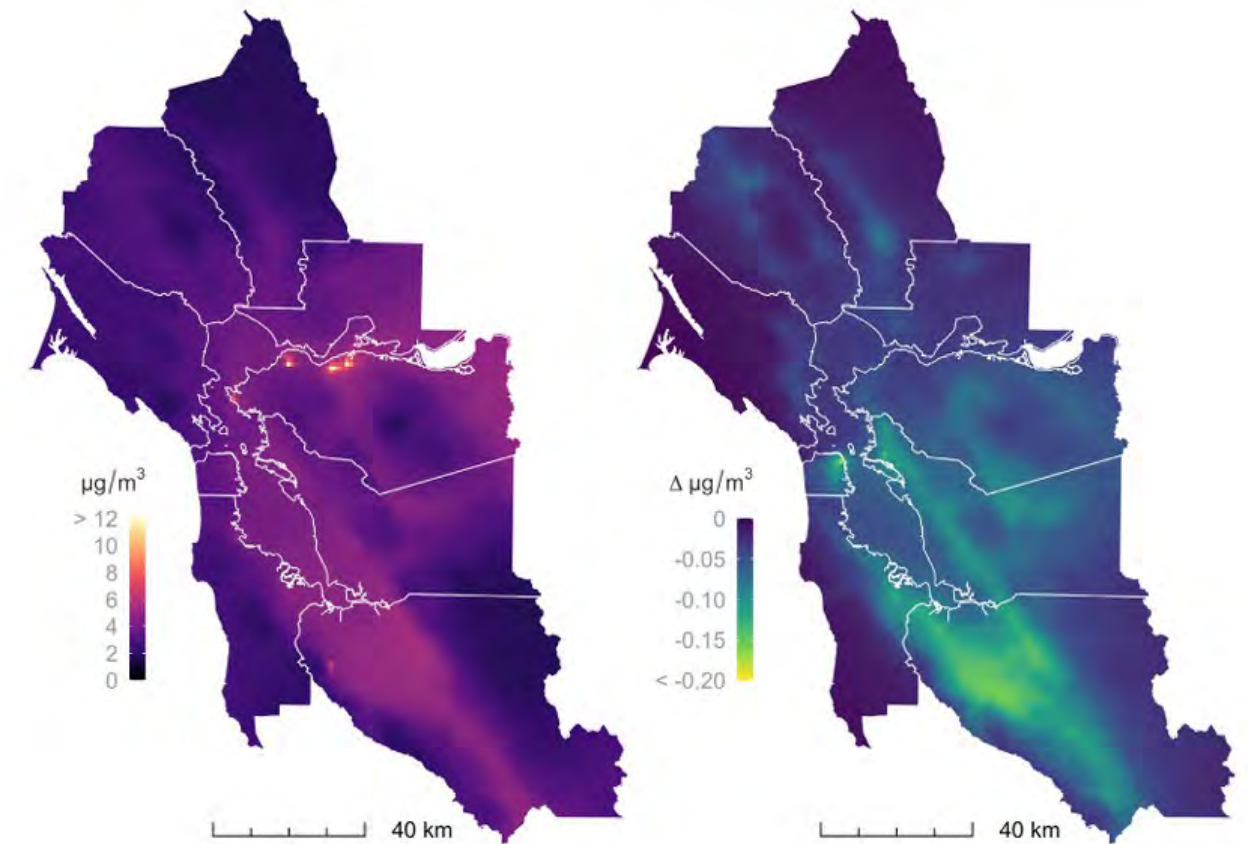
- Remaining projects will be “standard” installs
 - Incremental costs expected to remain ~\$3,500
- Majority of project costs due to extra labor required (new electrical and drain lines; cap gas line; etc.)



Source: www.istockphoto.com

Public Health Impacts

- Exemption locations are uncertain at this time
- Maintains regional benefit due to the reduction on $PM_{2.5}$
- Emissions reductions will take longer to achieve due to exemptions



Baseline concentrations (left) and reductions (right) for secondary $PM_{2.5}$ (Source: 2023 Rule 9-6 Staff Report)

Low-Income Qualified Property Owner

Defined as:

- Property owners that are either low-income program participants (250% Federal Poverty Guidelines) OR
- Housing cost burdened (annual mortgage and property taxes \geq 28% of gross income).

Pros:

- Streamlines determination and customer experience (no annual county- or household-specific income thresholds)
- Provides relief for potential affordability issue
- Aligns with programs e.g. FERA, CARE, WIC

Cons:

- Other designations e.g. 80% AMI more typically used by some HPWH incentive programs

Project Specific Exemptions Require Contractor

Pros: Contractors will:

- Have knowledge needed to accurately evaluate technical options
- Be more capable of staying up-to-date on growing technology landscape

Cons:

- May increase time and costs for property owners who may normally self-install



Source: istockphoto.com

One-time Exemption Per Project Address

Pro:

- Provides building owner ~13 years to prepare for zero NOx installation for next water heater, starting from 2027

Con:

- May still have high costs upon future installation



Source: istockphoto.com

Processing Fee for Exemptions

- No processing fee for low-income exemptions, only for project-specific exemptions
- Consideration of increased fee to fund low-income rebates

Cost recovery:

$$\begin{array}{ccc} \begin{array}{c} \text{Annual Implementation} \\ \text{Expenses} \\ \sim \$3 \text{ million} \end{array} & \div & \begin{array}{c} \text{Expected Annual Project} \\ \text{Specific Exemptions} \\ \sim 24,000 \end{array} & = & \begin{array}{c} \text{Processing Fee} \\ \$125 \end{array} \end{array}$$

Delay to October 1, 2027 Effective Date

Pros: Provides time for:

- Development and testing of exemption system
- Better alignment with retailers, manufacturers, distributors & contractors
- Increased training of staff & participating stakeholders
- More property owner outreach

Cons:

- Emissions benefits deferred 9 months



Part IV. Common Questions and Concerns

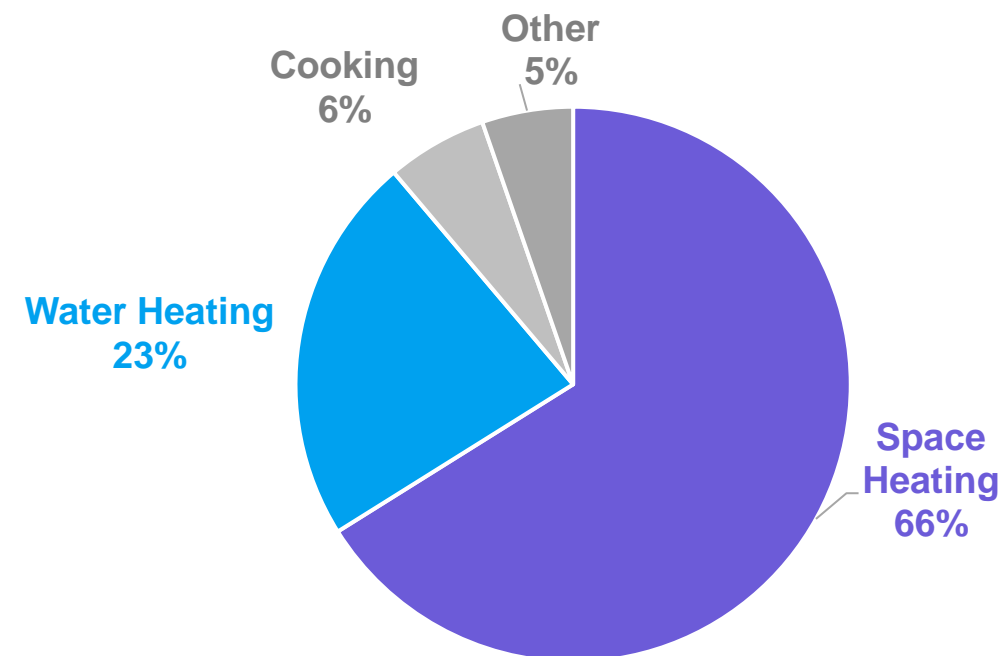


Stoves or Whole Home Electrification?

Rules 9-4 and 9-6:

- DO NOT require immediate replacement of working appliances
- DO NOT affect stoves, clothes dryers, fireplaces, or any other gas appliance
- DO NOT require whole home electrification or discontinuing gas service
- DO focus on reducing NOx emissions that impact regional air quality

Air District Residential Natural Gas Combustion NOx Emissions (2019)



Socioeconomic Impacts?

- The Air District completed an extensive review of the socioeconomic, environmental, and electric grid impacts of the rules in 2022, including:

Direct impacts of increased compliance costs

Potential equity impacts at the household level

Potential shifts in consumer spending and job losses

Impacts to electric grid capacity, reliability and related costs

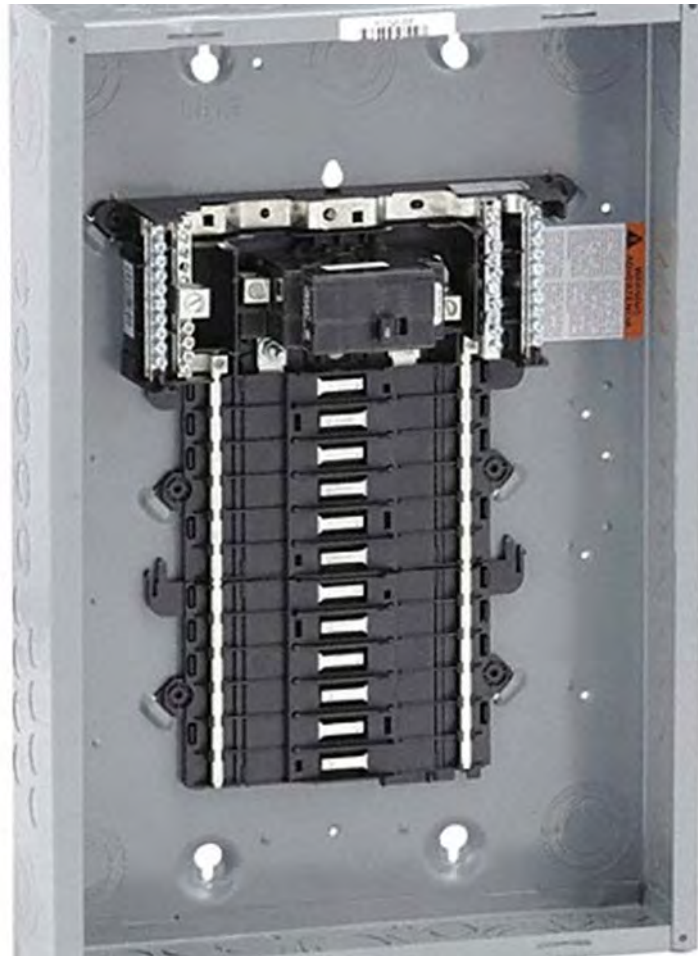
Air District costs to implement the proposals

- Stakeholders consider this analysis to be a good model for enhanced regulatory analyses going forward
- We will update this analysis with new information for the affordability amendments

High Expense to Property Owners?

- Exemptions for space and electrical constraints are designed to avoid situations that would result in high-cost installations
 - The incremental cost is a one-time cost of \$3,500
 - Existing incentives and rebates will bring that cost down, especially for low-income property owners
- The low-income exemption is designed to help property owners who cannot afford these costs, even with available incentives
- Remaining non-exempted installations will be low or moderate cost and for those who can better afford it
- The health benefits from these one-time upgrades last forever

Panel and Service Upsizing?



Source: Granger.com

Requirements for Contractor Certified Exemption for Electrical Constraints:

- The home/building has knob-and-tube wiring.
- The electrical panel is <100 amps (single-family) or <60 amps (multi-family)
- The electrical panel does not have enough circuit or breaker space
- New 240v connection requires more than 50 feet of wiring/conduit
- Utility service upsizing is needed

Housing Costs and Displacement Impacts?



All-electric new construction is less expensive



Exemptions address all identified significant cost/affordability drivers



Cities where most renters live have strongest renter protections



Exemption pathways will limit need for large-scale renovations that could cause displacement

Equity Concerns with Low-Income Exemption?

Property Owners

- The exemption only applies to property owners; there will still be substantial conversion to clean equipment in overburdened communities

Regional Benefit

- A large part of the health benefit from the rule is from NO_x that converts to PM over time; these health benefits accrue regionally

Rebate Availability

- Low-income households have greater access to rebates, and so many may not need to use the exemption. The exemption website will connect them with personalized information about available funding. We will continue to advocate for more rebate funding, especially for low-income property owners

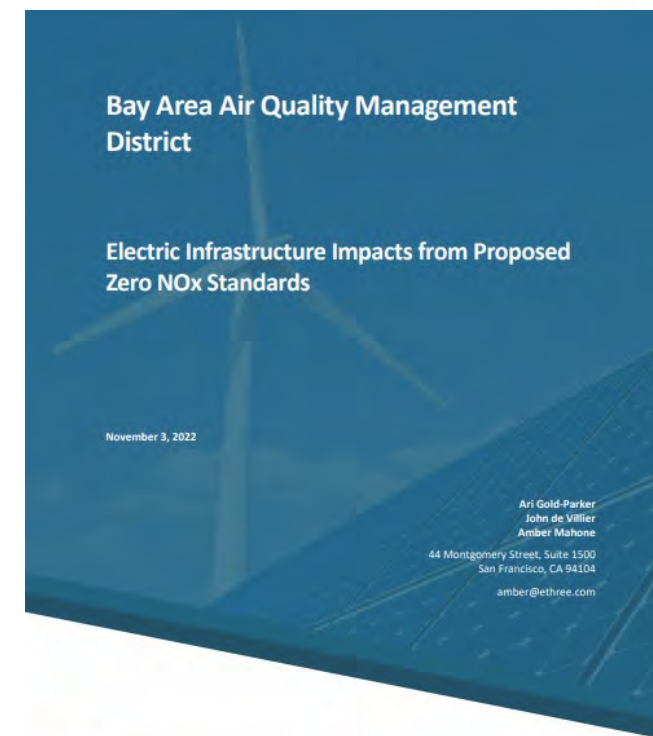
Electric Grid Readiness and Reliability?

- CEC, CPUC and PG&E have accounted for added electric loads in their planning processes
- Appliance replacements will phase in over time
- HPWHs can store hot water and energy for several hours
- Like HPWHs, many new gas water heaters require electricity to operate
- Most outages are short-term and caused by weather disturbances



Grid Reliability and Interconnection Challenges

Bay Area Air Quality Management District



prepared by

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September 2024

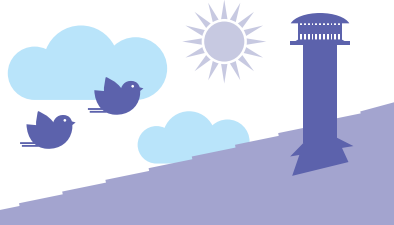


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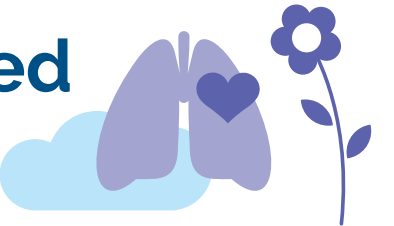
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Part V. Next Steps and Discussion



Public Awareness Campaign Overview

- Campaign to increase awareness of the health impacts of NOx-emitting appliances, benefits of zero NOx alternatives, and key steps for replacement
- Multi-channel outreach: contractors, municipalities, media, property owners, small businesses, social media, and local advertising
- Baseline and tracking surveys to measure awareness of zero NOx appliances and Building Appliance Rules

Public Awareness Campaign Timeline

Multi-phase communications plan to educate and engage all audiences

Phase I – Now through fall

- Develop clear, audience-specific messaging focused on benefits of switching to zero NOx appliances
- Conduct baseline awareness survey (April–June)
- Launch media, contractor, and social outreach

Phase II – Fall through early 2027 (post-Board action)

- Launch local advertising campaign
- Expand outreach, including door-to-door, with clear timelines and calls to action

Phase III – 2027 and beyond

- Continuation of advertising, public relations, stakeholder, and social media outreach

Immediate Next Steps

Board Meeting for Vote October 2026 (*targeted*)

In advance, Staff will release:

- Proposed Rule Language
- Staff Report
- Updated CEQA Analysis
- Updated Socioeconomic Impacts Report

As compared to 2023 amendments

Summary of Key Recommendations

Discuss and provide input on staff recommendations:

- Low-income exemption based on participation in income-qualified program or housing cost burden
- Project-specific exemptions requiring contractor participation
- One project-specific exemption per address
- Assess a moderate processing fee for project-specific exemptions to recover costs of the program
- Provide for a 9-month delay to develop exemption process and conduct outreach

Conclusion

For more information:

<https://www.baaqmd.gov/building-appliances>