



Zero-NO_x Water Heater and Furnace Rules

Santa Clara & San Mateo County
Elected Officials

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Bay Area Air District

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Outline

1. Overview of Air District, air pollution sources and their health impacts
2. Zero-NOx building appliance rules
 - Health benefits
 - Regulatory history
 - Proposed exemptions and other changes under consideration
 - Next steps
3. Questions and discussion

Bay Area Air District

- Formed in 1955 by the California Legislature
- Regulates stationary sources of air pollution in the 9-county Bay Area
- Governed by Board of Directors
 - 24 locally elected representatives from each county



Air pollution and public health

Air pollutants include:

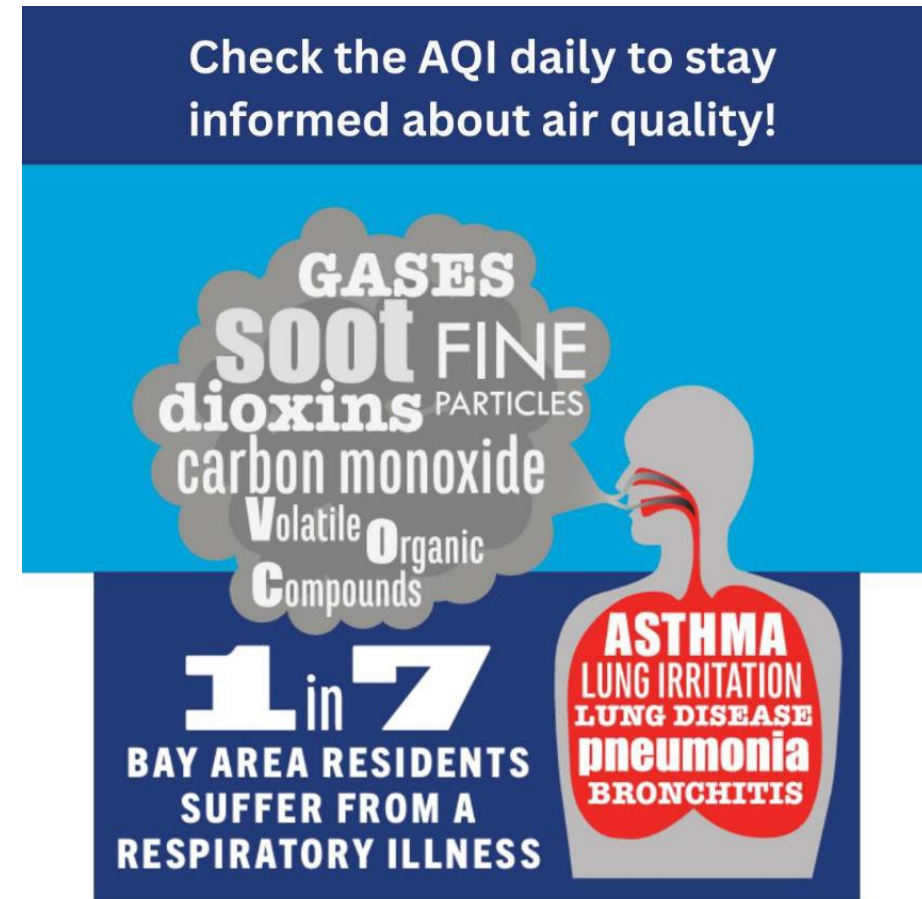
- Particulate matter
- Toxic air contaminants
- Chemicals that form ozone or “smog” (e.g. nitrogen oxides or “NOx”)

Air pollution has been linked to:

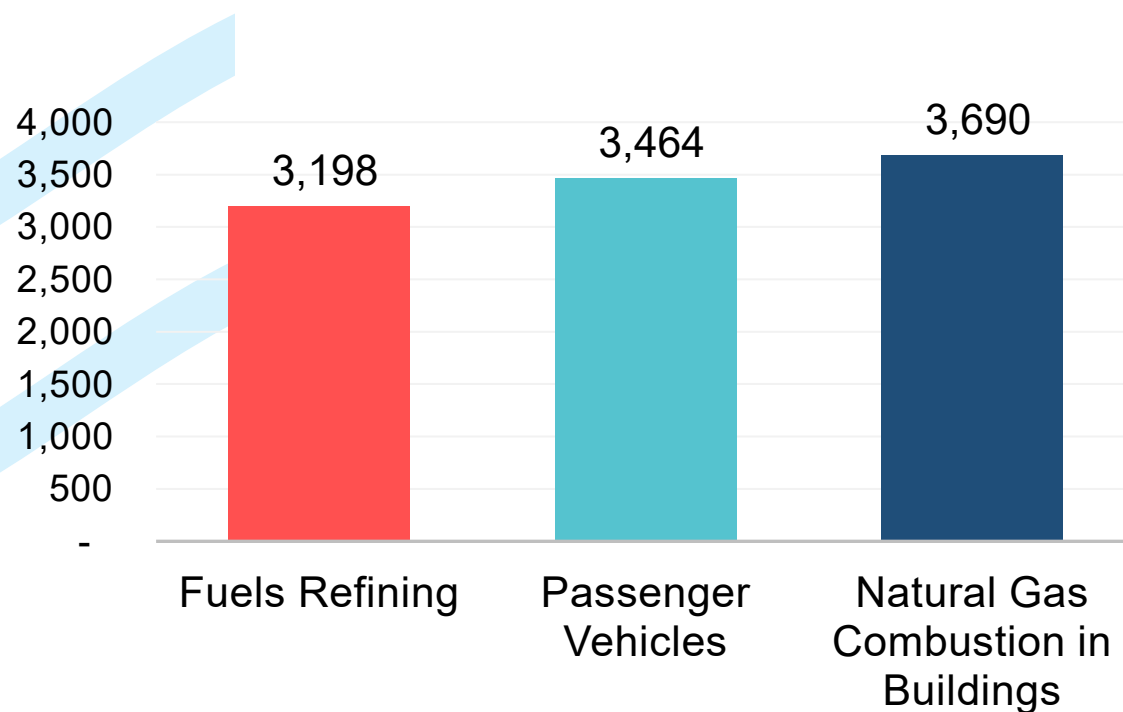
- Asthma
- Bronchitis
- Emphysema
- Heart attacks and strokes

Increasing evidence of a link to:

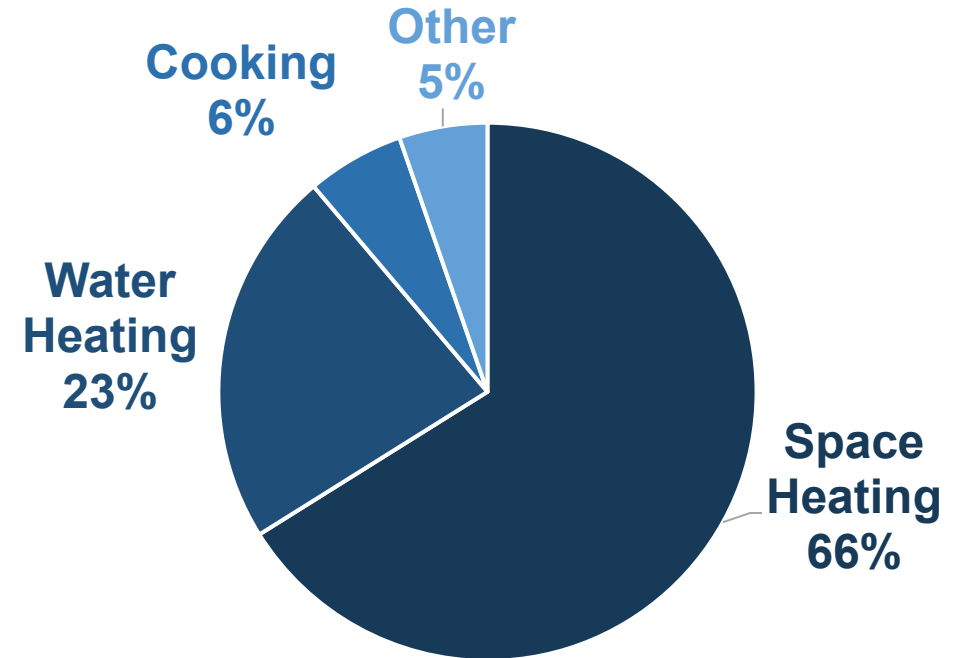
- Diabetes
- Dementia



Residential appliance emissions



2019 Air District NOx Emissions (tons)



2019 Air District Residential Natural Gas Combustion NOx Emissions

Zero-NOx standards – 2023 amendments

- NOx standards within Rule 9-4 (furnaces) and Rule 9-6 (water heaters) have been in place for over three decades
- Zero-NOx 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

Health benefits

IMPROVE OVERALL
REGIONAL AIR QUALITY

FROM THE
OUTDOOR VENTING
OF APPLIANCES

LOWER **PM_{2.5}**
EXPOSURE
PARTICULARLY IN
COMMUNITIES
OF COLOR



AVOID UP TO
\$890M
PER YEAR IN HEALTH
IMPACTS DUE TO
AIR POLLUTION
EXPOSURE



PREVENT
UP TO
PREMATURE
85
DEATHS
PER YEAR



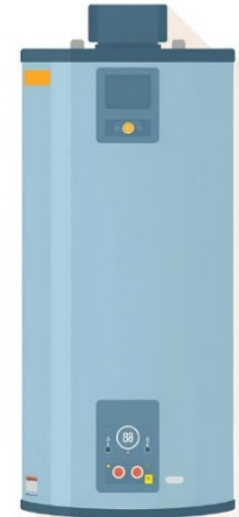
Appliance rules - key facts

Rules 9-4 and 9-6 have been in place for decades

- Only cover space heating (Rule 9-4) and water heating (Rule 9-6)
- Do not cover stoves, ovens, fireplaces, clothes dryers or any other gas appliance
- Do not require whole home electrification or discontinuing gas service
- Do not impact appliances in mobile homes or those fueled with propane

Zero-NOx standards have gradual phase-in and do not require the immediate replacement of working appliances

- Applies only to new sales or installations after compliance dates
- Upon space and water heating appliance burn-out, replacement needs to be zero-NOx after applicable compliance date
- Homes can keep and repair current gas space and water heating appliances until they need to be replaced



2024 “Readiness Report” for Rule 9-6

- Average additional cost of zero-NOx water heater compared to gas:
 - \$1,800 (vs. new gas tankless)
 - \$3,500 (vs. new gas tanked)
- New 120-volt “plug-in” HPWHs and “watt diet” strategies can help manage and lower costs
- Installations requiring extensive work need flexibility
 - Appliance relocation, electric panel upsizing
 - Emergency replacements
- Key findings directly informed exemptions to be considered by the Board of Directors in November.



Proposed flexibility amendments

1. Address **affordability** and the **drivers** of high cost
2. Allow **continued sales of some gas equipment** when zero NOx options do not currently exist, and for emergency situations
3. **Process must be as simple and automated** as possible



Source: istockphoto.com

July 2026 draft rule language

- Continued sales for NOx-emitting tanked gas water heaters 30 gallon and less (no exemption certificate/voucher required)
- Limited exemptions to purchase non-compliant water heaters for:

Businesses with high-heat applications	Low-income property owners
Projects with space or electrical constraints	Hydronic heating systems
Emergency loaners for licensed contractors	Multi-family buildings with five units or more
Deed-restricted affordable housing	

Exemption type: project-specific

Attestation and documentation by licensed contractors* who

- Have the knowledge and expertise to accurately evaluate site conditions and technical issues (e.g. electric service and space constraints)
- Can stay up-to-date on evolving technology solutions and funding options (e.g. low-voltage water heaters, rebate and incentive programs)



Source: *istockphoto.com*

* Electrical constraints to be verified by licensed electrician

One-time exemption per project address

- For site-specific exemptions (i.e. space or electrical constraints) only
- Supports long term air quality goals while also provides exempted building owner ~13 years to prepare for future zero NOx water heater, starting from 2027
- Full emissions benefits are realized later instead of 2040



Source: *istockphoto.com*

Exemption type: income-based

Proposed thresholds

- $\leq 250\%$ Federal Poverty Guidelines (~12.4% of Bay Area homeowners) OR
- “Housing cost burdened,” i.e. mortgage plus property taxes $\geq 28\%$ of gross income (~12.9% of Bay Area homeowners)
- There is likely some overlap between the two groups

Process

- Simple, self-attestation by homeowner or contractor
- Minimal documentation required

Proposed: delay effective date to Jan. 2028

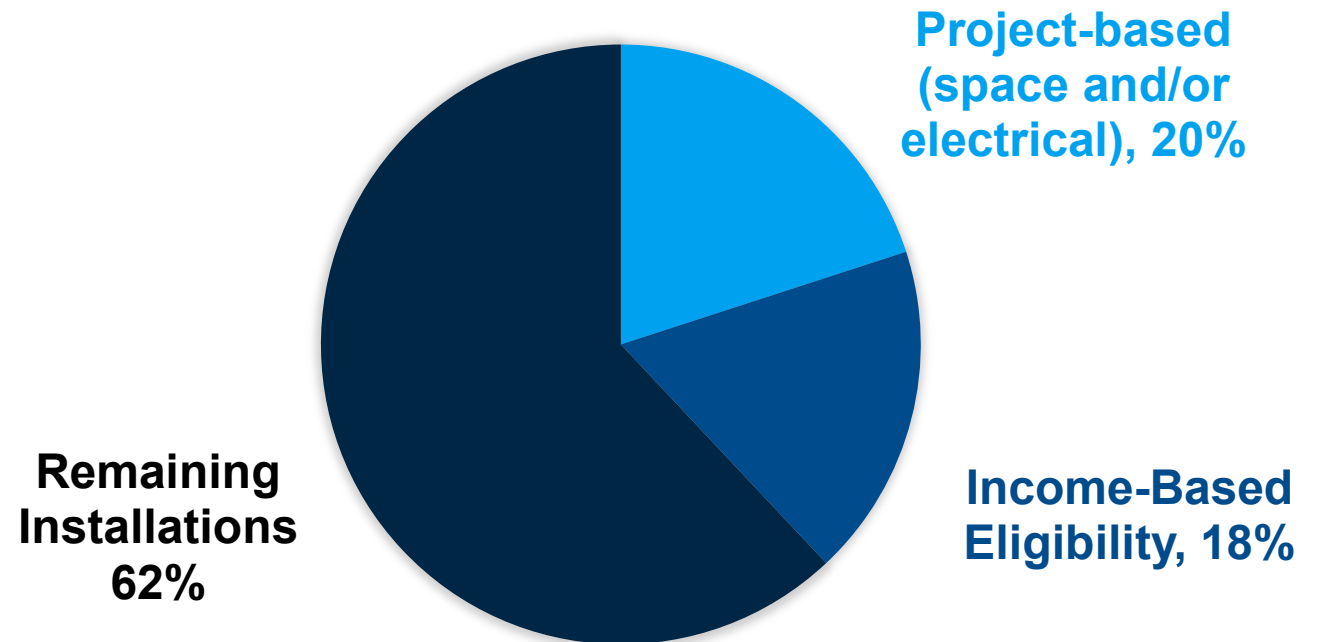
Approximately one year after original compliance date, providing additional time to:

- Develop and test exemption system
- Align with manufacturers, distributors, retailers & contractors
- Increase staff training and stakeholder education
- Conduct more property owner outreach

Total estimated exemptions

Staff estimate ~38% of water heater replacements would qualify for project-specific or income-qualified exemptions

ESTIMATED ANNUAL DISTRIBUTION OF EXEMPTION PATHWAYS



Underway: public awareness campaign

Phase I – Now through fall 2026

- Develop clear, audience-specific messaging focused on benefits of switching to zero-NOx appliances
- Conduct baseline awareness survey (May–July)
- 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

Next steps

Working on the Rule 9-6 amendments proposal package

- If approved, the amendments would delay zero-NOx compliance date and enact other new provisions, requirements, and other detail for exemptions as noted in previous slides
- Package will include an updated socioeconomic and CEQA analysis
- There will be at least a 30-day public comment period prior to Board consideration

Board of Directors hearing on Rule 9-6 changes expected November 2026

- Directors will deliberate and vote on whether to adopt amended rule language

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- <https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances>

Questions?

Email: ruleddevelopment@baaqmd.gov