



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

# **BAAQMD Amendments to Building Appliance Rules**

**CITY/COUNTY ASSOCIATION OF GOVERNMENTS  
OF SAN MATEO COUNTY**

October 16, 2024

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# Outline



- BAAQMD authority and rule amendments
- Emissions & Health Benefits
- Implementation Working Group
- Next Steps

# BAAQMD Authority



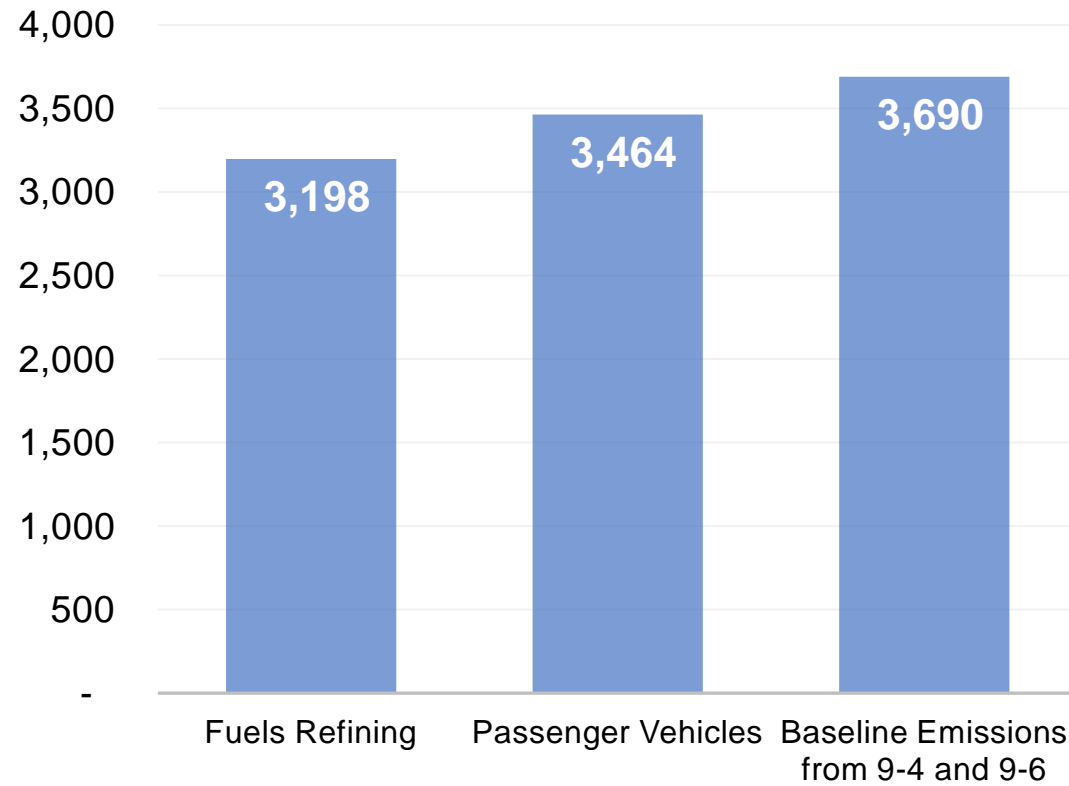
- BAAQMD has regulated NO<sub>x</sub> emissions from appliances since 1983.
- Rules are submitted to CARB and if approved are added to the State implementation Plan (SIP) for consideration by U.S. EPA.
- Rules 9-4 and 9-6 only apply to natural gas fired furnaces and water heaters. They DO NOT apply to:
  - Stoves, dryers, water heaters/boilers larger than 2 million BTU/hr\*, or other appliances
  - Appliances that use propane or other non-natural gas fuels
  - Mobile home furnaces

*\*governed by Rule 9-7*

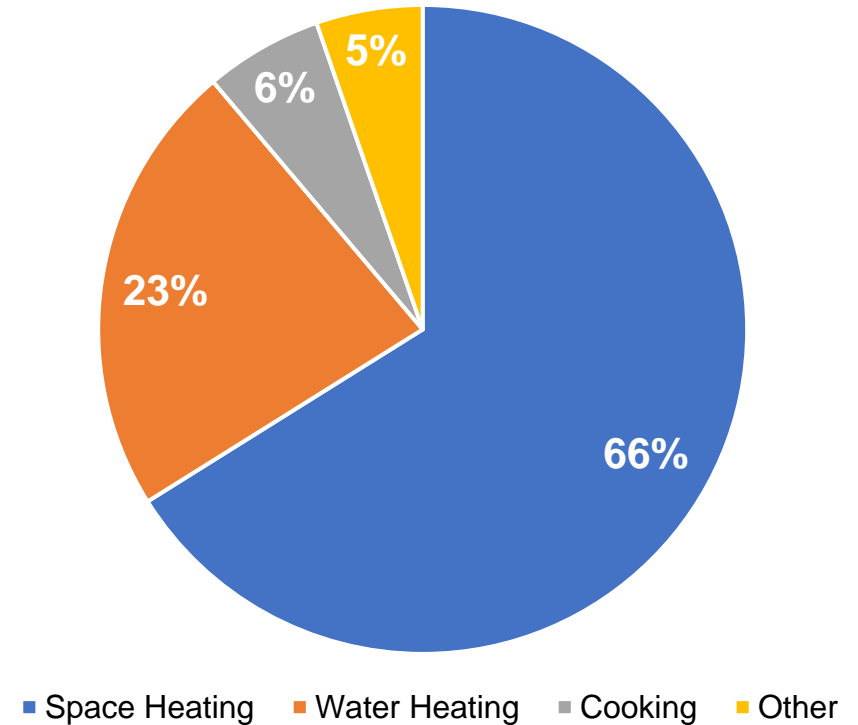
# Appliance Emissions



2019 District NOx Emissions (tons)



2019 District Residential Natural Gas Combustion NOx Emissions



# Rule Amendments



- On March 15, 2023, amendments to address NOx emissions associated with buildings were adopted for:
  - Regulation 9, Rule 4 (Rule 9-4): Nitrogen Oxides from Fan Type Residential Central Furnaces
  - Regulation 9, Rule 6 (Rule 9-6): Nitrogen Oxides from Natural Gas-Fired Boilers and Water Heaters
- Emissions Standard & Point-of-Sale Compliance Dates:

Ultra low Nox (14 ng/J)	1/1/2024	Central natural gas-fired furnace
Zero NOx	1/1/2027	Water heaters less than 75,000 BTU/hr
Zero NOx	1/1/2029	All applicable natural gas-fired furnaces
Zero NOx	1/1/2031	Water heaters 75,000 to 2 million BTU/hr

# Emissions Impacts



- Currently, buildings account for > 25% of all stationary source NO<sub>x</sub> emissions in the region (more than passenger vehicles and fuel refineries)
- These rules will:
  - Lead to significant reductions in NO<sub>x</sub> and total (primary and secondary) PM<sub>2.5</sub> formation
  - Also generate GHG reduction co-benefits
  - Assist in meeting state and federal standards for ozone and PM<sub>2.5</sub>
  - Demonstrate Bay Area leadership in health protective rules

# Health Benefits




- Potential premature deaths avoided: 37–85 deaths per year
- Potential total benefit valuation: \$400–890 million per year
- About 60% of benefits accrue from eliminating NO<sub>x</sub> emissions
- About 40% from eliminating PM<sub>2.5</sub> emissions (electric appliances)
- People of color most impacted by PM<sub>2.5</sub> attributed to combustion of natural gas for residential space and water heating
- Reduction to peak air pollution levels, helping us to meet state and federal requirements


# Implementation Working Group (IWG)




## IMPLEMENTATION WORKING GROUP (IWG)

- **All IWG Members**  
Review and provide input
- **Steering Committee**  
Consultation for agenda planning
- **Technical and Equity Subcommittees**  
Provide information, data, subject matter expertise

- **Air District Staff**  
Synthesize, provide member outreach & coordination





- **Facilitator**  
Meeting coordination & facilitation

- **Consultants**  
Provide additional staff support






# Technical Subcommittee



<b>COSTS</b>		Understand all costs associated with zero NOx appliance installation in the Bay Area region
<b>TECHNOLOGY</b>		Find cost-effective zero NOx technology solutions for all use cases
<b>MARKET / WORKFORCE</b>		Understand zero NOx technology market availability and trends
<b>PERMITTING</b>		Support streamlined permitting for installation of zero NOx appliances

# Equity Subcommittee



<b>HOUSING IMPACTS</b>		Assess displacement/eviction risks and potential for pass-through costs for Bay Area renters, and recommend mitigation measures.
<b>AFFORDABILITY</b>		Support affordable zero NOx appliance installation for all Bay Area residents, particularly low-and-moderate income households.
<b>LIVED EXPERIENCE</b>		Interviewed individuals to gain insight into lived experiences of renters and provide a balance to the more technical research and analysis.

# Next Steps



Interim report on market and technology readiness for small water heaters for the 2027 implementation date



December public presentation to Bay Area Air Quality Management District Board of Directors



Anticipated administrative amendments to building appliance rules in 2025



Further outreach and expanded public communication on upcoming requirements



# Building Appliance Rules Zero NOx Water Heaters Implementation

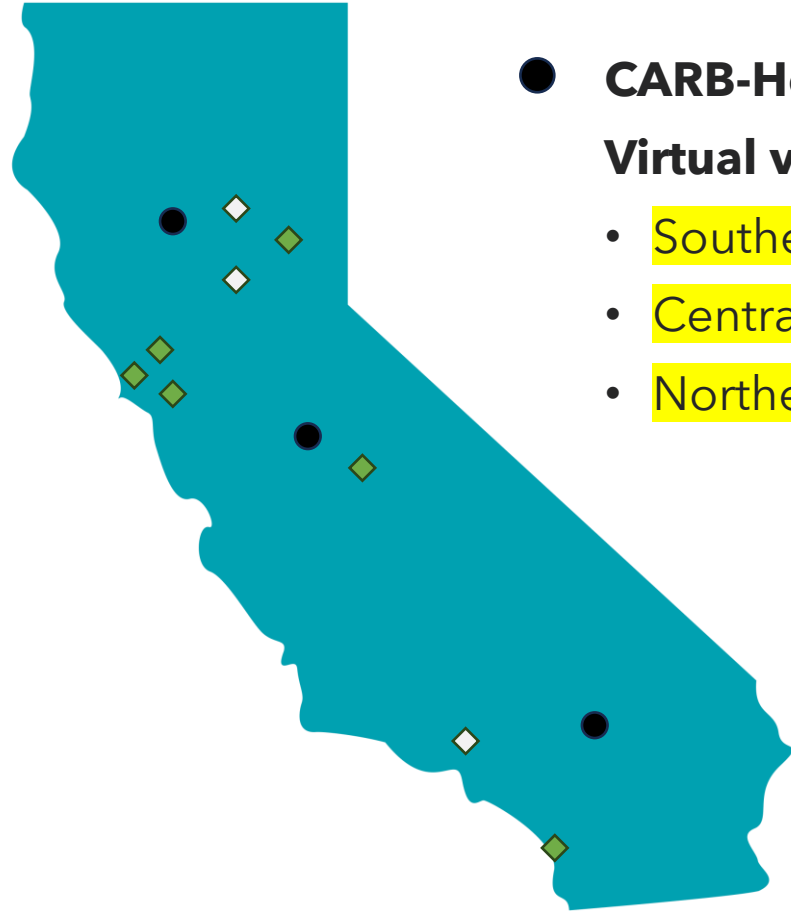
**Public Learning Session**  
October 22, 2024 • 6:00 – 7:30pm

Info and registration:  
<https://www.baaqmd.gov/en/news-and-events/workshops>



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# CARB Zero-GHG Space and Water Heater Standards Regional Listening Sessions (**Upcoming**)



● **CARB-Hosted,  
Virtual via Zoom, 6-8 PM**

- **Southern CA: 10/22**
- **Central CA: 10/28**
- **Northern CA: 10/29**

<https://tinyurl.com/carb-listening>

◆ **Co-Hosted, In Person**

- **Nevada City:** Semi-rural community challenges and needs.
- **Allensworth, Tulare County:** Experiences with affordable energy pilots.
- **San Juan Ridge, Nevada County:** Off-grid community needs and concerns.
- **UA Local 342 Training Center, Concord:** High-road workforce benefits and opportunities.
- **Tenderloin Neighborhood Development Corporation and SPUR, San Francisco:** Retrofitting affordable multifamily housing.
- **National City, San Diego County:** 10/9, with Climate Action Campaign
- **San Mateo County: 10/23, with Climate Resilient Communities**



# Thank You!

Rich Chien

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