



IGOR TREGUB, COUNCILMEMBER DISTRICT 4

CONSENT CALENDAR  
November 10, 2025

To: Honorable Mayor and Members of the City Council

From: Councilmember Igor Tregub (Author), Councilmember Cecilia Lunaparra (Co-Sponsor)

Subject: Resolution of the City of Berkeley Supporting the Bay Area Air District's Zero Emission Building Appliance Rules

**RECOMMENDATION**

Adopt a resolution in support of the Bay Area Air District's Zero-Emission Building Appliance Rules phasing out the sale of polluting gas-fired water heating and space heating equipment starting in 2027 for water heaters and 2029 for furnaces. The resolution also supports common-sense amendments to the rules to ensure flexibility for residents who have particular difficulty with compliance.

**CURRENT SITUATION AND ITS EFFECTS**

The Bay Area Air District's mandate is to protect public health through rules and regulations reducing air pollution. The combustion of gas in building equipment such as furnaces and water heaters, is one of the largest sources of air pollution in the region, generating a range of air pollutants linked to poor health outcomes, including nitrogen oxides (NOx),<sup>1</sup> fine particle pollution (PM2.5),<sup>2</sup> formaldehyde,<sup>3</sup> carbon monoxide,<sup>4</sup> and benzene, all of which contribute to breathing problems, cardiovascular issues, and dementia. Furthermore, these pollutants cause up to 85 premature deaths<sup>5</sup> and 15,000

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<sup>1</sup> American Lung Association, [Nitrogen Dioxide](#)

<sup>2</sup> American Lung Association, [Particle Pollution](#)

<sup>3</sup> American Lung Association, [Formaldehyde](#)

<sup>4</sup> American Lung Association, [Carbon Monoxide](#)

<sup>5</sup> Bay Area Air District, [Air District strengthens building appliance rules to reduce harmful NOx emissions, protect air quality and public health](#)

asthma attacks per year,<sup>6</sup> costing the region \$890 million annually in health-related costs<sup>7</sup> from air pollution exposure. The Bay Area Air District adopted groundbreaking standards in 2023 that will phase out the sale of residential gas water heaters in 2027 (Rule 9-6), and the sale of gas-furnaces in 2029 (Rule 9-4). Both rules include an implementation working group process which has thus far examined challenges and recommended solutions for the successful, equitable rollout of zero-emission residential water heating. Each implementation working group process will be followed by an amendment process to act on recommendations to provide flexibility for residents who might be unduly harmed by the rule.

The Air District's Zero Emission Building Appliance Rules align with Berkeley's Strategic Plan Goal to "[b]e a global leader in addressing climate change, advancing environmental justice, and protecting the environment."<sup>8</sup> Adoption of these rules aligns with California's commitment<sup>9</sup> to achieving zero-emission space and water heating standards<sup>10</sup> statewide by 2030, and with the City of Berkeley's goal of reaching net zero emissions by 2045 or sooner.

*Clean air and health:* The Bay Area is ranked among the worst regions in the nation with respect to air quality, failing to achieve national ambient air quality standards for ozone for nearly 30 consecutive years<sup>11</sup> and for fine particulate matter for 15 straight years. Gas-fired heating equipment is one of the chief contributors to health harming emissions. The region's gas-burning appliances in buildings emit more NOx pollution than all passenger vehicles<sup>12</sup>—and more than six times as much NOx as all the power plants in the region combined.<sup>13</sup> Implementing the Bay Area Air District Zero-Emission Building Appliance Rules would prevent 15,000 asthma attacks annually and save up to \$890 million annually in healthcare costs due to air pollution exposure across the Bay Area,<sup>14</sup> amounting to roughly \$2,000 of health damage per new gas-fired water heater installed and \$4,000 per new furnace installed. This pollution contributes to higher

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<sup>6</sup> Bay Area Air District, [Final Staff Report](#)

<sup>7</sup> Bay Area Air District, [Air District strengthens building appliance rules to reduce harmful NOx emissions, protect air quality and public health](#)

<sup>8</sup> City of Berkeley, Strategic Plan, <https://berkeleyca.gov/your-government/our-work/strategic-plan>

<sup>9</sup> California Air Resources Board, [Appendix F, Building Decarbonization, 2022 Scoping Plan](#)

<sup>10</sup> California Air Resources Board, [Zero-Emission Space and Water Heater Standards](#)

<sup>11</sup> U.S. Environmental Protection Agency, [California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants](#)

<sup>12</sup> Bay Area Air District, [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](#)

<sup>13</sup> U.S. Environmental Protection Agency, [2020 National Emissions Inventory](#)

<sup>14</sup> Bay Area Air District, [Final Staff Report](#)

asthma rates and poor health outcomes in communities of color and low-income communities.<sup>15</sup>

*Meeting climate commitments:* Burning fossil fuels in homes for heating is responsible for roughly 11% of California’s statewide climate emissions.<sup>16</sup> Berkeley’s Climate Action Plan has a goal that new and existing Berkeley buildings achieve zero net energy consumption by 2045 or sooner.<sup>17</sup> Heat pumps reduce lifetime space heating emissions by up to 93% compared to gas equipment in California.<sup>18</sup> The Bay Area rules represent the best opportunity for Bay Area jurisdictions to reduce fossil fuel emissions from buildings and meet their net-zero targets for the buildings sector.

## **BACKGROUND**

The Bay Area Air District adopted groundbreaking standards in 2023 that will help accelerate adoption of efficient electric heat pumps, cutting deadly air pollution and making energy bills more affordable. The standards will only apply when existing fossil fuel equipment needs replacement and will phase in gradually starting in 2027 for water heaters and 2029 for furnaces. The Air District is also currently working to amend these rules to include common-sense flexibility measures.

## **RATIONALE FOR RECOMMENDATION**

There is concern that the fossil fuel industry and its allies will use the amendment process at the Bay Area Air District to pressure the District to roll back these clean air standards entirely. Environmental, health, community, climate and environmental justice groups are mobilizing to protect these standards while working with staff to incorporate flexibility measures to help ensure smooth, affordable, and equitable implementation.

Resolutions of support from Bay Area jurisdictions will bolster the Bay Area Air District in its efforts to conduct reasoned and fact-based rulemaking and avoid politicization of a critical regulatory effort with consequences for the health and wellbeing of Bay Area residents.

## **ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS**

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<sup>15</sup> Tessum, et al. [PM2.5 pollutants disproportionately and systemically affect people of color in the United States](#)

<sup>16</sup> California Air Resources Board, [California Greenhouse Gas Emissions from 2000 to 2021: Trends of Emissions and Other Indicators](#)

<sup>17</sup> City of Berkeley, [Climate Action Plan](#)

<sup>18</sup> Jack Teener and Lacey Tan, *RMI*, [Now Is the Time to Go All In on Heat Pumps](#)

The resolution expresses support for the Air District's Zero Emission Building Appliance Rules, which will have the following impacts if implemented fully:

As noted above, implementing the Bay Area Air District Zero-Emission Building Appliance Rules would prevent 15,000 asthma attacks annually and save up to \$890 million annually in healthcare costs due to air pollution exposure across the Bay Area, with disproportionate impacts for communities of color and low-income communities.<sup>19</sup>

Also noted above, burning fossil fuels in homes for heating is responsible for roughly 11% of California's statewide climate emissions. Heat pumps reduce lifetime space heating emissions by up to 93% compared to gas equipment in California. In denser urban settings like Berkeley, burning gas in buildings makes up a larger proportion of greenhouse gas emissions. Berkeley's Climate Action Plan 2023 update estimated that burning gas in residential and commercial buildings makes up 35 percent of Berkeley's greenhouse gas emissions.<sup>20</sup> The Air District's rules would ensure that as gas-fired heating appliances break or reach the end of their useful lives, that they are replaced with zero-emission alternatives like high-efficiency heat pumps. This would likely put Berkeley on the path to eliminating the bulk of its greenhouse gas emissions from burning gas in buildings simply by complying with the Air District rules.

## **FINANCIAL IMPLICATIONS**

Limited staff time associated with communicating the city's position to the Bay Area Air District

## **CONTACT PERSON**

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Attachments:

1. Resolution
2. [Air District Factsheet](#)
3. BACA Two-pager on Air District Rules

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<sup>19</sup> Bay Area Air District, [Final Staff Report](#)

<sup>20</sup> City of Berkeley, [Climate Action Plan and Resilience Update, Item 23](#)

RESOLUTION NO. ##, ###-N.S.

**RESOLUTION OF THE CITY OF BERKELEY SUPPORTING THE BAY AREA AIR DISTRICT'S ZERO-EMISSION BUILDING APPLIANCE RULES**

**WHEREAS**, the combustion of gas in building equipment like furnaces and water heaters generates a range of air pollutants linked to poor health outcomes, including nitrogen oxides (NOx), fine particle pollution (PM2.5), formaldehyde, carbon monoxide, and benzene, which contribute to breathing problems, asthma attacks, cardiovascular issues, dementia, and premature death; and

**WHEREAS**, gas-powered furnaces and water heaters are major contributors to smog-forming NOx pollution and PM2.5 in the Bay Area, which together cause up to 85 premature deaths and 15,000 asthma attacks per year, and cost the region \$890 million annually in health-related costs from air pollution exposure; and

**WHEREAS**, communities of color are disproportionately exposed to health-harming pollution from gas combustion in homes and businesses, both nationally and in the Bay Area; and

**WHEREAS**, the Bay Area faces an ongoing air quality crisis – it has failed for nearly 30 consecutive years to achieve national ambient air quality standards for ozone failed to achieve fine particulate matter standards – and further reductions of particulate matter and ozone pollution through the implementation of all feasible measures are needed for attainment and maintenance of these health-protective standards; and

**WHEREAS**, gas-burning building equipment in the region's homes and businesses emits more NOx pollution than all the Bay Area's passenger cars combined, making it one of the top sources of pollution in the region; and

**WHEREAS**, the Bay Area Air District's Board of Directors adopted Rules 9-4 and 9-6 in March of 2023 unanimously, establishing future zero-NOx standards for water heaters and furnaces, and these rules will accelerate the transition to zero-polluting heating equipment in the region as businesses' and residents' old equipment reaches end of life; and

**WHEREAS**, the Air District's Implementation Working Group has worked with the Air District to achieve a successful and equitable implementation of the zero-emission rules to residential water heating in 2027; and

**WHEREAS**, the Air District is now conducting an additional rulemaking to introduce common-sense flexibility measures into the zero-NOx equipment rules to provide options for businesses and residents who may face challenges complying with them; and

**WHEREAS**, switching from gas-powered space and water heating to efficient zero-emission appliances like electric heat pumps reduces smog-forming pollution, enhances climate resilience, and improves household resilience by introducing reliable cooling and improved air filtration to homes without air conditioning; and

**WHEREAS**, the Air District's zero-NOx furnace and water heater rules help the City of Berkeley make substantial progress toward achieving its/our climate goals of reducing and eventually eliminating the burning of fossil fuels, a step required to curb global warming and mitigate sea level rise, extreme heat, and climate related natural disasters; and

**WHEREAS**, adoption of these rules aligns with California's commitment to achieving zero-emission space and water heating standards statewide by 2030, and with the City of Berkeley's goal of reaching net zero emissions by 2045 or sooner; and

**WHEREAS**, the City of Berkeley has been integrally involved in planning for the implementation of these rules and has participated in the Air District's Implementation Working Group, which has thus far examined challenges and recommended solutions for the successful, equitable rollout of zero-emission residential water heating.

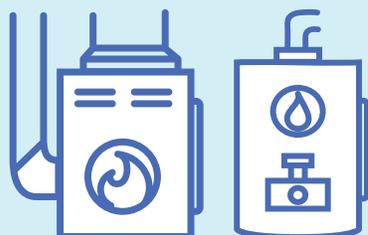
**NOW THEREFORE, BE IT RESOLVED**, that the City of Berkeley supports the timely implementation of the Bay Area Air District's Rules 9-4 and 9-6 to accelerate the transition to zero-emission water heaters and furnaces, with common-sense amendments to ensure flexibility for residents who have particular difficulty with compliance.

# Air District Appliance Rules – Furnaces and Water Heaters

**Amendments to two Air District rules will support improvements to regional air quality and public health –**

**Regulation 9, Rule 4: Nitrogen Oxides from Fan Type Residential Central Furnaces, and Regulation 9, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Boilers and Water Heaters.**

*The rule changes will not apply to gas appliances used for cooking, such as gas stoves.*



The amended rules will affect Bay Area households that use natural gas appliances – roughly 2/3 of all households currently – and will:

- Improve overall regional air quality from the outdoor venting of these appliances

- Prevent up to 85 premature deaths per year
- Lower PM<sub>2.5</sub> exposure, particularly in communities of color
- Avoid up to \$890M per year in health impacts due to air pollution exposure:
  - About 60% of benefits can be achieved through elimination of NOx and secondary PM<sub>2.5</sub> emissions by switching to zero-NOx appliances.
  - About 40% of benefits can be achieved through additional elimination of primary PM<sub>2.5</sub> emissions by switching to fully zero-emission appliances.
  - Currently, the only zero-NOx appliances available are electric appliances.

## Health impacts from short- and long-term exposure

### NOx

- Coughing, wheezing, difficulty breathing
- Asthma
- Increased susceptibility to respiratory infections



### PM<sub>2.5</sub>

- Asthma and other respiratory conditions
- Neurological disease
- Heart attack
- Stroke
- Lung cancer
- Premature death



## Compliance Timeline

*The rule amendments will apply only to new appliances, and do not mandate retrofitting of existing appliances.*

**2027** – only zero NOx water heaters can be sold or installed in the Bay Area.

**2029** – only zero NOx furnaces can be sold or installed in the Bay Area.

**2031** – only zero NOx large commercial water heaters can be sold or installed in the Bay Area.



Information on available incentives and funding can be found at [SwitchIsOn.org](http://SwitchIsOn.org)

For more information:  
[baaqmd.gov/building-appliances](http://baaqmd.gov/building-appliances)

# PROTECT CLEAN AIR STANDARDS THAT LOWER ENERGY BILLS WITH EFFICIENT HEAT PUMPS



The Bay Area Air District adopted groundbreaking standards in 2023 that will help accelerate adoption of efficient electric heat pumps, cutting deadly air pollution and making energy bills more affordable. The standards will only apply when existing fossil fuel equipment needs replacement and will phase in gradually starting in 2027 for water heaters and 2029 for furnaces.

Ahead of the 2027 implementation date, the Air District is working to amend these rules to common-sense flexibility measures. Unsurprisingly, the fossil fuel industry and its allies are hoping to use this process to roll back these clean air standards entirely. Environmental, health, community, climate and environmental justice groups are mobilizing to protect these standards while working with staff to incorporate measures to help ensure smooth and equitable implementation.

## STAND UP FOR CLEAN AIR STANDARDS AND AGAINST FOSSIL FUEL OPPOSITION

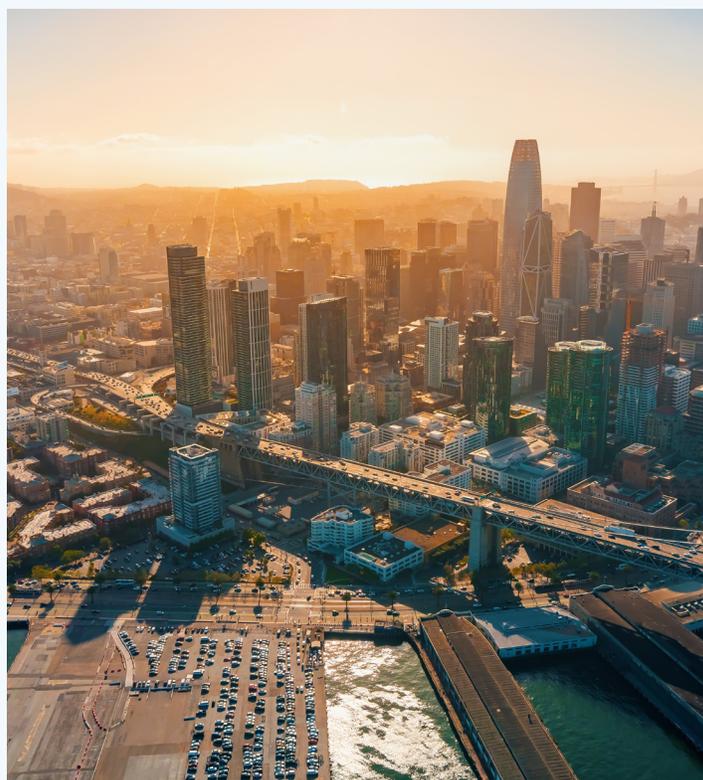
- **Join the Bay Area Clean Air Coalition** to amplify community voices against fossil fuel industry pressure. Please reach out to Sam Fishman <[sfishman@spur.org](mailto:sfishman@spur.org)> to express interest.
- **Send supportive comments** to Bay Area Air District Board members defending these health-protective standards.
- Spread the word on social media about the health and economic benefits to counter fossil fuel industry misinformation.

## HEALTH BENEFITS FOR BAY AREA COMMUNITIES

The San Francisco Bay Area has some of the worst air quality in the nation, and gas equipment in buildings is a key pollution driver, **responsible for more smog-forming NOx pollution than the region's passenger cars**. Implementing these rules would:

- Prevent 15,000 asthma attacks annually
- Save up to \$890 million annually in healthcare costs due to air pollution exposure

This pollution contributes to higher asthma rates and poor health outcomes in communities of color and low-income communities. 99% of disadvantaged communities in California live in an area with unhealthy levels of smog.



## HEAT PUMPS DELIVER LOWER BILLS AND MORE COMFORTABLE HOMES

Heat pumps deliver bill savings through their superior efficiency, **two to four times more efficient** than conventional gas water heaters. The typical California household switching from gas to heat pumps can **save \$370 per year**, according to analysis from RMI.

This superior performance is driving consumer sales: In 2024, U.S. households bought **32% more air-source heat pumps** than gas furnaces. Implementing these standards will position the Bay Area as a leader in a nation-wide technology revolution for lower bills and more efficient homes.

## BAY AREA CONTRACTORS ARE LEADING THE REVOLUTION

Appliance installers across the Bay Area are already capitalizing on soaring demand to grow their businesses. Contractor training programs throughout the region are equipping professionals with skills to install state-of-the-art equipment:

- More than **30,500 contractors** across California— including electricians, plumbers, and HVAC technicians— are licensed in the trades needed to install heat pumps and can be trained on this growing technology.
- A survey found that **68% of contractors** in the region are aware of the upcoming clean air standards, helping to ensure early preparedness.
- 128 different contractor firms installed more than **4,000** heat pump water heaters in the Bay Area under the TECH Clean California incentive program.



## COMMONSENSE FLEXIBILITY MEASURES TO PROTECT LOW-INCOME HOUSEHOLDS

The Bay Area Air District is working to incorporate commonsense flexibility measures into the rule that will help ensure low-income households aren't burdened by upfront costs. The Bay Area Clean Air (BACA) coalition is advocating for measures designed to reduce air pollution and make the transition more equitable and accessible for all Bay Area residents, while also ensuring low-income households aren't left behind in the transition to heat pumps.

## CLIMATE PROGRESS THAT COUNTS

Burning fossil fuels in homes for heating is responsible for **roughly 11%** of California's statewide climate emissions. The state cannot meet its climate targets without eliminating this pollution. Heat pumps reduce lifetime space heating emissions by **up to 93%** compared to gas equipment in California. The Bay Area rules represent the nation's most ambitious heating electrification standards, serving as a model for other state and regional policymakers.

### MAKE YOUR VOICE HEARD

**The fossil fuel industry and its allies are working to eliminate these life-saving standards entirely. Bay Area residents, health advocates, and environmental justice groups must unite to protect these clean air standards while ensuring flexible, equitable implementation. [Click here to take action.](#)**

