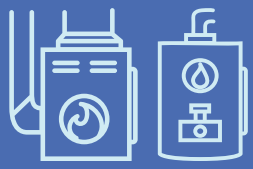
FAQ FREQUENTLY ASKED QUESTIONS



ABOUT AIR DISTRICT APPLIANCE RULES

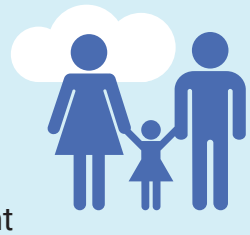
What do the amended Appliance Rules cover?

ZERO NO_X emissions

The amendments establish zero NO_X emissions standards for natural gas fired furnaces and water heaters that are typically found in residential and commercial buildings.

Any of these appliances manufactured after the compliance dates outlined in the amendments (beginning on January 1, 2027) will not be allowed to be sold or installed in the Bay Area if they emit NO_X upon operation. The amendments only apply to appliances that would be newly installed; they require no change-out of already existing appliances.

Why did the Air District adopt these amendments?



These amendments will lead to improvements in regional air quality and public health.

In 2019, emissions from residential natural gas combustion accounted for roughly the same amount of NO_X emissions as passenger vehicles. Furnaces and water heaters, which vent emissions to the outdoors and therefore impact regional air quality, account for about 90 percent of the total emissions from building appliances.

Through the reduction of NO_X and particulate matter emissions, the proposed amendments are projected annually to prevent up to 85 premature deaths and save up to $890 million in health impacts.

Do the health benefits come from improving indoor air quality?

The amendments only affect water heaters and furnaces, whose emissions are vented to the outside. However, appliances may not be vented properly and gas pipes in homes often leak, contributing to poor indoor air quality. Most concerning is that NOx and $PM_{2.5}$ pollution from these 1.8 million appliances degrades outdoor air quality and causes negative health impacts.

What is the timeline for compliance with these amendments?

- Ultra-low NO_X standard implementation date (applies to appliances manufactured after the noted date):
  - **Jan. 1, 2024** – For residential fan-type central furnaces. This standard matches existing standards in other large California air districts, and natural gas appliances are currently available to meet this standard.
- Zero NO_X standard implementation dates (applies to appliances manufactured after the noted date):
  - **Jan. 1, 2027*** – Water heaters less than 75,000 BTU/hr (typically residential tank water heaters)
  - **Jan. 1, 2029** – Residential and commercial furnaces
  - **Jan. 1, 2031** – Water heaters between 75,000 and 2 million BTU/hr (commercial and multifamily)

*The Board of Directors will consider flexibility amendments in 2026 and potentially adjust the timeline with a later compliance deadline.

Is this a natural gas ban?

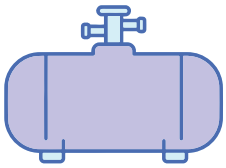
No, these rules cover only furnaces and water heaters, and no other natural gas appliances. Under these rules, water heaters and gas furnaces would have to meet zero-emission standards for oxides of nitrogen, or NO_X. The only commercially available appliances that currently meet those standards are electric, but if a natural gas appliance demonstrates that it meets the standards, it would be allowed under the proposed amendments.

Do the rule amendments impact gas stoves?

No, these Appliance Rules do not include any requirements for gas stoves.

Does this affect propane-fired equipment?

No. These rules only apply to natural gas-fired equipment, which is the cause of most air pollution from water heaters and furnaces in the Bay Area. Propane-fired equipment is not impacted.



What appliances are available to meet the zero NO_X standards?

There are currently no natural gas-fired appliances on the market that would meet the zero NO_X standards, though manufacturers may choose to develop them. Until that time, it is likely that consumers will need to comply with the standards through the use of electric, typically heat pump, technologies.

There are currently a wide variety of electric appliances available for both space and water heating. The Air District's **Staff Report** includes an evaluation of these technologies, which can be found here: **baaqmd.gov/buildingappsiwg.** With complementary policies, such as building codes and federal incentive programs, the development and market availability of these technologies is expected to continue to grow rapidly.

Low-voltage technology for these appliances is rapidly developing. The 2027 compliance date for small water heater compliance with the zero NO_X standard was based on the projected availability of appliances that could be used on standard residential 100-amp electric service. The first of these units became available to consumers in the fall of 2022.

What are the advantages of electric appliances?

Electric heat pumps or furnaces and water heaters that meet zero NOx requirements are available and can provide additional functionality and environmental and public health benefits. Heat pumps provide both space heating and cooling functions, so can double as air conditioners in warmer areas, an added benefit for many households. Because they move heat instead of burning fuel, heat pumps can be 3–4 times more efficient than equivalent gas appliances. In addition to emitting zero NOx emissions, electric appliances do not emit any particulate matter or greenhouse gases, leading to cleaner air quality and less impact on the global climate.

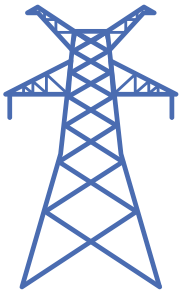
Will property owners be required to replace their gas appliances immediately when the zero NO_X standard takes effect?

No, immediate replacement is not required. However, if an appliance fails and needs to be replaced after the effective compliance date, the replacement must be zero NO_X.

How will this rule affect renters?

Typically, only building owners/landlords are required to purchase new appliances when old ones must be replaced, and thus the rules should not significantly impact renters. However, the Air District is aware of concerns regarding potential pass-through costs and rental housing impacts. Staff is proposing flexibilities to Rule 9-6 that would provide exemptions for project types that are typically more expensive. This should decrease the risk of impacts such as construction and major pass-through costs.

Are we going to have sufficient generation and grid capacity to meet the huge demand if everyone's homes are mostly, if not entirely, electric?



The state is looking to significantly increase generation and grid capacity to meet future demand scenarios, including electrification of multiple sectors with renewable energy. By 2030 at least 60 percent of California's electricity must be renewable, and by 2045, all retail electricity sold in California must be renewable and zero-carbon.

One of the reasons for delayed implementation dates and a phased-in approach is to allow for any grid and resource expansion that may be necessary. The Air District has looked closely at this issue, which is addressed in the **Environmental Impact Report** we prepared.

Given power outages, are zero NO_X electric appliances less reliable than natural gas water and space heaters?

These rules will only impact newly purchased and installed (i.e., modern) equipment after the rule implementation dates (currently January 1, 2027*). Many modern natural gas appliance types require electricity to function and will not operate during a power outage—such as central gas furnaces or HVAC, which rely on electric fans; all gas-fired tankless water heaters, which require electricity for the control system; and some gas-fired tank water heaters with electric ignition.

Can my electrical panel handle that much more electricity?

Electric water heaters that are compatible with older homes with lower-amp electric panels are already available. Low-voltage solutions are rapidly developing and becoming increasingly available. Low-voltage equipment would mean you likely would not have to upgrade your electrical panel to handle the additional load.

The Air District has instituted an ongoing Implementation Working Group to investigate a number of implementation topics, including practical implications of the rule amendments on electric panels, potential costs, options for limiting these impacts, and potential public education materials.

*The Board of Directors will consider flexibility amendments in 2026 and potentially adjust the timeline with a later compliance deadline.

Older homes may need infrastructure upgrades to provide this much electricity for heat and hot water, which can take time to order and install. How concerned is the Air District, and what solutions are in the works to help with that?

Panel upgrades may not be needed for all homes; lower-voltage heat pump water heaters can negate the need for panel upgrades, as well as load-sharing plug devices and other technology options.

What is the Implementation Working Group and what is its role?

The Implementation Working Group is a multi-stakeholder group made up of state, regional and local agencies; appliance manufacturers; utility and energy service providers; subject matter experts; community-based organizations; labor and contractors; environmental justice groups, and more.

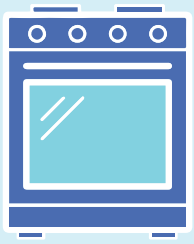
The IWG provides guidance and insights leading to staff updates to the Board. For more information see: baaqmd.gov/en/community-health/building-appliances-rule-implementation/building-appliances-implementation-working-group

Is there a way to help make installation more affordable?

There are a variety of funding and incentive sources that are currently available to Bay Area residents who wish to install zero NO_X electric appliances. Residents can visit **Incentives.SwitchIsOn.org** to find funding that is currently available for their household.

Are there plans to limit other gas appliances like gas stoves, gas inserts for fireplaces, or gas dryers?

No, the appliance rules only apply to gas water heaters and furnaces.



Are electric appliances more expensive to operate than gas appliances?

Heat pump water heaters are typically cheaper to operate than gas water heaters. Heat pump space conditioning is generally cheaper for larger homes that use both heating and cooling.

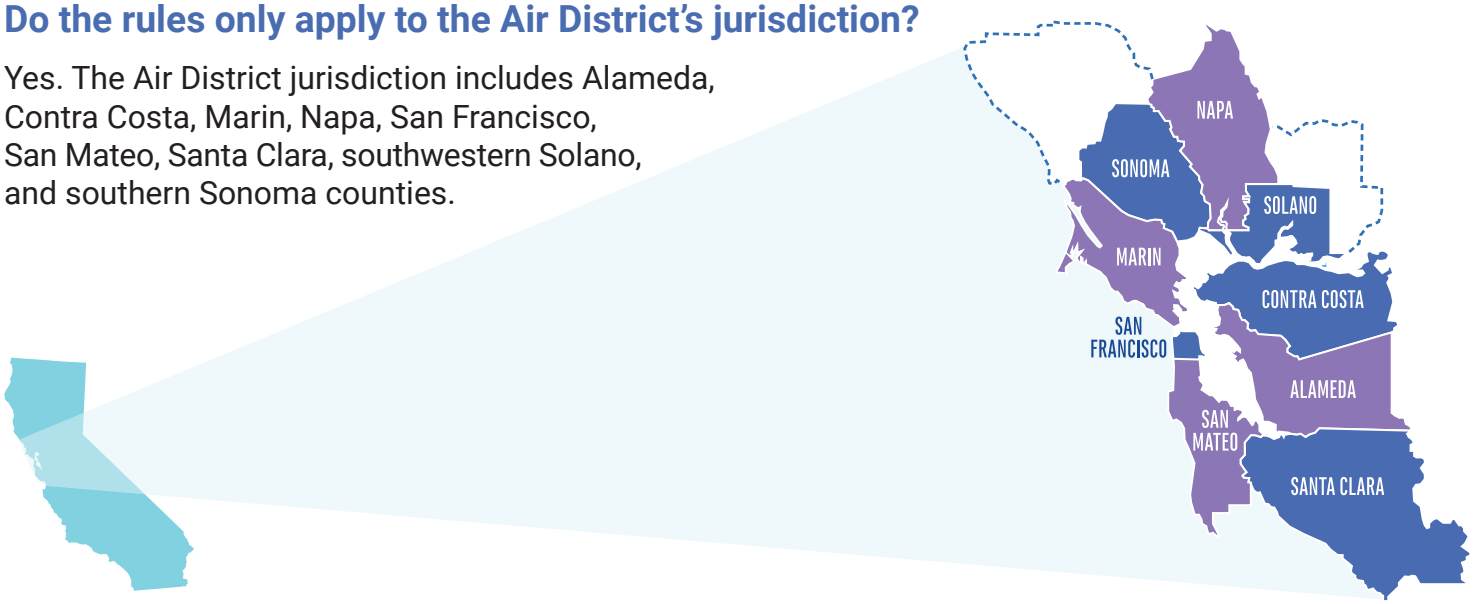
For homes in milder climate zones that do not use space cooling, electric heat pumps are generally around the same cost to operate compared to gas equivalent furnaces. Note that this may change as gas rates increase, and as new electricity rates are developed to support electric appliances.

Will mobile homes be required to adhere to the rule amendments?

No, requirements for appliances installed in mobile homes are not impacted by the rule amendments.

Do the rules only apply to the Air District's jurisdiction?

Yes. The Air District jurisdiction includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties.



Is the state of California planning on implementing similar rules?

The California Air Resources Board is planning to implement similar rules as outlined in their 2022 State Strategy for the State Implementation Plan. You can find out more about CARB rulemaking at: www.arb.ca.gov/our-work/programs/zero-emission-appliance-standards.