

Support Material Agenda Item No. 29

Board of Directors Meeting

January 8, 2025

10:00 AM

Location:

San Bernardino County Transportation Authority
First Floor Lobby Board Room
1170 W. 3rd Street, San Bernardino, CA 92410

TELECONFERENCING WILL BE AVAILABLE AT THE FOLLOWING LOCATION:

Big Bear Lake Civic Center
Training Room
39707 Big Bear Boulevard
Big Bear Lake, CA 92315

DISCUSSION ITEMS

Regional/Subregional Planning

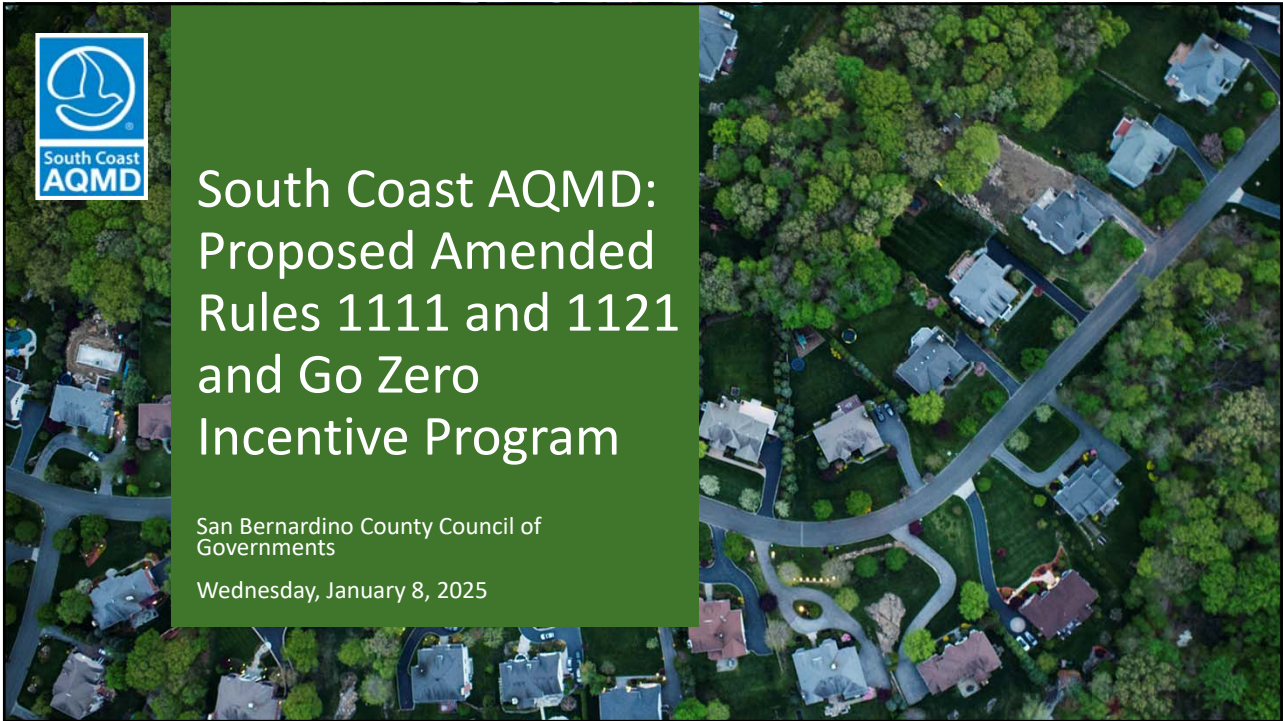
29. Presentation from SCAQMD on Amended Rules 1111 and 1121 and Adoption of Resolution No. 25-059


That the Board, acting as the San Bernardino Council of Governments:

A. Receive a presentation on two proposed rules of the South Coast Air Quality Management District (SCAQMD): Proposed Amended Rule 1111 (*Reduction of nitrogen oxide (NO_x) Emissions from Natural Gas-Fired Furnaces*) and Proposed Amended Rule 1121 (*Reduction of NO_x Emissions from Small Natural Gas-Fired Water Heaters*).

B. Adopt Resolution No. 25-059 in opposition to SCAQMD Proposed Rules 1111 and 1121.

A PowerPoint presentation was received after the posting of the agenda and is being provided as a separate attachment.



 South Coast AQMD: Proposed Amended Rules 1111 and 1121 and Go Zero Incentive Program

San Bernardino County Council of Governments
Wednesday, January 8, 2025

What is the South Coast Air Quality Management District?



- South Coast AQMD is the government agency responsible for air quality in the greater Southern California region
 - Historically, have the worst air quality in the nation
 - Our poor air quality causes approximately 1,500 premature deaths every year
 - Obligated under federal law to meet health-based air quality standards
 - Failure to meet air quality standards can result in federal sanctions
 - Federal takeover of air quality planning
 - Loss of billions of federal highway funds
- Responsible for regulating stationary and area sources with limited mobile source authority

Background

Our region fails to meet multiple national air quality standards established to protect public health

- Oxides of Nitrogen (NOx) is the key pollutant that must be controlled to address air quality

Under Federal law, areas that fail to meet air quality standards by required deadlines face potential sanctions

- Upcoming deadlines in 2031 and 2037

NOx emissions need to be reduced over 67% to meet air quality standards by the 2037 deadline ~124 tpd NOx emission reductions

Requires that we adopt most stringent measures such as zero-emission technologies *wherever feasible for all sources*

Working Group Development Phase:

- Reduction Of NOx Emissions From Natural Gas-Fired Furnaces
- For residential and commercial space heating

Proposed Amended Rule 1111 (PAR 1111)



- Reduction Of NOx Emissions From Small Natural Gas-Fired Water Heaters
- For residential water heating

Proposed Amended Rule 1121 (PAR 1121)



- Incentivize the purchase of zero-emission space and water heating appliances
- Launch program in early 2025

Go Zero Incentive Program



Requirements apply when appliance is replaced (end of useful life)

PAR 1111 and PAR 1121 public process initiated September 2023, Board adoption consideration scheduled on April 4, 2025 (subject to change)

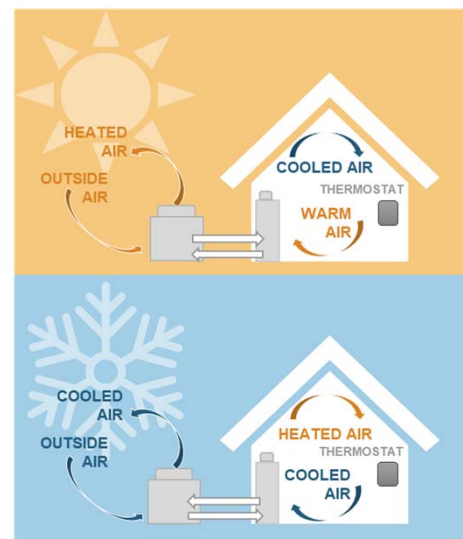
Why Regulate Space and Water Heating?

- Residential space and water heating has been regulated since 1978
- Proposed rules will cover over 10 million units emitting 10 tpd NOx emissions
 - Comparatively, by 2037, all utilities emit ~2 to 3 tpd NOx emissions, all refineries ~4 tpd and all passenger vehicles ~7 tpd
 - The largest emission reduction achieved by our rules was 7 tpd (refinery rule)
- 10 tpd is 17 percent of all stationary source NOx emissions
- Required by law to take all feasible measures to meet air quality standards
- Zero-emission technologies are currently commercially available and proven to work
 - Previous furnace rebate program assisted ~2,500 homes to transition to zero-emission technology

5

Zero-Emission Technologies

- Heat Pumps are the most common zero-emission technology
 - A heat pump is an air conditioner that provides heating and cooling
 - Heat pumps can also provide hot water (heat pump water heaters)
 - Heat pumps run on electricity, which means they produce zero NOx at the point of use
- Other technologies include:
 - Electric resistance
 - Solar
 - Fuel cells



6

Concerns Regarding Zero Emission Technologies

Technology still emerging and lack of consumer demand

- Heat pumps, fuel cells, and solar are proven technologies
- More heat pumps than gas furnaces sold in the U.S. since 2021
- Over 49,000 heat pumps installed in California through TECH Clean California

High implementation cost

- HVAC system costs comparable to heat pump
- Federal, state, and local incentives could offset some upfront costs
- Natural turnover and extended implementation time to allow for proper planning
- Future market adoption and competition will drive down cost
- With efficiency gains, cost savings over time

Minimal air quality benefits

- 10 tpd NOx emission reductions are 17% of total stationary source NOx emissions
- AQMP requires ~22 tpd NOx emission reductions from stationary sources by 2037

Increase in electricity demand

- California projected to add more electricity generation than demand
- New and emerging technologies less likely to require a panel upgrade
- Local utilities mapping service area to determine where upgrades are needed

7

Facts Regarding Heat Pump Market Adoption

- ~15 percent of existing U.S. homes currently use electric heat pumps*
 - One-third of existing homes in the U.S. South (warmer climate zones)
- More heat pumps sold in the U.S. for space heating than gas furnaces consistently since 2021#
 - Electric water heaters have made up the majority of both residential and commercial water heater shipments
- U.S. Department of Energy energy-efficiency standards, starting in 2029*:
 - Require replacing traditional electric storage water heaters to heat pump technology to improve energy efficiency, achieve cost savings, and reduce impact to the grid

+ U.S. Energy Information Administration 2020 Residential Energy Consumption Survey

Air Conditioning, Heating, & Refrigeration Institute (AHRI) monthly shipment report

*<https://www.energy.gov/articles/doe-finalizes-efficiency-standards-water-heaters-save-americans-over-7-billion-household>

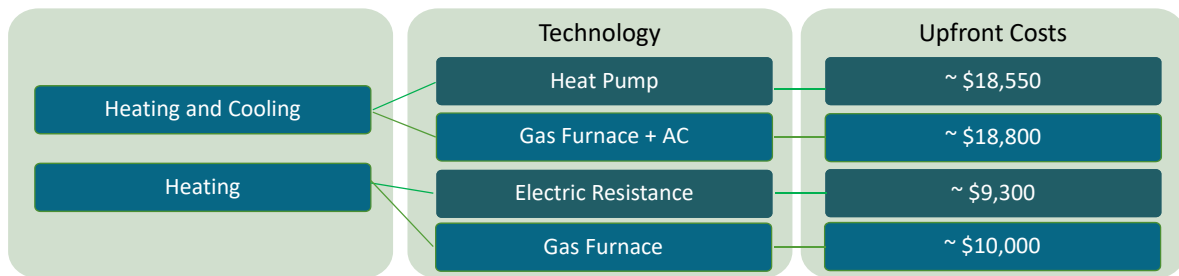


120V heat pump water heater installation in residence

8

Space Heating Replacement Cost Scenarios

- ▶ Heat pump costs are comparable to the costs when replacing both furnace and AC
 - Furnace only installation with newer AC could result in stranded assets (*new provision being proposed*)
- ▶ Electric resistance furnace can be an affordable option (*similar cost for gas unit*) for households with low heating needs
 - Low upfront costs but higher operating cost
- ▶ Incentive and rebate programs can assist in reducing upfront costs especially when stacking



9

Example of Costs for Water Heater Replacement

Replacing with	Upfront Cost (Installation Included)	Fuel Switching Costs	Go Zero Incentive
Natural Gas Water Heater	\$3,000	0	\$1,000 – \$2,000
Heat Pump Water Heater	\$5,200	(\$1,400)	



- Costs of installation of water heaters, including the capital costs, for single-family home
- HPWH costs more than natural gas-fired counterpart, but incentives and rebates, such as the Go Zero rebate program, can help supplement costs
- Cost savings over time when switching to more efficient heat pump water heater

10

PAR 1111 and PAR 1121 - Proposed Compliance Schedule

- 2025 Title 24 building code requires zero standard after 2026 for new builds
- Transition to zero-emission standard for existing buildings based upon:
 - Future effective dates
 - Natural turnover (when the consumer chooses to replace or equipment breaks)
- Natural turnover estimated ~4 to 7 percent per year
- Consider alternative compliance options to address issues
 - Stranded asset from newer AC unit
 - Multifamily building owners allowed temporary units during transition
 - Installations in high altitude region

PAR	Type	Zero-Emission Start Date	
		New Buildings	Existing Buildings
1111	Residential & Commercial Furnaces	2026	2029
	Mobile Home Furnaces	2026	2030
1121	Residential Water Heaters	2026	2029
	Mobile Home Water Heaters	2026	2030

South Coast AQMD Go Zero Pilot Incentive Program

Cost is a barrier, so incentives are critical to a successful transition to zero-emission appliances

The pilot program will include:

- Heat pump rebates for space and water heating
- \$21 million funding for the pilot phase
- 75% of funding allocated to overburdened communities
- Higher rebates for overburdened communities
- Potentially future phases to implement lessons learned
- Potentially five-fold increase in future funding

Program launch anticipated early 2025

Funding Distribution:

- Single Family: \$9 million
- Multifamily: \$5 million
- Small Business: \$5 million
- Installer Training: \$1 million
- Outreach and Application Assistance: \$1 million

12

Multiple Incentive Programs Available to Offset Costs

- Incentives are available for heat pumps, and may be layered together:
 - HEEHRA**, launched in November 2024, provides household incomes between 80% and 150% area median income (AMI) up to **\$4,000**
 - Households with incomes less than 80% AMI are eligible for up to **\$8,000**
 - Find out eligibility by using the pre-screening tool [here](#)
 - Federal IRA Tax Credits** provide up to **\$2,000** for heat pumps, more info [here](#)
 - TECH Clean California** provides **\$1,500** for heat pump HVAC, more info [here](#)
 - Comfortably California** provides incentives for heat pump HVAC, more info [here](#)
 - Golden State Rebates** provides incentives for heat pump water heating, more info [here](#)
 - Many local/utility incentives are available, with more info on the **Switch is On website**
 - Upcoming South Coast AQMD **Go Zero** rebates will provide **\$1,500-\$3,000** for heat pump HVAC and **\$1,000-\$2000** for water heating, along with application assistance and outreach

Incentive Stacking Example - HVAC	
HEEHRA	\$4,000
IRA Tax Credit	\$2,000
TECH Clean CA	\$1,500
Go Zero	\$1,500

Total **starts at \$9,000**
 + Plus other incentives from local, utility, etc.
 + Additional funding for income-qualified:
 +\$4,000 HEEHRA
 +\$1,500 Go Zero
Starts at \$14,500 for income-qualified



Public Outreach and Engagement

- Developed and distributing infographic about rulemaking for water heaters and furnaces
- Conducting outreach to increase public awareness on rulemaking including, but not limited to:
 - Councils of Government in all four counties
 - Industry, Trade and Community Organizations such as U.S. Green Building Council California, and Building Owners and Managers Association
- Increased social media, email, and outreach at meetings and events
- Working with Go Zero Incentive Program contractors for major outreach campaigns that will foster public awareness and involvement
 - Outreach efforts will include Southern California Regional Energy Network and Inland Regional Energy Network to coordinate where feasible on workforce and programs

South Coast AQMD is Conducting Rulemaking that Could Impact Your Home Water Heaters and Furnaces

The rules will reduce emissions from residential furnaces (Rule 111) and water heaters (Rule 112) by transitioning to zero-emission appliances.

How Will the Rules Impact You?
 Rules will take effect in 2-5 years and will be required only when:
 Appliances are voluntarily replaced
 Existing appliances break

Will There be Any Flexibility?
 Exceptions will be allowed for:
 Construction or utility upgrades delays
 High-altitude areas
 Owners of multifamily buildings
 Considering other circumstances

Health Benefits
 Once implemented, these rules will prevent:
 4,000 premature deaths
 16,000 cases of newly onset asthma
 4,000 emergency room visits

Will Financial Assistance be Available?
 South Coast AQMD is working on an incentive program to provide rebates for residents, building owners and small businesses.
 More info →

Get Involved
 Want to provide feedback on the rules or need more information? Join a working group meeting. More information can be found at www.scaqmd.gov/11111211212121212121. To receive future updates on rulemaking and incentives via email newsletter, subscribe by checking the "Building Appliances" box located under Rule Updates: www.scaqmd.gov/11111211212121212121.

South Coast Air Quality Management District
 21500 Sorensen Dr., Diamond Bar, CA 91765
www.scaqmd.gov • 1-800-CUT-SMDS

Next Steps for PAR 1111, PAR 1121, and Go Zero



Future Public Meetings

- Working Group Meeting #8
 - End of January
- Stationary Source Committee
 - February 21, 2025
- Public Hearing
 - April 4, 2025
(subject to change)



Technology Check-in:

- ✓ Reassess technology development, availability, and costs
- ✓ Update Stationary Source Committee
- ✓ Potential recommendations to amend rule prior to existing building compliance dates



Launch Go Zero Incentive Program

Early 2025

Links and Contact Information

To receive future updates on rulemaking and incentives via email newsletter:

Subscribe by checking the **Building Appliances** check box located under Rule Updates: <http://www.aqmd.gov/sign-up>

For more information on current projects:

Please check out the Building Appliances webpage at the link below or the QR code here:

<https://www.aqmd.gov/home/rules-compliance/residential-and-commercial-building-appliances>



For questions on building appliances rules and incentives:

Jen Vinh, Air Quality Specialist	Rule 1111 & Rule 1121	jvinh@aqmd.gov
Emily Yen, Air Quality Specialist	Go Zero, Rule 1146.2	eyen@aqmd.gov
Yanrong Zhu, Program Supervisor	Rules and Incentives	yzhu1@aqmd.gov
Heather Farr, Planning and Rules Manager	Rules and Incentives	hfarr@aqmd.gov
Michael Krause, Assistant Deputy Executive Officer	Rules and Incentives	mkrause@aqmd.gov