Proposed Amended Rule 1111 – Reduction Of NOx Emissions From Natural Gas-Fired Furnaces

Proposed Amended Rule 1121 – Reduction of NOx Emissions From Small Natural Gas-Fired Water Heaters

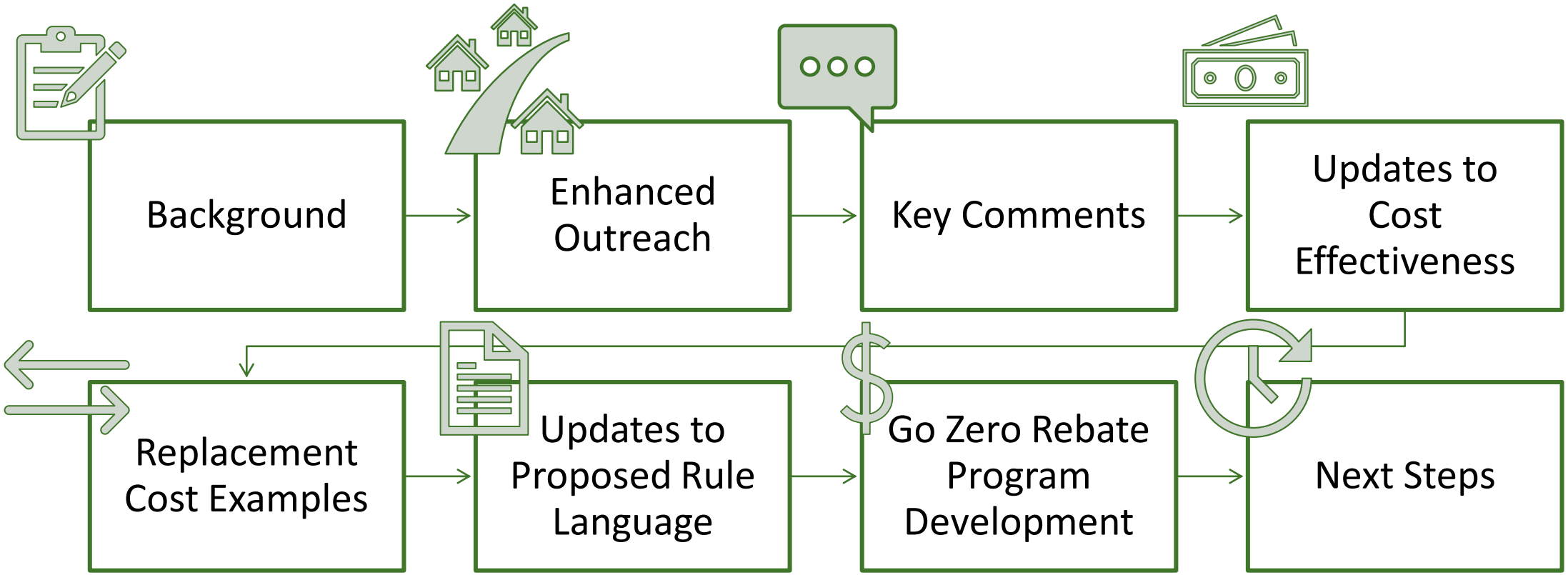
Working Group Meeting #7

December 4, 2024

8:30 AM – 10:30 AM (PT)

Join Zoom Meeting:
https://scaqmd.zoom.us/j/97271436016
Meeting ID: 972 7143 6016

Agenda


Background
Enhanced Outreach
Key Comments
Updates to Cost Effectiveness
Replacement Cost Examples
Updates to Proposed Rule Language
Go Zero Rebate Program Development
Next Steps

What is the South Coast Air Quality Management District?

- South Coast AQMD is an air pollution control agency
  - Includes Orange County and portions of Los Angeles, San Bernardino, and Riverside Counties
  - Covers an area of 10,743 square miles
  - Serves 17.5 million people with 11 million vehicles
  - Historically, have the worst air quality in the nation
- Responsibilities include
  - Controlling emissions from stationary sources (e.g., power plants, refineries, gas stations, painting facilities)
  - Permitting and inspecting over 28,000 affected businesses
  - Monitoring air quality and meeting federal and state air quality standards

Need for Rulemaking

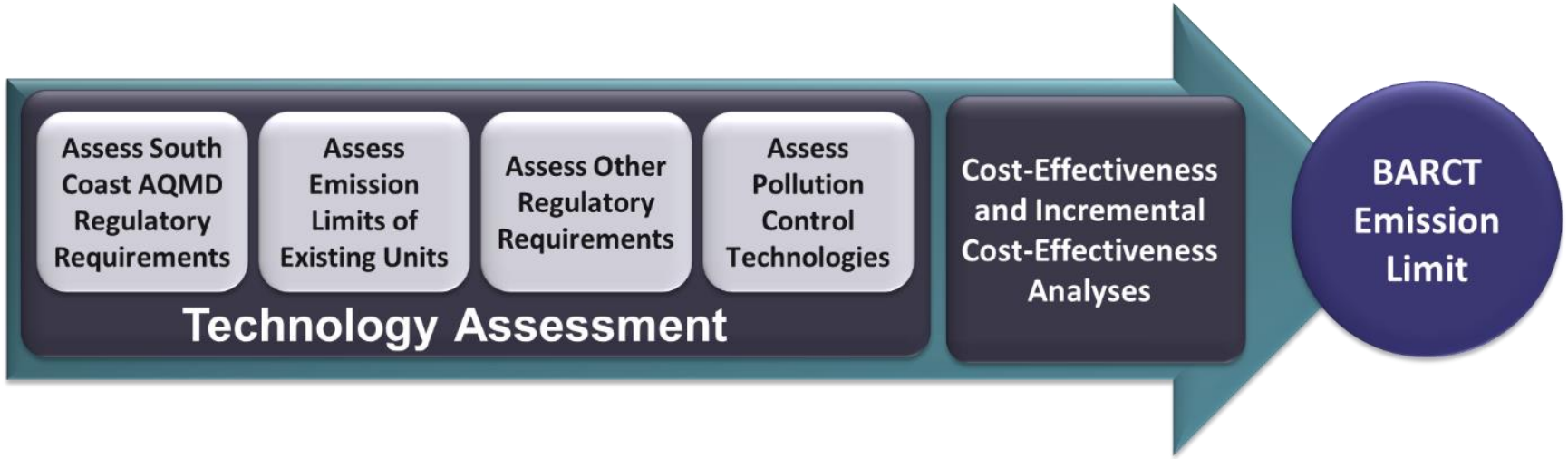
- Currently, the region is in nonattainment for four ozone standards and two of the PM2.5 standards
  - Regional sanctions imposed if standards are not met, including potential loss of billions of federal highway funds
- The 2022 AQMP addresses high levels of ground-level ozone
  - Proposes 67% reduction in NOx emission over baseline levels by 2037
  - Includes industrial, commercial, and residential sectors
  - Accelerated deployment of zero-emission technologies, wherever feasible

Overview of Rule Development Process

Working Group and stakeholder meetings continue throughout process

Information Gathering and Technology Assessment	Preliminary Draft Rule and Staff Report	Public Workshop	Draft Rule and Staff Report	Public Hearing
	Released 75 days before Public Hearing	Public comments on Preliminary Draft Rule	Released 30 days before Public Hearing	Public comments and Board action

Rule Approach



Staff conduct comprehensive Best Available Retrofit Control Technology (BARCT) assessments which include analysis of the technical feasibility and cost-effectiveness of zero-emission NOx technologies

Regulatory History

Rule 1111 and Rule 1121 – Adopted in 1978

- Establishes NOx emission standards for natural gas residential space and water heating
- Regulated through the supply chain (e.g., manufacturers, distributors, retailers, and installers)

Amendments needed to implement 2022 Air Quality Management Plan

- Seeks to establish a zero-NOx emission standard wherever feasible
- Identified zero-NOx emission technologies for all categories of space and water heating units

Public Process

Conducted six Working Group Meetings and a Public Workshop

Presented to the Stationary Source Committee

Numerous meetings with stakeholders

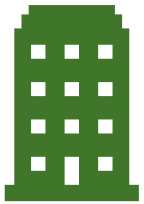
- Building owners, manufacturers, environmental groups, business associations, energy providers, local and state government agencies, consulting firms, etc.

Conducted visits to installations in various buildings, including:

Single Family Homes

Mobile Home Parks

Low Rise Apartment Buildings



High Rise Apartment Buildings

Office Buildings

Grocery Stores

Public Hearing Schedule

On November 1, 2024, the South Coast AQMD Governing Board set the Public Hearing for February 7, 2025

- Delayed from the originally scheduled date of December 6, 2024
- Suggested more outreach for public awareness of the rulemaking

Enhanced Outreach

Public Outreach

- Staff working to increase outreach efforts on rule amendments
  - Considerable community engagement during the rule amendment process
- Increased outreach for this Working Group meeting
  - Past email notifications to over 1,500 recipients, increased to over 6,000
    - Includes many organizations (e.g., BizFed representing more than 400,000)
  - Sent notification to ~26,000 social media followers
- Developing additional outreach plans (e.g., information materials, outreach through meetings of other organizations, etc.)
- Go Zero incentive program will educate public on upcoming rule requirements
  - Program launch scheduled for early 2025, major outreach campaign anticipated to launch before Public Hearing
- Open to ideas to reach members of the community
  - Additional working group meetings, in person meetings, social media, etc.

High-Altitude Site Visits 10/23/24

- Visited homes and businesses in Lake Arrowhead, Cedar Glen, and Running Springs with local contractor
- Visited a hospital, restaurant, homes, and recreational center
  - Examples of successful heat pump installation
  - Examples where a transition to zero-emission will be challenging (cost, installation location, and timing)
- Issues raised including reliability of the electrical grid at high-altitude, necessity of panel upgrades, and electricity prices
  - Staff revised proposed rule to allow more time and options for high-altitude installations

Apartment Site Visit 10/29/24

- Visited a multifamily property of ~400 residents with a heat pump water heater installer
  - Units ranged from 1-3 bedrooms with 1-2 bathrooms
  - 40-50 gallon units for water heating
  - Hydronic space heating
    - Water heater is used for both space and water heating
- Concerns raised about heat pump water heater technology as drop-in replacement for hydronic space and water heating
- Options discussed:
  - 240V heat pump water heater where power and space allowed
  - 120V heat pump water heater and existing AC system can be replaced with heat pump to provide space cooling and heating
- Compliance deadlines and concerns for emergency replacements discussed as an obstacle to transition to zero-emission technologies
  - Staff proposing an alternative compliance option for multifamily property owners to provide flexibility (detailed later in presentation)

Apartment Site Visit 11/12/24

- Condo complex with 404 units undergoing retrofit for heat pumps, led by homeowners' association
- Initial phase: 15 centralized gas boilers replaced by 8 heat pump water heater systems
- Total costs $3 million for initial phase
  - Approximately $7,000-8,000 per unit before any incentive or financing
  - Incentives paying $1.99 million
  - On-bill financing paying approximately $1 million
  - Estimated $1 million bill savings over lifetime of units
- Project had challenges but homeowners were committed to the transition to zero-emission technologies
- Lessons learned from homeowners' association:
  - More knowledgeable contractors are needed
  - Incentive information is fragmented; central repository is needed
  - No one size fits all solutions

Key Comments

Key Comment #1: High Cost for Zero Emission Units

Image Source: AO Smith Heat Pump Water Heater Presentation from Working Group Meeting #6

- Staff updated cost effectiveness calculations based on comments received
  - Updates detailed in later slides
- Staff considering extending compliance deadlines
  - Current proposal requires transition to zero emission when appliance is replaced **on and after** future effective compliance date:
    - January 1, 2027 for water heating
    - January 1, 2028 for space heating
  - Considering response to stakeholder request to delay to **January 1, 2029**
  - Future market adoption expected to reduce cost
- Federal, state, and local incentives will help offset some costs
  - South Coast AQMD Go Zero incentive program launching early 2025
- Technology Check-in will re-assess costs before zero-emission limits go into effect

Key Comment #1: High Cost for Zero Emission Units (cont.)

- 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
    - To see counties and corresponding AMI limits, please see this document
  - **Federal IRA Tax Credits** provide up to **$2,000** for heat pumps, more information here
  - **TECH Clean California** provides **$1,500** for heat pump HVAC, more information here
  - **Comfortably California** provides incentives for heat pump HVAC, more information here
  - **Golden State Rebates** provides incentives for heat pump water heating, more information here
  - Many local/utility incentives are available, with more information 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

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

Key Comment #2: Electrical Grid Will Not Meet Demand

Electrical generation may not be able to meet demand

- Staff relied on analysis of state and local utilities
  - California projected to add more electricity generation capacity than projected demand from zero-emission building appliances
  - In 2021, the CPUC created and modified programs to reduce electricity demand and increase energy supply*
- State agencies meet regularly with utilities on regulatory changes that will increase electrical demand

*https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-ensures-electricity-reliability-during-extreme-weather-for-summers-2022-and-2023

Local grid infrastructure may not be able to meet demand

- Local utilities mapping service area to determine where upgrades are needed
- Low voltage heat pumps, like 120-volt plug-in heat pump water heaters, put less strain on local grid
- Staff is in regular contact with utilities
- Southern California Edison submitted a support letter, detailing plans to meet future electrical demand**

**https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/comment-letter-from-socal-edison-20241016.pdf?sfvrsn=4

Key Comment #3: Zero Emission Units Not Feasible at High-Altitudes

Too cold for heat pumps to operate efficiently

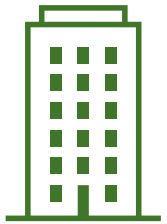
- Cold climate heat pumps* operate efficiently at low temperatures down to negative 25°F
- High level of heat pump adoption in cold Scandinavian countries and New England states

* https://neep.org/heating-electrification/ccashp-specification-product-list

Cost too high and electricity infrastructure not as reliable in remote region where heating is critical

- High costs when replacing only a furnace
  - Heat pumps provide heating and cooling
  - Cooling (A/C) less common in high-altitudes
- *New proposed provision*: delaying zero-emission limit effective date
  - Costs will come down over time
  - Infrastructure will be further upgraded

Key Comment #4: Multifamily Properties Have Unique Challenges



Multifamily properties need to address short term equipment failures that may impact tenants

- *New proposed provision*: allow owners of large multifamily properties to purchase and temporarily install non-zero emission furnaces and water heaters on hand for temporary installation

The 2026 compliance date is too soon for some large new construction

- *New proposed provision*: exempt new buildings from zero-emission standard if building permit issued prior to rule adoption

Key Comment #5: Market Impact

- Stakeholders have expressed concern if the market can transition to zero-emission standards according to proposed compliance schedule
  - Proposed zero-emission standards would take effect at natural replacement

Space Heaters

- Estimated number of furnaces: 5.3 million
- 25 years useful life
- Estimate 4% replaced each year: 212,000

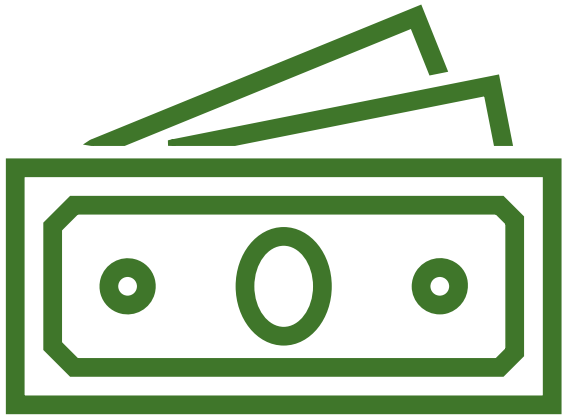
Water Heaters

- Estimated number of water heaters: 5.1 million
- 15 years useful life
- Estimated 7% replaced each year: 340,000

- For context, 4.3 million heat pump units were sold in the U.S. in 2022*
  - 2022 is the first-year more heat pumps were sold than gas units
- Heat pump sales in California estimated at 200,000 per year
  - State goal to install six million heat pumps by 2030

* https://www.nyserda.ny.gov/Featured-Stories/US-Heat-Pump-Sales#:~:text=For%20the%20first%20time%2C%20heat,heating%20and%20outside%20for%20cooling.

Updates to Cost-Effectiveness



Data Sources Used for Cost Analysis

Upfront Cost

- TECH Clean California **real-world installation cost** for heat pumps used in staff analysis
- Natural gas unit capital costs from the 2019 E3 "Residential Building Electrification in California"
  - E3 study included estimated prices for heat pumps, staff relied on real-world TECH costs

Fuel Switch Cost

- Calculated with projected future utility rates and estimated annual fuel usages
- Projected future utility rates based on a combination of the California Energy Commission's (CEC's) 2023 Integrated Energy Policy Report and Energy Information Administration (EIA) national level forecasts
  - Extended the CEC 2040 forecast to 2050 by EIA growth rate
- Average annual fuel consumption based on CEC's Residential Appliance Saturation Study in 2019

TECH Data Sources for Cost Analysis

- TECH Clean California is a statewide incentive program for heat pump installation which has delivered over $110 million in incentives
- The TECH database used for staff analysis covers installations in 2021 – 2023 and contains information on:
  - Nearly 20,000 heat pump installations throughout California
    - Most installations for single family
    - About 1,500 for multifamily
  - Over 4,500 heat pump installations for single family in South Coast AQMD region
    - 3,200 for space heating and 300 for water heating
  - Upfront cost including equipment, installation, and electrical service update if needed

Real-World Multifamily Installations

- Cost data collected from a multifamily heat pump contractor
  - $900k heat pumps replacing central HVAC and water heating for 100 housing units
  - $250k heat pumps replacing central water heating for 66 housing units
  - $950k heat pumps replacing unitary water heaters and unitary HVAC for 50 housing units
- This set of real-world cost data aligns with costs used in staff analysis

	Example A	Example B	Example C
Number of Units	100	66	50
Water System	Central	Central	Per Unit
HVAC System	Central	None	Per Unit
Total Cost	$900,000	$250,000	$950,000
Per Unit Cost	$9,000	$3,800	$19,000*
Costs Used in Staff Analysis	$9,600 multifamily	$4,300 multifamily	$9,600 multifamily /$25,000 single family

* Example C are installations of heat pumps in individual apartments, more typically for single family use

Updated Assumptions for Panel Upgrade Cost

- In previous analysis:
  - One quarter of panel cost ($750) attributed to space hearing, assuming:
    - A useful life of 30 years for the panel
    - Cost of panel shared between space and water heaters that both have useful life of 15 years
  - Four percent of homes for space heating and nine percent of homes for water heating requiring panel upgrade based on real world TECH data
- Staff incorporated stakeholder feedback and updated assumptions to be more conservative:
  - Increased estimated panel cost from **$750 to $1,250** for space heating
    - Reflecting updated furnace useful life estimate from 15 years to 25 years
      - *Presented and discussed useful life assumptions in Working Group Meeting #6*
  - Increased estimated number of homes that could require panel upgrade from **4-9% to 13%**
    - More conservative approach based on 87 percent of homes in region have air conditioning systems

Replacing Furnace Only for Homes with AC

- Staff estimated cost-effectiveness to transition from gas furnaces to heat pumps in homes with and without AC
  - Heat pumps replace furnace and AC, providing both heating and cooling

Stakeholder comment	Staff response
▶ Stakeholder suggested the cost-effectiveness estimate for furnace replacement should not include the cost of the AC, i.e., the incremental cost of replacing a furnace with heat pump should only compare furnace cost and heat pump cost	▶ Staff acknowledges there are instances that the stakeholder describes (next slide) ▶ Replacing both appliances at the same time is common, in many cases recommended by installers, and can result in lower utility costs ➢ Enhanced outreach will help inform public and installers on most cost-effective options to comply with upcoming requirements

* https://www.hvac.com/expert-advice/should-you-replace-furnace-and-ac-at-the-same-time

HVAC Replacement

Vast majority of homes in South Coast AQMD have AC (~87 percent)

Hot summers make cooling critical in most areas

Furnaces and AC are a major household expense, but they last several decades

Estimated useful life ~ 25 years

On replacement, manufacturers and contractors strongly recommended to simultaneously replace both the furnace and AC, especially if the working unit is older than 10 years *

Efficiency, warranty, compatibility, cost

Based on 4 percent replacement per year, staff estimates ~40 percent of existing AC less than 10 years old

* https://www.energystar.gov/saveathome/heating-cooling/replace
* https://goldenrulephc.com/blog/replace-ac-furnace-together/

Replacing Furnace Only for Homes with AC

Cost Impact

- Staff acknowledges there could be instances where a homeowner purchases only a furnace or only an AC, leading to a stranded asset (an AC with remaining useful life) so cost assumptions were updated:
  - Conservative assumption that up to **40 percent** of homeowners with newer AC could opt to replace only their furnace
  - Assume $6,000 (50% of the cost of a new AC system estimated to cost $12,000) remaining useful life of AC when furnace needs to be replaced with a heat pump
  - Cost effectiveness of this scenario is higher than the cost effectiveness threshold of $349,000 per ton of NOx

Provision for Homeowners with Newer ACs

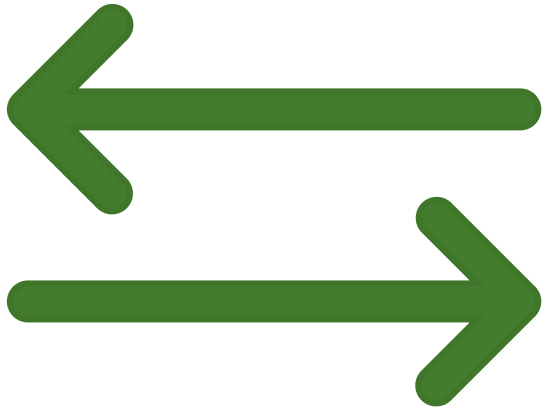
- Considering alternative compliance option for existing buildings with AC system less than 10 years old
  - Natural gas furnace allowed on and after zero-emission compliance date and prior to January 1, 2035, provided:
    - Furnace complies with 14 ng/J NOx limit
    - Installer confirms existing AC was manufactured less than 10 years from date of furnace installation
    - Installer registers each installation through compliance portal and keeps records
      - Uploads photo of name plate and serial number
    - Manufacturer pays mitigation fee and reports sales of gas furnaces after each compliance year
      - Considering mitigation fee of $1,000 per gas unit
        - Funds collected can be used to further fund Go Zero
    - Manufacturer complies with labeling requirements
- Considering allowing similar provision for furnaces installed in high-altitude, revising previous proposal

Updated Cost Effectiveness

- Cost effectiveness for single-family and multifamily are updated with:
  - Updated assumptions for panel upgrade cost
  - Consideration of alternative compliance option (delayed compliance till 2035) for homes with newer AC (less than 10 years old) replacing only furnace

	Category	Cost-Effectiveness ($/Ton), No Panel Upgrade	Cost-Effectiveness ($/Ton), With Panel Upgrade	Cost-Effectiveness ($/Ton), Weighted Average
PAR 1111	Single-Family	~~($134,000)~~ **$256,000**	~~($39,000)~~ **$570,000**	~~($129,000)~~ **$351,000**
	Multifamily	~~($3,573,000)~~ **($1,487,000)**	~~($3,250,000)~~ **($1,217,000)**	~~($3,883,000)~~ **($1,289,000)**
PAR 1121	Single-Family	**$299,000**	**$601,000**	~~$327,000~~ **$339,000**
	Multifamily	**$33,000**	**$335,000**	~~$61,000~~**$72,000**

Replacement Cost Examples



Compliance Pathways to Transition to Zero-Emission Appliances When Appliance is Replaced

Residents with furnace and AC

- If AC needs to be replaced, can install new separate AC or install heat pump (which provides cooling and heating)
  - If furnace is near end of useful life, more cost effective to install heat pump
- If furnace needs to be replaced, can install separate zero-emission furnace (e.g., electric resistance) or install heat pump
  - If AC is near end of useful life, more cost effective to install heat pump

Residents without an AC

- When furnace needs to be replaced, can install separate zero-emission furnace (e.g., electric resistance) or install heat pump
  - Higher upfront cost with heat pump but added benefit of cooling
  - Less upfront cost to replace with electric resistance heater, but only provides heat and higher operating costs

Residents with existing heat pumps

- Already comply with future proposed limits

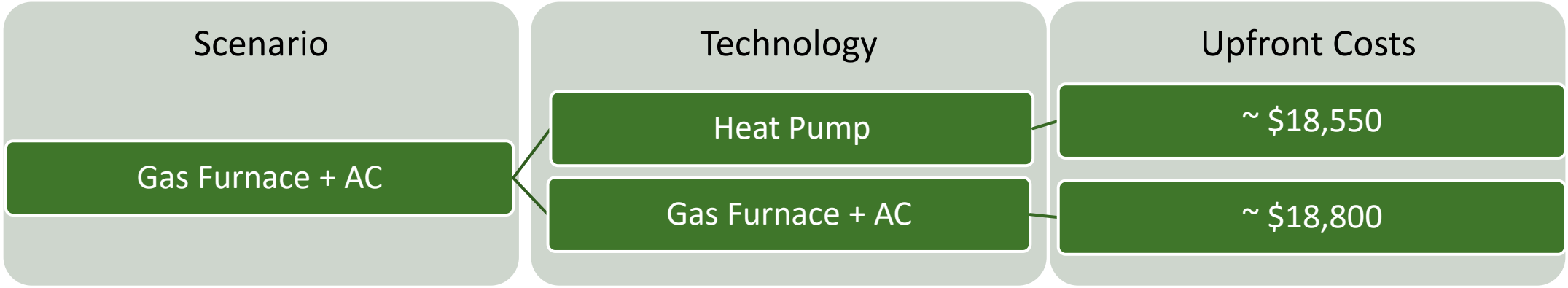
Electric Resistance Heater vs. Heat Pump

- Electric resistance heaters and heat pumps are both zero-NOx emission options
- For lower upfront cost, electric resistance heaters may be a choice for homes with lower heating demand

Electric resistance heater	Heat pump
• Use resistance elements, such as heating coils or strips to generate heat • 100% energy efficient • Cost less to install but more to operate • May be ideal for homes with less heating demand	• Use electricity to transfer heat from a cool space to a warm space like a refrigerator • About 300% energy efficient for heating • Dehumidify better than standard central air conditioners, resulting in less energy usage for cooling too • Cost more to install but less to operate • Cost savings when replacing both furnace and AC

Scenario #1: Homeowner Replaces HVAC System with Heat Pump

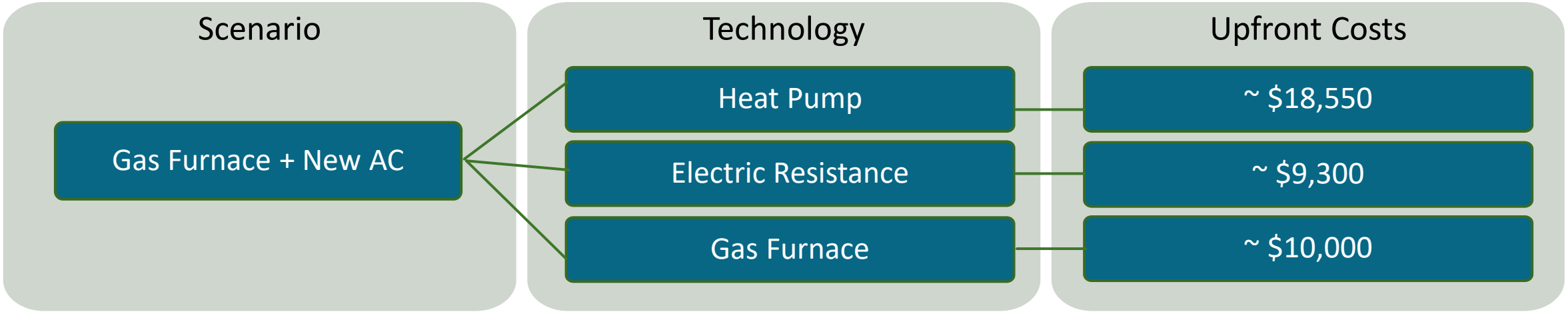
- Heat pump and gas furnace with AC have similar upfront cost
  - Staff estimates there will be some lifetime utility bill savings of (~ $1,950) operating heat pump instead of gas furnace
    - Utility savings based on reduced natural gas bills and high efficiency of the heat pumps
    - Incentive and rebate programs can be applied to heat pump



- Affordable to transition to zero-emission technology for homeowners that replace HVAC systems

Scenario #2: Homeowner with a Newer AC opts to only Replace Furnace

- Electric resistance could provide heating only, but results in higher operating cost
- Heat pump provides heating and cooling, but renders the existing AC a stranded assets
  - New provision will allow for gas furnace installation if AC less than 10 years old to address cost

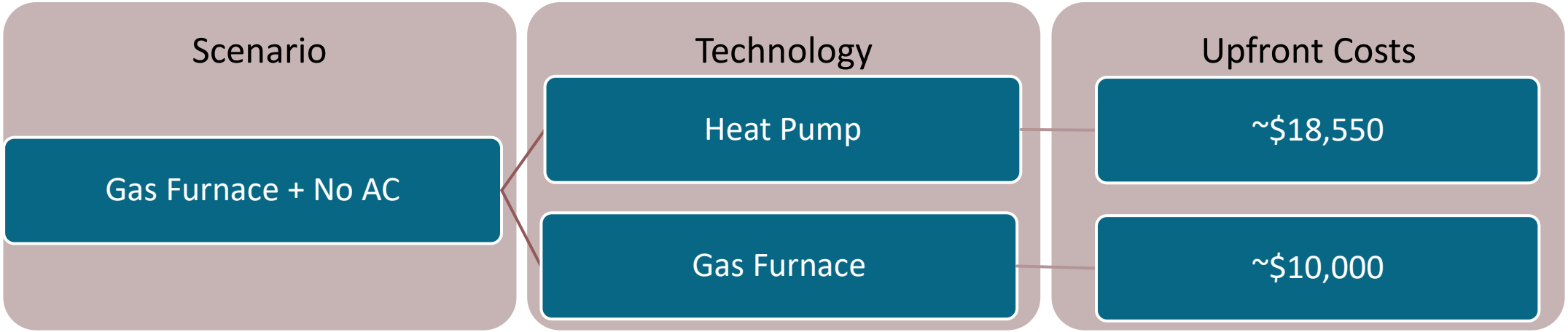


Examples for Homes without AC

Approximately 87% of homes in the region have AC, 13% do not but demand for AC is increasing

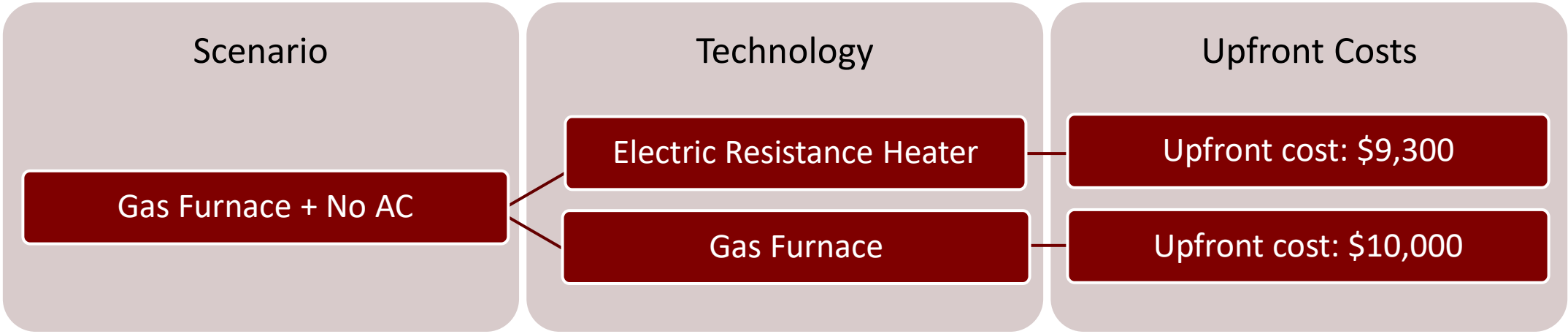
Scenario #3: Homeowner without AC Replaces Furnace with Heat Pump

- Higher upfront cost to replace furnace with heat pump but additional benefit of space cooling
  - Adding stand alone AC to home is costly (estimated to be ~ $12,000)
- Staff estimates there will be some lifetime utility bill savings of (~ $1,950) operating heat pump instead of gas furnace



Scenario #4: Homeowner without AC Replaces Furnace with Electric Resistance Heater

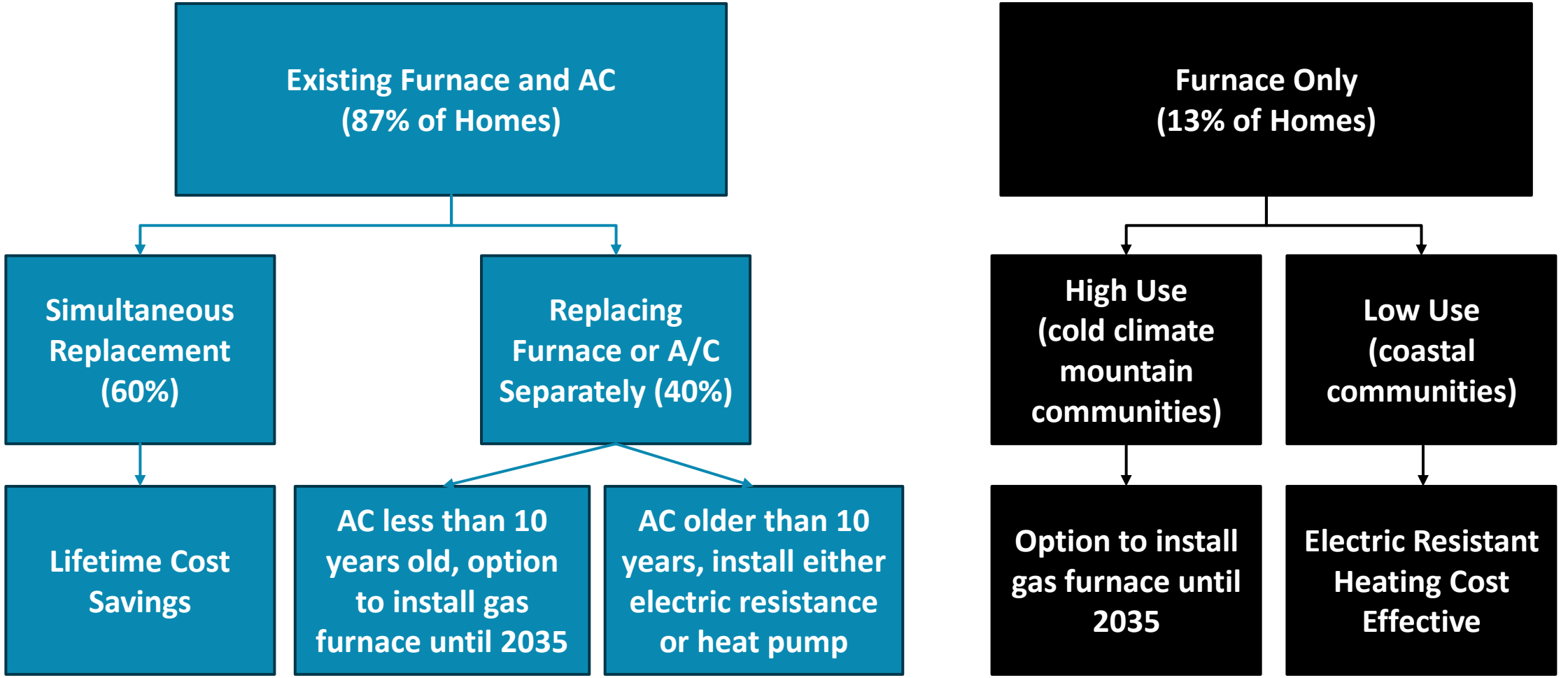
- Electric resistance heating is a cost-effective option in areas where space heating demand is low, e.g., coastal communities
- Upfront cost is lower for an electric resistance heater than a gas furnace
  - Operating cost will be high for high-use heaters



Scenario #5: Space Heating Fuel Switch Cost

- Estimating fuel switch cost for heat pump replacing furnace in a residential household
  - Annual natural gas use for operating a furnace: 127 therms (RASS data)
  - Annual electricity use for operating a heat pump: 565 kWh (RASS data)
  - Average annual gas cost: $293 (127 therms x $2.31 per therm)
    - Average Projected Gas Rate: $2.31 per therm
  - Average annual electricity cost for a heat pump replacement: $168 (565 kWh x $0.2985 per kWh)
    - Average Projected Electrical Rate: $0.2985 per kWh
  - Annual fuel switching cost: -$124 (average electricity cost - average gas cost)
  - Lifetime fuel switching cost to present value: ~-$1,950 (annual fuel switching cost x Present Value Factor of 15.622)

Summary of Estimated Universe of Heating and Cooling in South Coast AQMD



Water Heaters in the Market

- Heat pump water heaters (HPWH) are available at local hardware stores
  - A.O. Smith units sold at Lowes
  - Rheem units sold at The Home Depot
- Go Zero Rebate levels set at $1,500 for non-overburdened communities; $3,000 for overburdened

- 240V HPWH
  - Lower upfront cost
  - May require panel upsizing
- 120V Plug-in HPWH
  - Higher upfront cost
  - Less efficient so could have higher operating costs

Water Heater Type	**Big Box Store Unit Cost (Installation Not Included)**
Natural Gas Water Heater	$800 - $1,200
240V HPWH	$1,800
120V Plug-in HPWH	$2,600

Water Heater Replacement Example

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 cost more than natural gas-fired counterpart, but incentives and rebates, such as the Go Zero rebate program, can help supplement costs
- Cost savings with fuel switching when switching to heat pump water heater

Updates to Proposed Rule Language

Updates to Proposed Rule Language

- This section will explain the updates to PAR 1111 and PAR 1121 in the second preliminary draft version released on November 6, 2024
- New concepts discussed in previous slides will be incorporated in the draft proposed rules 30 days before the Public Hearing, including:
  - Delaying PAR 1111 and PAR 1121 existing building compliance dates to January 1, 2029
  - Alternative compliance options in PAR 1111 for homes with newer AC (less than 10 years old) or high-altitude installations
    - 2035 latest compliance date
    - Manufacturer must pay mitigation fee of $1,000 per gas unit and comply with labeling requirements
      - Fees will help fund future phases of Go Zero Incentive Program
    - Installer must comply with recordkeeping

Summary of PAR 1111 and PAR 1121

PAR 1111: Space Heating

- Proposes natural gas-fired furnaces with up to 2,000,000 BTU rated heat input capacity to go to zero emissions
- Compliance dates
  - 2028-2035 for existing buildings
  - 2026 for new construction buildings

PAR 1121: Water Heating

- Proposes natural gas-fired water heaters with up to 75,000 BTU rated heat input capacity to go to zero emissions
- Compliance dates
  - 2027-2030 for existing buildings
  - 2026 for new construction buildings

Both rules occur at natural turnover (annually, ~4% furnaces, ~7% water heaters)

- e.g., if a natural gas-fired furnace or water heater in an existing building is still operating after 2027-2035, the owner or operator may continue to operate the unit until it fails
- Once the natural gas-fired unit fails and it is past the compliance date, a zero-emission unit must replace the unit

Updated Definitions

- Staff incorporated stakeholder comments and feedback into rule definitions
- Commercial Fan-Type Central Furnace definition changed to include other commercial furnaces
- Mobile home definition changed to better align with state and federal codes
- Added new definition for rental company and high-altitude (over 4,200 feet)
- Brought old definitions of dual fuel system and heat pump back into Rule 1111

(2) COMMERCIAL FURNACE is a self-contained space heater using natural gas, or any fan-type central furnace that is in natural gas-firing mode, providing for circulation of heated air at pressures other than atmospheric that have:

(A) A Rated Heat Input Capacity of 175,000 Btu per hour or more, but less than or equal to 2,000,000 Btu per hour; or

(B) For combination heating and cooling units, a cooling rate of 65,000 Btu per hour or more.

(~~9~~15) MOBILE HOME means a ~~prefabricated structure on a permanently attached chassis.~~structure, transportable in one or more sections, and is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities.

(21) RENTAL COMPANY means a company that provides Furnaces for installation via a rental agreement.

Alternative Compliance for Multifamily Properties

- Included this provision in both PAR 1111 and PAR 1121
  - PAR 1121 example provided
- Multifamily property owners can own one gas furnace or water heater per 10 housing units that:
  - Is manufactured before the applicable zero-emission compliance date;
  - Meets the NOx limit in Table 1; and
  - For short-term use (up to 24 months) prior to installing zero-emission units
- Allows property owners to provide property with an emergency replacement furnace or water heater and gives time to transition to zero-emission technologies

(3) Alternative Compliance Option for Multifamily Properties

An owner of a property with ten or more housing units may elect to own one Water Heater per ten housing units and install for up to 24 months prior to installing a Water Heater that complies with paragraph (d)(2) for a housing unit, provided:

(A) The Water Heater was manufactured prior to the applicable Table 2 compliance date and complies with paragraph (d)(1); and

(B) The Water Heater is installed in an Existing Building that requires any construction listed below to comply with paragraph (d)(2):

(i) Expanding the space designed to house the Water Heater that complies with paragraph (d)(2) or associated equipment;

(ii) Relocating the water heater that complies with paragraph (d)(2) or associated equipment; or

(iii) Performing a utility upgrade.

Original Proposal for Installations at High-Altitude

- PAR 1111: three new exemptions that extend timelines for high altitude buildings
  - Extend compliance date for all furnaces to 2030
  - Further extend compliance date for wall and floor furnaces to 2032
  - Allow dual fuel system installation until 2035
- PAR 1121: one new exemption that extends timeline for high altitude buildings
  - Extend compliance date to 2030
- Staff is considering alternative proposal for furnace replacements in high altitude

PAR 1121:

(4) Water Heaters for installation or use in Existing Buildings at High-Altitude are exempt from paragraph (d)(2) until January 1, 2030, if the recordkeeping and labeling requirements in (g)(5) are met.

PAR 1111:

(3) Furnaces for installation or use in Existing Buildings at High-Altitude are exempt from the following emission limits until the dates below, provided the manufacturer, distributor, Reseller, or Installer complies with the recordkeeping and labeling requirements in paragraphs (h)(2):

(A) Until January 1, 2030, Downflow Furnaces with a Rated Heat Input Capacity less than 175,000 Btu per hour and Condensing or Non-Condensing Furnaces with a Rated Heat Input Capacity greater than or equal to 100,000 Btu per hour that are certified to emit 40 ng/J or less of NOx are exempt from paragraph (d)(1);

(B) Until January 1, 2030, Furnaces that comply with paragraph (d)(1) are exempt from paragraph (d)(2);

(C) Until January 1, 2032, Wall Furnaces or Floor Furnaces are exempt from paragraph (d)(2); and

(D) Until January 1, 2035, a Dual Fuel System with the Furnace certified to comply with paragraph (d)(1) are exempt from paragraph (d)(2) provided the Heat Pump component is Installed no more than 24 months after the Furnace in the Dual Fuel System.

Additional Exemptions

- Exemptions provided for the following :
  - Mobile home furnaces and water heaters for installation or use in master-metered mobile home parks
  - New buildings with building permit issue prior to [Date of Adoption]
  - Furnaces and water heaters sold to a rental company for alternative complian
- Same provisions in both PARs 1111 and 1121
  - PAR 1111 example provided

(2) Paragraph (d)(2) shall not apply to the following Furnaces-:

(A) Mobile Home Furnaces for installation or use in master-metered Mobile Home parks, which are Mobile Home parks that take electricity through a master meter and then distribute it to park residents through their own system; and

(B) Furnaces that will be installed or used in New Buildings with building permit issued prior to [Date of Adoption] by the appropriate enforcement agency; and

(C) Furnaces sold to a Rental Company that will offer Furnaces for rent pursuant to paragraphs (g)(2) and (g)(3).

Streamlined Recordkeeping Provision for Rental Units

- PAR 1111 and PAR 1121 propose a requirement for registration through the compliance portal for
  - Rental units by rental company allowed by the alternative compliance option; and
  - Units purchased by the owner of a multifamily property allowed by the exemption
- The rental company and property owner must record each use and maintain the records for five years
- Same provisions in both PARs 1111 and 1121
  - PAR 1111 example provided

(5) Recordkeeping for Rental Companies

The Rental Company offering units pursuant to paragraphs (g)(2) and (g)(3) shall:

(A) Register all Furnace(s) offered for rent through the Compliance Portal no later than 72 hours after receiving the Furnace(s); and

(B) Record the rental date and return date of each Furnace, maintain those records for five years, and make those records available to the Executive Officer upon request.

(6) Recordkeeping for Owners of Multifamily Properties

The owner of a multifamily property that elects to purchase Furnaces pursuant to paragraph (g)(4) shall:

(A) Register the Furnaces through the Compliance Portal no later than 72 hours after receiving the Furnace(s); and

(B) Record the date of installation and date of removal each time when a Furnace is used, maintain records for five years, and make those records available to the Executive Officer upon request.

Revised Labeling Requirement

- Stakeholders expressed concern on the labeling language required between the new and existing building compliance dates
  - Some manufacturers do not supply mobile home units
- PAR 1111 and PAR 1121 propose to allow alternative labeling language for this provision
  - Manufacturer shall seek approval for the alternative language six months ahead and must be approved by the Executive Officer

(3) New and Existing Building Labeling Requirement

Pursuant to the labeling schedule in Table 3, the manufacturer of any Furnace that is supplied or offered for sale for use in the South Coast AQMD prior to the applicable Table 2 compliance dates that complies with the Table 1 emission limits but not the Table 2 emission limits, shall clearly display on the shipping container, or the name plate of the furnace, the following:

(A) "If Installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings 2) After January 1, 2028, only for installation in mobile homes; and 3) After January 1, 2030, not compliant for use and installation in South Coast AQMD.";

(B) A manufacturer may use alternative language in lieu of subparagraph (h)(3)(A), provided the alternative language is:

(i) Similar to the language in subparagraph (h)(3)(A);

(ii) Submitted to the Executive Officer at least six months prior to the applicable start date in Table 3; and

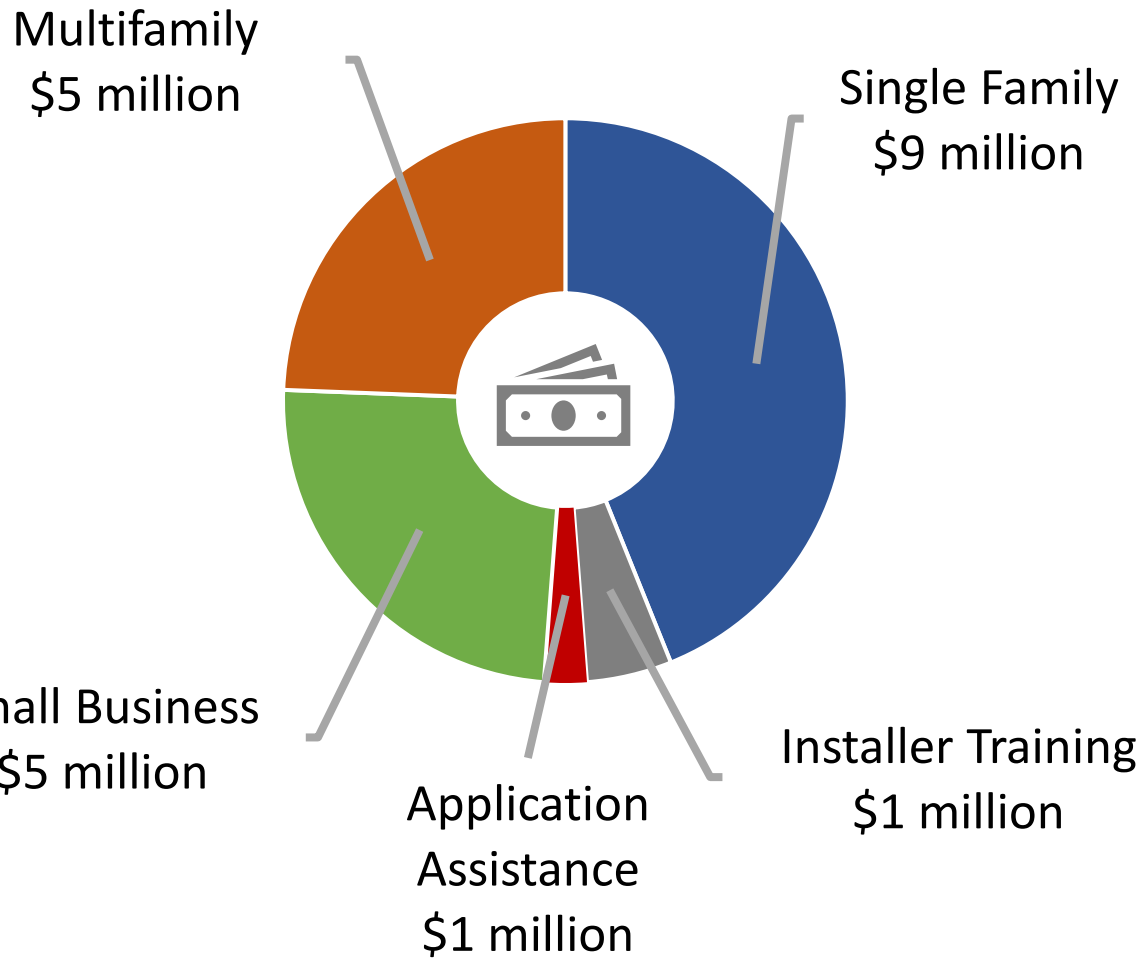
(iii) Approved by the Executive Officer prior to the appliable start date in Table 3; and

(C) The manufacturer shall use the language in subparagraph (h)(3)(A) if the alternative language is not approved.

Go Zero Rebate Program Development

Go Zero Pilot Funding Levels

- Pilot program funding with $21 million, funded by Rule 1111 and Rule 1121 mitigation fees
- 75% of rebate funding to be allocated for overburdened communities (identified by CalEnviroScreen)



More information at:
https://www.aqmd.gov/home/rules-compliance/residential-and-commercial-building-appliances

Go Zero Proposal Review

- Request for proposal released on August 2, 2024, to solicit proposals for five sub-projects:
  - Single Family Rebates
  - Multifamily Rebates
  - Small Business Rebates
  - Installer Training
  - Outreach and Application Assistance
- Seven bidders submitted proposals for all or some sub-projects
- Review panel consists of:
  - Four staff from two departments in South Coast AQMD; and
  - One staff from the California Air Resources Board
- The panel has concluded the review and is in the process seeking approval of the selection(s)
- Staff continues to meet with stakeholders on program suggestions for implementation and outreach

Next Steps

Next Steps

December 13, 2024

End of extended public comment period

December 20, 2024

Update Stationary Source Committee

January 7, 2025

Release draft PAR 1111/1121 and draft supporting documents

Q1 2025

Launch Go Zero Incentive Program

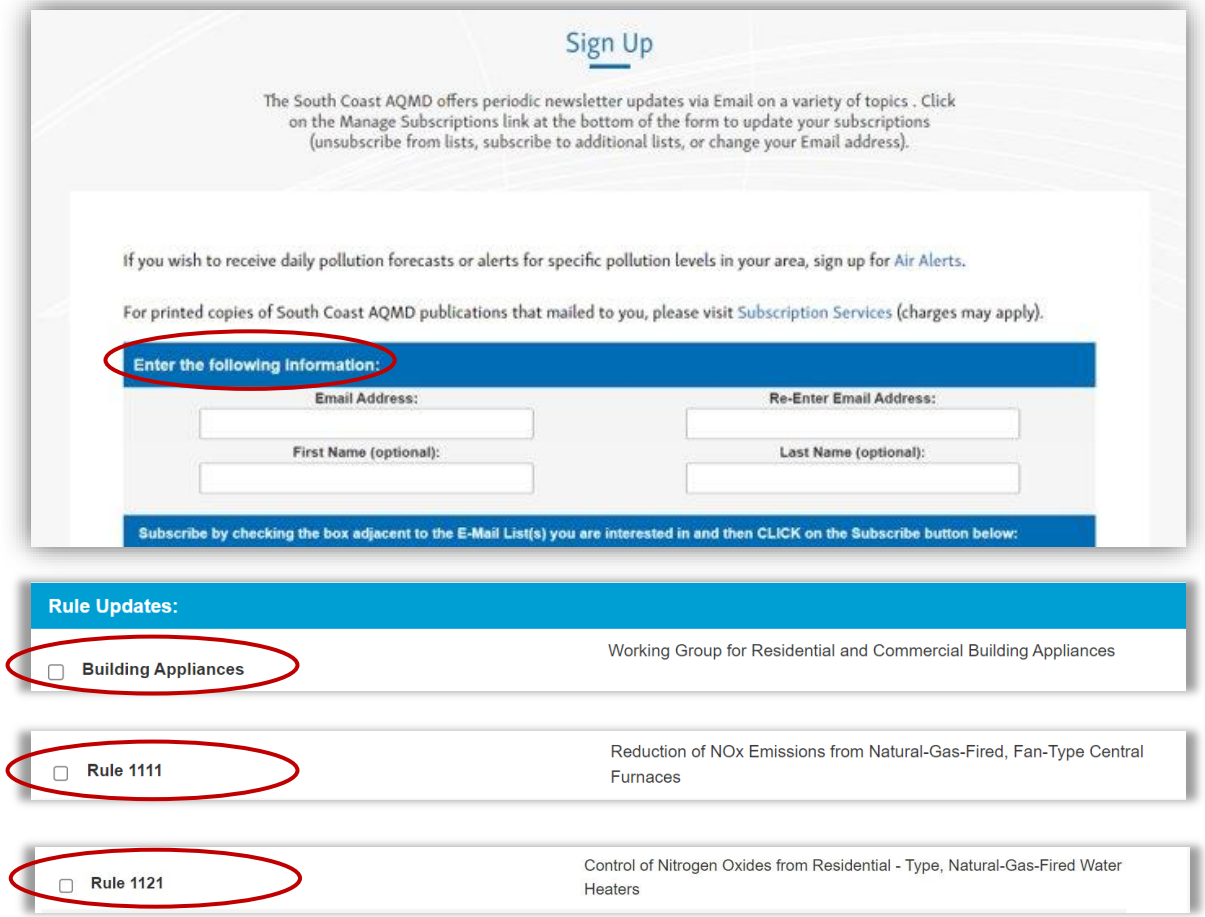
February 7, 2025

Public Hearing

Sign Up for Notifications

- To receive newsletter updates via email for notifications regarding the 1111 and 1121 rule development and other forthcoming building appliances rules, please subscribe by checking the **Rule 1111, Rule 1121,** and **Building Appliances** check boxes located under Rule Updates: http://www.aqmd.gov/sign-up

- To receive printed copies of South Coast AQMD publications via mail, please visit: http://www.aqmd.gov/nav/contact/subscription-services



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