APPENDIX A:
GENERAL RESPONSE TO COMMENTS

GENERAL RESPONSES

There are eleven general responses included in this chapter. They are:

1) Consumer Choice
2) Cost and Affordability of Zero-Emission Residential Space Heating and Water Heating Appliances
3) Electricity Demand and Grid Sustainability
4) Zero-Emission Technology Readiness
5) Outreach
6) Cost-Effectiveness Method
7) Emergency Replacement
8) High Altitudes
9) EPCA
10) Need for Rule Amendments
11) Need for Incentives

General Comment 1: Consumer Choice

Commenters expressed concerns about the original rule proposal on limiting consumer choice. Specifically, commenters would like to have the choice of installing natural gas units.

Response to General Comment 1

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use.

With the new rule concept, consumers will be able to choose either zero-emission appliance options or conventional natural gas-fired appliance options in the market. The new rule concept provides more options for consumers to choose from, whether it be a zero-emission unit or conventional natural-gas fired unit. For both PAR 1111 and PAR 1121, manufacturers can choose to enroll in the Zero-Emission Manufacturer program, which specifies the compliance target for zero-NOx emission units and NOx-emitting units that progresses over time. For each phase, the compliance target seeks an increasingly higher percentage of zero-NOx emission units, but manufacturers can continue to offer NOx-emitting units and meet consumer demand. Sales of NOx-emitting units above the goals will be subject to a higher mitigation fee. Manufacturers already supply zero-NOx emission units in the current market, and staff estimates that 20 percent to 30 percent of residential-type space and water heating units are already zero-NOx emission units in the South Coast AQMD region[(1)]. The new rule concept provides a pathway for more zero-NOx emission options in the market over time.

When consumers elect to install zero-NOx emission units, there are also many products they can choose. For instance, there are multiple air source heat pump original equipment manufacturers for residential space and water heating use. AHRI directory shows over 2,000,000 air-source heat

[(1)] https://www.eia.gov/consumption/residential/data/2020/

pumps being certified by over 600 brands, providing many options to consumers[(2)]. Many manufacturers and suppliers have committed to creating the capacity to achieve California's goal for heat pump market adoption[(3)].

General Comment 2: Cost and Affordability of Zero-Emission Residential Space Heating and Water Heating Appliances

This section addresses public comments on the costs of adopting zero-NOx emission technologies in buildings, particularly in residential buildings, that may cause an affordability issue, especially for low-income consumers.

Response to General Comment 2:

The new rule concept for Proposed Amended Rules 1111 and 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will further address the cost concern for zero-NOx emission units. The new rule proposal allows the sale of both zero-NOx emission units and NOx-emitting natural gas-fired units, allowing consumers to make individual decisions on the type of unit to install.

Staff summarized the cost examples on the clearinghouse webpage[(4)]. The estimated project costs for zero-NOx emission units shown on this page were compiled based on real-world heat pump installations by TECH Clean California from January 2024 to December 2024 in the four-county region of the South Coast AQMD that include unit cost, installation cost, and any electrical service upgrade costs. Comparing conventional unit project costs derived from the Energy and Environmental Economics (E3) study, staff estimates no additional cost for implementing PAR 1111 in a typical HVAC replacement (i.e., replacing both furnace and air conditioning system) for single-family homes, but does anticipate additional cost of up to $8,000 for furnace only replacement in homes without an existing air conditioning system but the heat pump includes the added value of space cooling. Staff estimates additional cost of $700 to $4,000 varied by counties, or about $2,100 for the region weighed by each county's population for a water heater replacement.

Local and state incentive programs are available to offset some of the upfront costs for implementing zero-NOx emission standards, including the upcoming South Coast AQMD Go Zero incentive program. The Go Zero pilot phase, funded with $21 million, will provide $1,000 to $4,000 in incentives for each installation which can be stacked with incentives from other programs. The Go Zero incentive program pilot phase will be launched in early 2025 and is estimated to expand by five-fold for future phases with current funding sources. Further, should the new rule concept be adopted, the manufacturer alternative compliance mitigation fee will provide a future revenue stream to keep that program viable in the future.

With regard to electric upgrade and utility costs for consumers who choose zero-NOx emission units, the project cost examples listed on the clearinghouse website include electric upgrade costs, which is also included in staff analysis of cost-effectiveness under Chapter 2 of the staff report.

(2) https://ahridirectory.org/
(3) https://www.gov.ca.gov/2022/07/22/governor-newsom-calls-for-bold-actions-to-move-faster-toward-climate-goals/
(4) https://www.aqmd.gov/home/rules-compliance/residential-and-commercial-building-appliances/cost

Given that 87 percent of homes in the South Coast AQMD region have air conditioning systems, most of the homes would not require electrical upgrades to install zero-NOx emission units. In addition, there are various zero-NOx emission options that do not need electrical upgrades, such as portable heat pumps for space heating and cooling and 120V plug-in heat pump water heaters. While an electrical upgrade may be needed in some cases, some planners such as Redwood Energy[(5)] believe it can be avoided, even with all electric appliances in a home. Staff gathered cost data for various types of furnaces and water heaters for the cost-effectiveness analysis described in Chapter 2 of this report. Electrical upgrades are considered in the costs to retrofit a zero-NOx emission appliance. Further, Chapter 2 provides discussion on new and emerging technologies that are less likely to require a panel upgrade such as 120V plug-in heat pump water heaters, portable heat pumps for space heating/cooling, and multi-functional heat pumps for water heating and space heating/cooling. Commercial and multifamily properties that already rely on AC for cooling are not anticipated to need electrical upgrades if they pursue zero-NOx emission options. If the electrical system can supply sufficient power to operate an AC, it can also support a heat pump system that both cools and heats. The addition of zero-NOx emission water heaters will add to the demand; however, 120V units designed for building retrofits are available and can be plugged into a standard outlet.

With regards to utility costs, staff considered the cost difference of operating a zero-NOx emission heat pump appliance versus a NOx-emitting natural gas fired appliance. While electricity rates in California are higher than natural gas rates, that does not mean operating costs for heat pumps will be higher than their gas counterparts because the utility rate is not the only determining factor for operational costs. When the efficiency of heat pumps is factored in, staff projects there will be lifetime utility cost savings because heat pumps can be over three times more efficient than NOx-emitting natural gas appliances used for water heating, space heating, and cooling. Chapter 2 of the staff report provides a summary of fuel switching cost for PAR 1111 and PAR 1121, which shows lifetime utility cost savings ranging between $200 and $1,100 depending on the equipment category.

With regards to consumers choosing zero-NOx emission options for the health of their communities, staff understands the costs associated with retrofitting zero-NOx emission appliances and anticipates that the new proposed amended rules will address concerns, while also sending a market signal to manufacturers, which will, in turn, drive down overall costs of zero-NOx emission units. Additionally, federal, state, and local incentives, including the upcoming South Coast AQMD Go Zero incentive program, will help alleviate the financial burden for those who pursue zero-NOx emission options.

For lower income consumers who choose to pursue zero-NOx emission units, with regards to mitigating the costs of more electrical appliances in households, the state legislature's Assembly Bill 205 creates a flat rate for electric bills, resulting in lower per kilowatt-hour charges. The IEPR forecast projects increasing natural gas prices, while electricity rates will go up more slowly. Lower annual operational costs are anticipated based on the fuel price estimates which are based on a combination of CEC's 2023 Integrated Energy Policy Report and Energy Information

[(5)] https://www.redwoodenergy.net/watt-diet-calculator

Administration national level forecasts. Overall, staff expects consumers to save money on operating costs when switching to zero-NOx emission units.

Staff recognizes the need to pursue emission reductions with an earlier timeframe to address the air quality needs of the South Coast AQMD and is committed to monitoring rule implementation after rule adoption.

General Comment 3: Electricity Demand and Grid Sustainability

Many commenters expressed concerns regarding power supply and grid sustainability if a zero-NOx emission standard would be required for all sales. Commenters also urged staff to work with utility providers for those concerns. Most of those comments were received on the original rule proposal before staff revised the rule concept.

Response to General Comment 3:

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Consumers will have the choice to purchase conventional NOx-emitting units when an appliance needs to be replaced at end of unit life. The new rule concept means a slower transition to zero-emission by phased approach for compliance target and allowing NOx-emitting units and more time to enhance the grid and plan for electricity demand. The image below shows the proposed phased transition approach.

Target Dates	2027-2028	2029-2032	2033-2035	2036 and after
NOx Emitting Units (e.g. gas)	70%	50%	25%	10%
Zero-NOx Emission Units	30%	50%	75%	90%

Staff recognizes the importance of electric grid reliability for electric units, but also for NOx-emitting natural gas-fired units, which often require electricity to operate. Agencies and organizations throughout the state that are involved in energy distribution such as CEC, CPUC, and local utilities such as Southern California Edison, are aware of the challenges ahead in terms of energy and infrastructure availability and are actively engaged in planning to anticipate future demand as the state moves toward a zero-emission future. The CEC, CPUC, and CARB are working to coordinate efforts, identify issues not covered by ongoing efforts, and assess needed actions to better align the energy system with the state's climate targets. The CEC adopts an IEPR every two years and an update every other year, and the 2022 IEPR has recognized the proposed zero-emission requirements for residential and commercial buildings in California and included recommendations and updates to the energy demand forecast. Furthermore, CAISO is planning billions of dollars in transmission capacity projects over the next 20 years, and the 20-Year Transmission Outlook document from May 2022 considers transmission needs to meet load and

renewable energy growth aligned with state policy. In 2021, the CPUC created new programs and modified existing programs to reduce energy demand and increase energy supply during critical hours of the day. Per Senate Bill 350 (De León, 2015), the CPUC developed an integrated resource planning process to ensure California's electric sector meets its greenhouse gas reduction goals while maintaining reliability at the lowest possible costs.

Staff is also in regular contact with utility providers within the South Coast AQMD, such as Los Angeles Department of Water and Power, Clean Power Alliance (CPA; electricity provider for communities), and California Community Choice Association (CalCCA). SCE, one of the major local utilities, supports the proposed rule amendments and timelines in the rule. On the utility level, according to SCE's 2021 Sustainability Report, SCE is expected to invest significantly in the electric grid, including energy storage and increases in Distributed Energy Resources such as solar. In a current new study by E3[(6)] (contracted by SCE) on building electrification infrastructure impacts, SCE is estimating the required amount of energy demand and power generation, transmission, and distribution capacity, in preparation for the upcoming zero-emission building appliance rule implementation. SCE participated in the rule development for PAR 1111 and 1121 and submitted a comment letter (Comment Letter #21 in Appendix C) in support of the original rule proposals, which included a faster transition to zero-NOx emission building appliances.

Sustainable electricity supply is essential for both zero-NOx emission and NOx-emitting units. Many natural gas appliances also rely on electricity to operate. For example, all gas-fired fan-type central furnaces currently regulated by Rule 1111 require electricity to operate and therefore cannot operate during a power outage. Some older model water heaters may not need electricity to operate; however, newer features on modern water heaters require electricity to operate. Further, for tank type water heaters, the water in the tank will stay warm for several hours in the event of a power outage.

In addition to zero-NOx emission electric technology options, fuel cells and possibly other new technologies can be used to support the transition to a zero-NOx emission future. South Coast AQMD will continue working with developers and other agencies to deploy other types of clean energy such as fuel cells. Early planning and collaborative problem solving involving all stakeholders will be necessary to ensure grid readiness and infrastructure availability.

General Comment 4: Zero-NOx Emission Technology Readiness

Many commenters expressed concerns about the readiness of zero-NOx emission technologies. Most of those comments were received on the original rule proposal before staff revised the rule concept.

Response to General Comment 4:

The new rule concept for Proposed Amended Rules 1111 and 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Consumers will have the choice to purchase conventional NOx-emitting units when an appliance needs to be

[(6)] https://etcc-ca.com/reports/grid-impacts-south-coast-aqmd-proposed-zero-nox-standards

replaced at end of unit life. This proposal means a slower transition to zero-emission and more time for zero-NOx emission technologies to develop and mature.

The 2022 AQMP's objective is to transition to zero-emission technologies, wherever feasible, and staff identified technically feasible zero-NOx emission control options for equipment subject to Rules 1111 and 1121. Staff identified various zero-NOx emission technologies that have been long-proven and are commercially available. As discussed in Chapter 2, South Coast AQMD is technology-neutral and fuel-neutral, and various technologies could achieve zero-NOx emission. Heat pumps may currently be a predominant zero-NOx emission technology in the market, and modern heat pumps can reach 300 to 400 percent efficiency or even higher efficiencies when operated in mild climates such as in the South Coast AQMD.

Heap pumps are a mature technology that have had great market adoption in the United States and other countries. According to the U.S. Energy Information Administration 2020 Residential Energy Consumption Survey, about 15 percent of existing U.S. homes and one-third of existing homes in southern states of the U.S. currently use electric heat pumps. The Air Conditioning, Heating, & Refrigeration Institute (AHRI) monthly shipment report indicates that more heat pumps have been sold in the U.S. for space heating than gas furnaces since 2021, and electric water heaters have made up the majority of both residential and commercial water heater shipments. To comply with federal energy efficiency standards[(7)], starting in 2029, most electric water heaters would require heat pump technology, further enhancing heat pump market adoption. Heat pumps have even higher adoption rates in Asian countries than in North America. About 90 percent of households in Japan have heat pumps for heating and cooling[(8)]. China has the largest number of new heat pump installations in the world with over 12 million residential air-source heat pumps installed by 2021[(9)]. Around 10 percent of space heating needs globally were met by heat pumps in 2021, but the pace of installation is growing rapidly[(10)].

Meanwhile, technologies such as fuel cells may be applicable in some cases. Other technologies are developing and emerging in the U.S. and abroad, with wider adoption and lower costs expected over time.

Manufacturers have suggested that a clear policy direction of future effective zero-NOx emission standards is needed to justify further product development. PAR 1111 and PAR 1121 will provide regulatory certainty for the manufacturers to further advance zero-NOx emission technologies and provide more products to the market.

General Comment 5: Outreach

Commenters expressed the need to increase the amount of outreach on the proposed rules. Commenters suggested expanding the types of outreach channels and increasing the number of contacts.

(7) https://www.energy.gov/articles/doe-finalizes-efficiency-standards-water-heaters-save-americans-over-7-billion-household
(8) hpe-all.pdf
(9) China leads the world on heat-pump adoption - Chinadaily.com.cn
(10) Executive Summary – The Future of Heat Pumps – Analysis - IEA

Response to General Comment 5:

The new rule concept for Proposed Amended Rules 1111 and 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. The concern about outreach was largely driven to inform consumers of the originally proposed mandate to transition to zero-NOx emission appliances so they could weigh in on the proposed changes to the rules and be better able to plan ahead and make any potential upgrades prior to appliance replacement. With the current proposal, consumers will have the choice to purchase conventional either NOx-emitting units or zero-NOx emission units when an appliance needs to be replaced at end of unit life, making outreach of the upcoming changes less critical.

PAR 1111 and PAR 1121 were developed through a public process that began in the last quarter of 2023 and included a series of Working Group Meetings, a Public Workshop, individual stakeholder meetings, and site visits to affected facilities. The working group is comprised of representatives from manufacturers, trade organizations, permit stakeholders, businesses, environmental groups, public agencies, consultants, and other interested parties. Notices of this rulemaking (e.g., Notice of Public Workshop and Notice of Public Hearing for the initial hearing date and the delayed hearing date) were also posted in five newspapers of four counties and announced via e-newsletters in September 2024, October 2024, and March 2025, respectively.

To address the comments, staff enhanced public outreach for the rule development, increased the email notification distribution list by four times, sent notifications to social media followers, developed additional outreach materials, and reached out to many organizations (e.g., Councils of Government, industries, trade, and community organizations) to present the rule proposal. Staff has received over 12,000 comment letters as of the release of the draft staff report, far exceeding the number of comment letters typically received on an amendment to a South Coast AQMD rule, which demonstrates the impact of the enhanced outreach. Each person who submitted a comment was added to the subscribers list if an email address was provided and now the subscribers list has over 16,000 email addresses. Staff sends all rule updates and outreach to that list of over 16,000 subscribers.

While staff has worked hard to ensure stakeholders are aware of the current rulemaking, we recognize that public outreach and education should be ongoing and in a format that is easily understandable by members of the public. Staff is committed to conducting a rigorous outreach campaign if the proposed rules are adopted to ensure the public is aware of the future appliance regulations, available incentive funding, and the benefits of installing modern, clean, efficient zero-NOx emission technologies, such as heat pumps. The outreach portion of the upcoming Go Zero incentive program is intended not only to educate consumers about the rebates and heat pump appliances but also the Proposed Amended Rules 1111 and 1121. The Go Zero incentive program has also allocated funding for installer training sessions, which will not only teach contractors how to install zero-NOx emission appliances and related processes but also provide education on the rules that contractors can share with consumers. The anticipated launch of the Go Zero incentive program is 2025.

Finally, staff has redesigned the Residential Building Appliance Clearinghouse Webpage (https://www.aqmd.gov/home/rules-compliance/residential-and-commercial-building-appliances). This Clearinghouse webpage is a central source of all information related to PAR 1111 and PAR 1121, including proposed rule language, cost information, outreach efforts and materials, upcoming meetings, comments, the Go Zero incentive program, and other resources such as similar rulemakings by other agencies.

General Comment 6: Cost-Effectiveness Method

Many commenters asked for clarification on the cost-effectiveness method and analysis.

Response to General Comment 6:

The major components of the cost-effectiveness analysis included capital costs, emission reductions, discount rate, and equipment useful life. Staff revised the cost effectiveness write-up in the staff report and a detailed explanation be found in Chapter 2. Further, discussions and examples of the cost-effectiveness calculation can be found in the presentations for Working Group Meetings 2, 3, 4, 6, and 7[(11)].

According to the 2022 AQMP, the established cost-effectiveness screening threshold is considered neither a starting point for control costs, nor an absolute cap. During the rulemaking process, if a proposed emission standard has a cost-effectiveness that is above the threshold, staff will hold a public meeting to discuss other emission standards with a cost-effectiveness at or below the proposed screening threshold and/or compliance or implementation options to address an emission standard that is above the proposed screening threshold.

Staff recognized that zero-NOx emission limits are above the cost-effectiveness screening threshold for some categories. This is addressed with the ZEM manufacturer alternative compliance option that allows the sales of both zero-NOx emission appliances and NOx-emitting natural gas-fired appliances. Staff estimated the weighted average cost-effectiveness for implementing the manufacturer ZEM alternative compliance option, which is lower than the screening threshold using reasonable assumptions on consumer behavior, as explained in Chapter 2. This alternative compliance option satisfies the direction set forth by the 2022 AQMP for cost-effectiveness analysis. The alternative will address affordability as well as the higher cost-effective categories as NOx-emitting units will be allowed for sale. Staff discussed the cost-effectiveness and the ZEM alternative compliance option in several public meetings including Working Group Meeting #8, the Public Consultation held on March 6, 2025, and Stationary Source Committee Meetings held in February 2025 and March 2025.

In addition to the cost-effectiveness analysis detailed in Chapter 2, staff has prepared a Socioeconomic Impact Assessment that will be made available at least 30 days prior to the Public Hearing. The analysis considers the range of probable costs or savings, impact to small businesses, and impact on employment and the regional economy.

[(11)] https://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1111-and-rule-1121

General Comment 7: Emergency Replacement

Stakeholders commented on the challenge of emergency replacement with zero-NOx emission units and the feasibility of an emergency replacement provision that allows short-term rental units. Some commenters also mentioned that the permitting process for installation of zero-NOx emission units could cause delay and add to the concerns for emergency replacement.

Response to General Comment 7:

Staff agrees with commenters on the challenge of implementing the initially proposed emergency replacement provision and thus removed it from the proposed amended rules. Staff has revised the original rule proposal and added a new rule concept for PAR 1111 and PAR 1121 that was released on February 7, 2025. The new rule concept includes zero-NOx emission sales targets for manufacturers and will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Consumers will have the choice to purchase conventional NOx-emitting units or zero-NOx emission units when an appliance needs to be replaced at end of unit life, which can address the emergency replacement concern.

For owners and operators who choose to install zero-NOx emission units at emergency replacement, many homes are ready for common zero-NOx emission space heating units such as 240V heat pump HVAC systems that can replace existing conventional HVAC systems with no need for complex construction or electrical upgrade. For homes that are not as ready, the owners and operators have the option to install plug-in units (e.g., 120V heat pump water heaters or portable heat pumps) that require minimum additional installation work. For permanent installations meeting zero-NOx emission limits, the upcoming South Coast AQMD Go Zero incentive program along with many other local, state, and federal-level incentives provide financial help to offset some of the upfront costs.

To further expedite the process of installing efficient, clean, heat pumps, SB 282 (Wiener), the Heat Pump Act, was introduced on February 5, 2025, and proposes to require automated permitting for standard heat pump water heater and HVAC installations, streamlining the permitting process for a key climate technology. While this is only a proposal, it demonstrates action being taken to try to reduce hurdles and costs when transitioning to zero-NOx emission appliances.

General Comment 8: High-Altitudes

Stakeholders from mountain communities expressed concerns about zero-NOx emission technologies and considerations for high altitudes. Most of those comments were received on the original rule proposal before staff shared the new rule concept.

Response to General Comment 8:

The new rule concept for PAR 1111 and PAR 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx emission units and NOx-emitting natural gas-fired units to be sold and installed for use. Consumers will have the choice to purchase conventional NOx-emitting units when an appliance needs to be replaced at end of unit life. This manufacturer alternative compliance option will provide flexibility, including for high-altitude installations.

Staff understands that the mountain communities have colder climates compared with the other areas of South Coast AQMD; however, as discussed in Chapter 2, zero-NOx emission technologies have been adopted in many cold climate regions. Cold climate heat pumps can pull heat from the air even at sub-zero temperatures and are utilized in colder climates in the U.S. and abroad. For example, Maine has one of highest per capita heat pump adoption rates, outpacing Scandinavian countries, with rebates incentivizing installation of approximately 116,000 heat pumps in a state that has fewer than 600,000 occupied housing units. Heat pump technology is also being adopted in states such as Vermont and Alaska, and according to the International Energy Agency, 60 percent of Norway's buildings are fitted with a heat pump. Heat pump technology that operates in cold climates can be found through the Northeast Efficiency Partnerships website[(12)], which lists heat pumps that can operate down to negative 25 degrees Fahrenheit. Staff understands the importance of space heating in mountain communities. Gas furnaces regulated by Rule 1111 also require electricity to operate, and it would be detrimental to lose power for a prolonged period with or without the zero-emission standards. Chapter 2 provides some discussion on grid reliability, and further discussion can be found in Response to General Comment 3. Recent technology development includes various zero-NOx emission options that minimize building or electrical upgrades during installation and thus reduce the cost. An example is a portable heat pump that works in cold climates, can be installed by two individuals, and can be plugged into a wall outlet[(13)]. Staff recognizes that cooling by AC systems is less common and necessary at high altitudes. While heat pumps provide both heating and cooling, there is a higher incremental cost to replace only a furnace versus a furnace and an AC at the same time.

The original rule proposal provided alternative compliance options for high-altitude areas allowing delayed implementation for some categories. Staff later proposed a new concept for a manufacturer alternative compliance option that allows sales of both zero-NOx emission units and NOx-emitting natural gas-fired units. Further, based on stakeholder comments, PAR 1111 is retaining the exemption of downflow furnaces for high-altitude installation. Staff will re-assess the available technologies and costs before key rule implementation dates to assess if costs decrease as zero-NOx emission technologies gain more market adoption. For consumers who choose zero-NOx emission options for clean air, staff acknowledges the higher upfront costs to retrofit some units; however, operating heat pumps can result in cost savings due to their high efficiency. Costs associated with retrofitting heat pumps can be offset using state and local rebates including South Coast AQMD's Go Zero incentive program is also expected to help reduce costs.

General Comment 9: EPCA

Commenters raised a concern regarding the Energy Policy and Conservation Act (EPCA) for the original rule concept. EPCA preempts State and local regulations concerning the energy use of many natural gas appliances.

Response to General Comment 9:

The new rule concept for Proposed Amended Rules 1111 and 1121 released on February 7, 2025, which includes zero-NOx emission sales targets for manufacturers, will allow for both zero-NOx

(12) https://neep.org/heating-electrification/ccashp-specification-product-list
(13) https://www.gradientcomfort.com/products/gradient-all-weather-120v-window-heat-pump

emission units and NOx-emitting units to be sold and installed for use. Consumers will have the choice to purchase conventional NOx-emitting units when an appliance needs to be replaced at end of unit life.

PAR 1111 and PAR 1121 are not preempted by EPCA. EPCA expressly preempts regulations concerning the energy efficiency or energy use of products for which a federal energy efficiency standard is in place. 42 U.S.C. § 6297(c). The Ninth Circuit Court of Appeals recently issued a "very narrow" holding in *California Restaurant Association v. City of Berkeley*, 89 F.4th 1094, 1101, 1106 (9th Cir. 2024), that EPCA preempted a local building code prohibiting the installation of natural gas infrastructure in new buildings. The court in *Berkeley* reasoned that the building code concerned the energy use of covered appliances by regulating the quantity of natural gas they could use. *Id.* at 1101-02. The court repeatedly emphasized that its holding was "limited" only to building codes that regulate the gas usage of certain consumer appliances. *Id.* at 1101, 1103, 1106.Indeed, as Judge Baker explained in his concurrence, "EPCA preemption is unlikely to reach a host of state and local regulations that incidentally impact 'the quantity of natural gas' directly consumed by a [covered] product at point of use." *Id*. at 1117.

Further, in a recent federal district court ruling, a city gas ban was upheld [(14)]. A judge in the Southern District of New York ruled that New York City's local gas ban in new buildings was not preempted by EPCA and therefore dismissed a challenge by unions, builders, and trade groups.

Unlike Berkeley and New York City's regulations, PARs 1111 and 1121 are health- and safety-based emission limits on appliances, issued consistent with Congress's direction to the states to attain the National Ambient Air Quality Standards in section 110 of the Clean Air Act by regulating emission sources other than mobile sources. The rules are not building codes, and they do not ban natural gas or otherwise regulate the amount of natural gas used by covered equipment. PARs 1111 and 1121 are technology- and fuel-neutral and are focused on achieving the maximum NOx emission reductions possible. Equipment that meets the NOx emission limits, regardless of the energy source, is permitted under PARs 1111 and 1121.

General Comment 10: Need for Rule Amendments

Many comments were on the need for rule amendments, with divided opinions. Some commenters suggested to delay or cancel the rule development, while other commenters urged no delay for the adoption of PAR 1111 and PAR 1121. Most of the opposition comments were received on the previous rule concept prior to the new rule concept and many conflated the need for the rule amendment with global climate change instead of regional air quality.

Response to General Comment 10

PAR 1111 and PAR 1121 are needed to address local air quality by reducing NOx emissions. South Coast Air Basin has been classified as "extreme" nonattainment for the 2015 federal ozone standard. Ozone is formed when NOx and VOC react in the presence of sunlight. While both NOx and VOC contribute to ozone formation, the key to attaining the ozone standard in the Basin is to

[(14)] https://www.publichealthlawcenter.org/sites/default/files/case/NYC-Plumbers-Memorandum-Opinion-and-Order.pdf?source=email

reduce NOx. Staff is required to consider emission reduction for all categories and set future effective dates to reduce emissions as early as feasible. NOx emissions need to be reduced by over 67 percent for all sources in order for this region to meet federal air quality standards by the 2037 deadline. PAR 1111 and PAR 1121 will cover over 10 million units emitting an estimated 6.8 tpd NOx emissions. Comparatively for NOx emission, by 2037, staff estimates all utilities emit 2 to 3 tpd, all refineries emit about 4 tpd, and all passenger vehicles emit about 7 tpd. PAR 1111 and PAR 1121 will also be considered as a control strategy to attain the 2012 annual PM 2.5 national ambient air quality standard because NOx are also precursors to PM 2.5 formation.

The health benefit from the rules will be significant. The 2022 AQMP Final Socioeconomic Report calculated incidences of avoided deaths per ton of NOx emission reductions (incidence per ton, or IPT). The IPT method provides a robust and reasonable estimate of the magnitude of the projected health benefits and is consistent with previous analyses conducted by South Coast AQMD. The IPT method is also utilized by the U.S. Environmental Protection Agency and the California Air Resources Board for their regulatory analyses. Staff is preparing a Draft Socioeconomic Impact Assessment (SIA) for PAR 1111 and PAR 1121 which will include a detailed description of the methods, procedures, and results of the health benefits analysis. The Draft SIA will be released for public review, at least 30 days before the public hearing for PAR 1111 and PAR 1121.

The South Coast AQMD standards cannot be less stringent than the state-wide standard, which will be set by CARB during its ongoing rulemaking process. CARB's current rulemaking for potential statewide appliance standards would be focused on GHG emissions, while also quantifying the air quality co-benefits of reducing criteria pollutants such as smog-forming NOx, CO, and toxic air contaminant emissions.

General Comment 11: Need for Incentives

Many comments stated that incentive funding is needed to assist with the transition to zero-NOx emission appliances.

Response to General Comment 11

Staff agrees that incentives will help with the transition to zero-NOx emission appliances. There are many local and state incentive programs that can provide financial help to offset some of the upfront costs for implementing zero-NOx emission standards, including the upcoming South Coast AQMD Go Zero incentive program. The Go Zero incentive program pilot phase will be launched in early 2025 and is estimated to expand by five-fold for future phases with current funding sources. Further, should the new rule concept be adopted, the ZEM alternative compliance mitigation fee will provide a future revenue stream to keep that program viable in the future.