

Attachment 1: Project Description

Project Title: Proposed Amended Rule (PAR) 1111 – Reduction of NO_x Emissions from Natural Gas-Fired Furnaces, and PAR 1121 – Reduction of NO_x Emissions from Small Natural Gas-Fired Water Heaters

Project Location: The proposed project is located in the South Coast Air Quality Management District's (South Coast AQMD) jurisdiction, which includes the four-county South Coast Air Basin (all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties), and the Riverside County portion of the Salton Sea Air Basin and the non-Palo Verde, Riverside County portion of the Mojave Desert Air Basin.

Description of Nature, Purpose, and Beneficiaries of Project: Description of Nature, Purpose, and Beneficiaries of Project: PAR 1111 proposes to: 1) expand rule applicability to include previously unregulated wall furnaces, floor furnaces, and commercial furnaces with a rated heat input capacity up to 2,000,000 British Thermal Units per hour (Btu/hr); and 2) establish four categories for the applicable units, each with zero-emission limits for new installations based on future effective dates. PAR 1121 proposes to include zero-emission limits for new installations based on future effective dates. PAR 1111 and PAR 1121 also propose to: 1) differentiate the zero-emission compliance dates for units installed in new or existing buildings; 2) provide alternative compliance options for emergency replacement and installations requiring specific type of construction; 3) introduce labeling and reporting requirements; 4) provide an exemption from zero-emission requirements for mobile homes in a master-metered mobile home park; and 5) update and clarify rule language. Replacement of furnaces and water heaters are expected to occur at the end of the existing equipment's useful life although some replacements could occur prior to the end of useful life with the availability of incentive funding. Upon full implementation, emission reductions of oxides of nitrogen (NO_x) up to 7.7 tons per day by 2055 for PAR 1111, and 2.3 tons per day by 2045 for PAR 1121, are expected. The Draft SEA concluded that significant and unavoidable adverse environmental impacts may occur for the topics of air quality due to construction activities, and energy due to increase in electricity and natural gas demand (natural gas used in the short term to produce electricity until renewable energy resources can supply the electricity demand). No other significant adverse impacts were identified. Facilities and residences with equipment subject to the proposed project may be identified on lists compiled by the California Department of Toxic Substances Control per Government Code Section 65962.5. However, implementation of PAR 1111 and PAR 1121 is not expected to alter the status of the facilities and other locations on the lists.

Attachment 2: Areas of Controversy (continued)

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
1.	Grid	Electrical generation may not be able to meet the demands of the millions of electrical appliances required by these proposed amended rules.	<ul style="list-style-type: none"> • While peak load causes more concern for the grid, implementing PAR 1111 and PAR 1121 would not have as much impact on the peak load during summer as on the annual total load. PAR 1111 units will be expected to operate during winter, while peak electricity demand for California occurs during summer. PAR 1121 units will be expected to operate year-round but will consume less electricity than PAR 1111 units. In the Pathway to 2045 document¹, SCE expected a 60 percent increase in electricity load and 40 percent increase in peak load by 2045, with building electrification responsible for 15 percent of load by 2045. • California is expected to add 18,000 MW of electricity generation capacity by 2028, which is the estimated peak demand increase from all electrical appliances, including PAR 1111 and PAR 1121 units, and the transportation sector by 2040. • The local and state utility agencies are developing programs and policies to address grid reliability. For example, 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.² Per Senate Bill 350 (De León, 2015), the CPUC developed an integrated resource planning process to ensure that California’s electric sector meets its greenhouse gas reduction goals while maintaining reliability at the lowest possible costs.³ • Staff will continue to monitor any issue related to grid reliability during the rule implementation and technology check-in by June 2027 and report the progress to the Stationary Source Committee.

¹ SCE, Pathway 2045, <https://www.edison.com/our-perspective/pathway-2045>

² California Public Utilities Commission, CPUC Ensures Electricity Reliability During Extreme Weather for Summers 2022 and 2023, <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-ensures-electricity-reliability-during-extreme-weather-for-summers-2022-and-2023>

³ California Public Utilities Commission, CPUC Approves Long Term Plans To Meet Electricity Reliability and Climate Goals, <https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-approves-long-term-plans-to-meet-electricity-reliability-and-climate-goals>

Attachment 2: Areas of Controversy (continued)

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
2.	Electrical panel upgrade	Many homes will need to do expensive electrical panel upgrades to use zero-emission units.	<ul style="list-style-type: none"> • For PAR 1111, most homes (86%) in the South Coast AQMD currently have existing air conditioning units, so converting to a Heating, Ventilation, and Air Conditioning (HVAC) heat pump would have similar electrical requirements. Thus, for the majority of homes equipped with existing air conditioning units, an electrical panel upgrade will not be needed. • Further, for the homes that do not have existing air conditioning units, depending on the year when the structure was built, the building code typically requires some redundancy (e.g., extra capacity in amperage) in the electrical panel. For these reasons, across-the-board electrical panel upgrades may be uncommon. • For PAR 1121, some zero-emission compliant units, such as 120V heat pump water heaters, do not require a dedicated circuit on the electrical panel, so the unit can be installed on an existing circuit without requiring any upgrades. • For homes that do require an electrical panel upgrade in order to install equipment in response to PAR 1111 and PAR 1121, the cost would be spread across multiple projects: water heater, space heater, and transportation.
3.	Increased size of zero-emission units	Heat pumps, especially heat pump water heaters, require larger footprint than their natural gas-fired equivalents and need more space for air flow	<ul style="list-style-type: none"> • While heat pump water heaters may be slightly larger than natural gas tank-type water heaters, most closets sized for a natural gas tank-type water heater will fit a heat pump water heater with little to no modification. • In the cases when a construction is required to expand the space or relocate the equipment, PAR 1111 and PAR 1121 contain provisions which will allow for the use of a temporary rental of a natural gas tank-type unit for up to 24 months so that hot water will be available while construction is occurring

Attachment 2: Areas of Controversy (concluded)

	Area of Controversy	Topics Raised by the Public	South Coast AQMD Evaluation
4.	Mobile Homes: Electrical Capacity	Mobile homes do not have the electrical capacity to support zero-emission appliances for space and water heating.	<ul style="list-style-type: none"> • The utilities supplied to a master-metered mobile home are restricted to a single meter. Some mobile home parks have a direct utility service, where a resident can potentially upgrade their electrical panel to support zero-emission appliances. • An increase in electrical demand for a master-metered mobile home may require extensive construction and can be cost-prohibitive for the property owner and residents. • Compliance dates for PAR 1111 mobile home furnaces in existing buildings and PAR 1121 mobile home water heaters in existing buildings are later than all other furnaces and water heaters. • PAR 1111 and PAR 1121 include a provision that exempts master-metered mobile homes. The California Public Utilities Commission is working on converting 50% of master-metered homes to direct utility service by 2030. When the master-metered homes are converted to a direct utility service, they are no longer exempt from the rules.
5.	Cost of Adoption	<p>1) Operating costs of zero-emission appliances is more costly than their natural gas counterpart</p> <p>2) Capital costs of zero-emission appliances are higher than their natural gas counterpart</p>	<ul style="list-style-type: none"> • PAR 1111 and PAR 1121 use the California Energy Commission’s (CEC) Integrated Energy Policy Report (IEPR) released in January 2024. The report projects a natural gas rate increase of 50% and an electricity increase of 21%. These rates are used to calculate the fuel switching costs for both rules, which results in cost savings over their respective equipment lifetimes. • The replacement costs for all equipment categories are less than the cost-effectiveness threshold of \$349,000 per ton of NOx reduced. Furthermore, capital costs are expected to drop as deployment of the zero-emission technology increases. • In addition, there are federal, state, and local incentive funding specifically to incentivize the switch from combustion to heat pump technologies. South Coast AQMD is also developing the Go Zero Incentive Program to help lower the cost and to provide centralized information for the availability of incentive and financing opportunities offered by other agencies and organizations.