Proposed Amended Rule 1111

NOx Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces

Public Workshop and CEQA Scoping Meeting

October 19, 2017

SCAQMD Headquarters
Diamond Bar, California

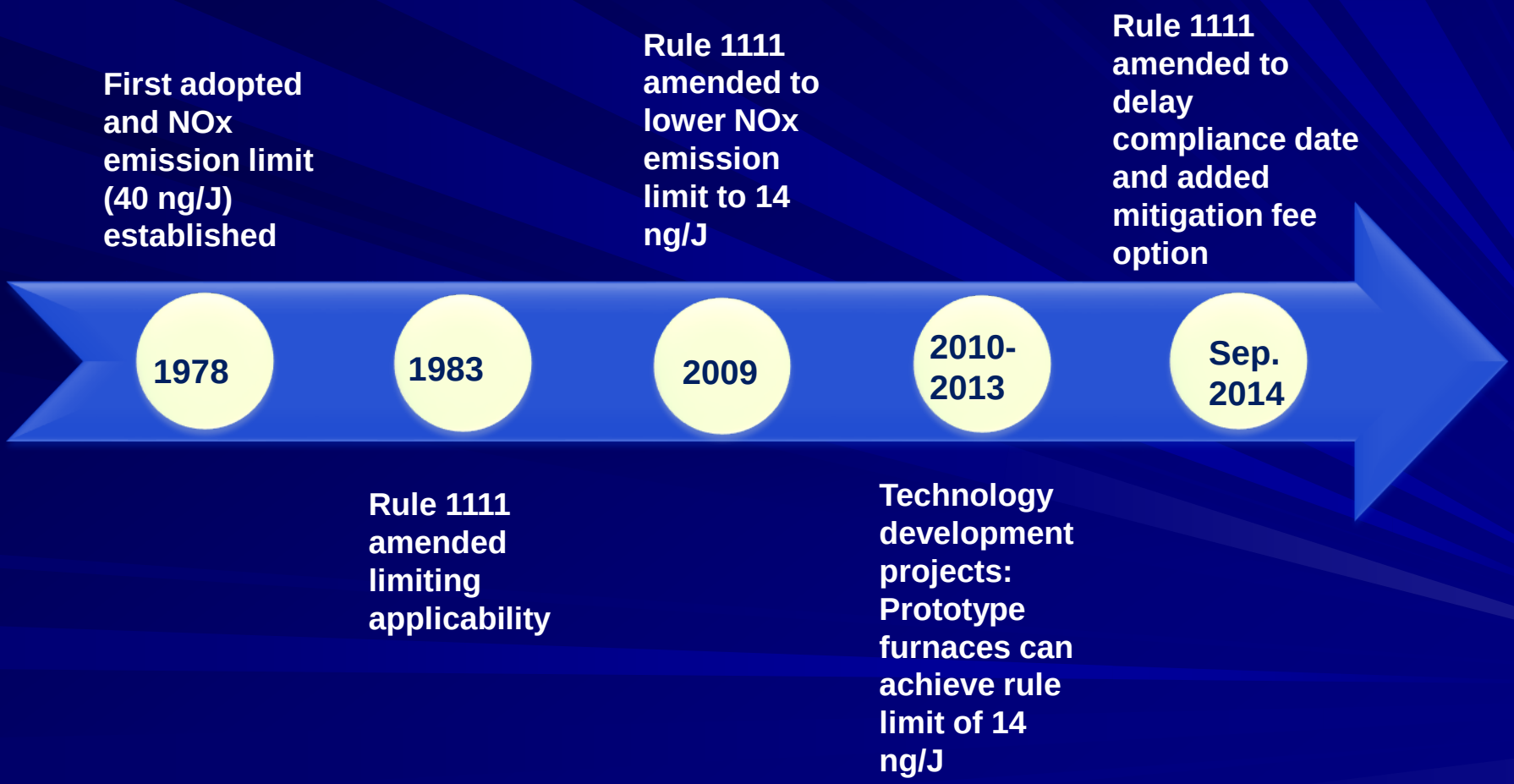
Agenda

- Rule 1111 background
- Meetings with manufacturers
- Implementation status
- Rule development process
- Staff's analysis and proposal for PAR 1111
- California Environmental Quality Act (CEQA)
- Future activities and schedules

Rule 1111 Background

- Applies to residential and commercial natural gas-fired fan-type central furnaces
- Regulates manufacturers, distributors, sellers and installers of these units
- NOx emission reductions needed to achieve compliance with the ambient air quality standards

Rule 1111 Background



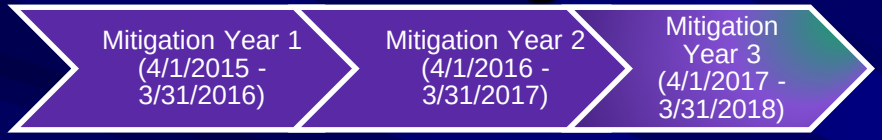
Current Rule 1111

- 14 ng/J Compliance limit
- Compliance dates and mitigation fee schedules are as below

	Condensing (High Efficiency)	Non-condensing (Standard)	Weatherized	Mobile Home
Compliance Date	April 1, 2015	October 1, 2015	October 1, 2016	October 1, 2018
Compliance Date Extension with Mitigation Fee	April 1, 2018	October 1, 2018	October 1, 2019	October 1, 2021
Mitigation Fee (per unit)	$200	$150	$150	$150

Current Rule 1111 Alternative Compliance Period (3 years Mitigation Fee)

- Condensing furnace



- Standard furnace

- Weatherized furnace

- Mobile house furnace

Meetings with Manufacturers

- Survey/meetings with manufacturers in May – July, 2016 for technology development status
  - In response to stakeholders' request in April 2016 to amend Rule 1111 stating that compliance cannot be achieved
- Continuous individual meetings with stakeholders (8 OEMs, 2 burner manufacturers, and others) since March 2017
- Discussion including
  - product development and implementation status, mitigation fee, NOx limit, and stakeholders' rule recommendations

Implementation Status

- At least three original equipment manufacturers (OEMs) have demonstrated compliance with Rule 1111 NOx limits either for standard or high efficiency furnaces with field tests underway
- NOx certifications have been issued to three high efficiency models in three sizes (40, 60, and 80 kbtu/hr), a standard furnace model in one size (70 kbtu/hr), and four standard furnace models in three sizes (60, 80, and 100 kbtu/hr)
- Compliant furnaces have not yet been introduced into the market to meet rule limit and all OEMs are paying mitigation fee to stay compliant; however, commercialization schedules have been proposed by some OEMs

Rule Development Process

- Two Task Force meetings (April 27, 2017 and May 25, 2017)
  - Product development and implementation status, mitigation fee, NOx limit, and stakeholders' rule recommendations
- Stationary Source Committee (SSC) meeting (June 16, 2017)
  - Status update and staff's initial recommendations for Rule 1111 amendment
- Two Working Group meetings (July 2, 2017 and September 21, 2017)
  - Staff's analysis and recommendations for Rule 1111 amendment

Mitigation Fee Option Extension

- Depending on furnace type, the mitigation fee option is currently scheduled to end and the NOx limit of 14 ng/J will phase in over the period from April 1, 2018 to October 1, 2021
- OEMs have been more focused on standard unit development, and then on high efficiency units, weatherized units, and mobile home units
- To date, three OEMs have been issued NOx certification, covering standard units with ratings of 60, 70, 80, and 100 kbtu/hr, and high efficiency units with ratings of 40, 60, and 80 kbtu/hr
- Although some OEMs have developed low NOx products, they are requesting more heating seasons for field testing to ensure safety and reliability

Current Mitigation Fee

- The current mitigation fee is $200 for each condensing furnace and $150 for each non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD
- All OEMs have been paying the mitigation fee
- Since there are no compliant products available, fee did not act to even out costs nor motivate product commercialization

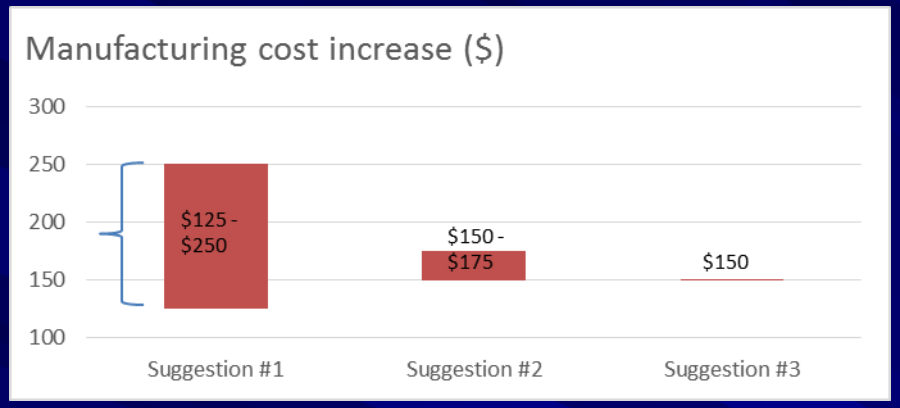
Why do we need a mitigation fee increase and a rebate program?

- Technology development is maturing, and some OEMs are now able to project commercialization timeline and estimated pricing for their compliant product
- Consequently, the mitigation fee may be more effective, especially when the fee is increased for non-compliant products concurrent with compliant product availability
- A rebate program for compliant products could further offset costs for consumer

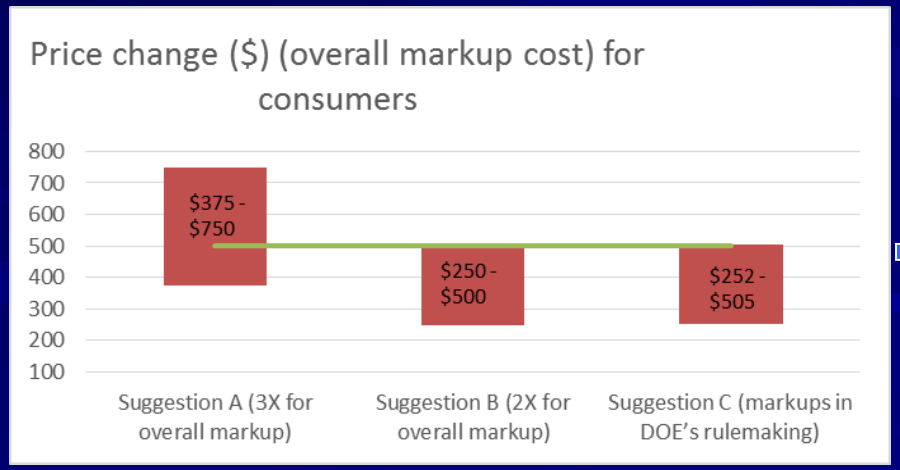
Analysis for Mitigation Fee Increase and Rebate - Outline

- Information Utilized:
  - Cost information provided by OEMs
- Analysis Method:
  - An economic model (Partial Equilibrium Model)
- Goal:
  - To determine the balanced values for mitigation fee increase and rebate which will work in tandem to help motivate commercialization of compliant units

Cost information Provided by OEMs



For price change analysis: manufacturing cost increase of $125 – $250



For subsequent modeling analysis: $500 price change for customers

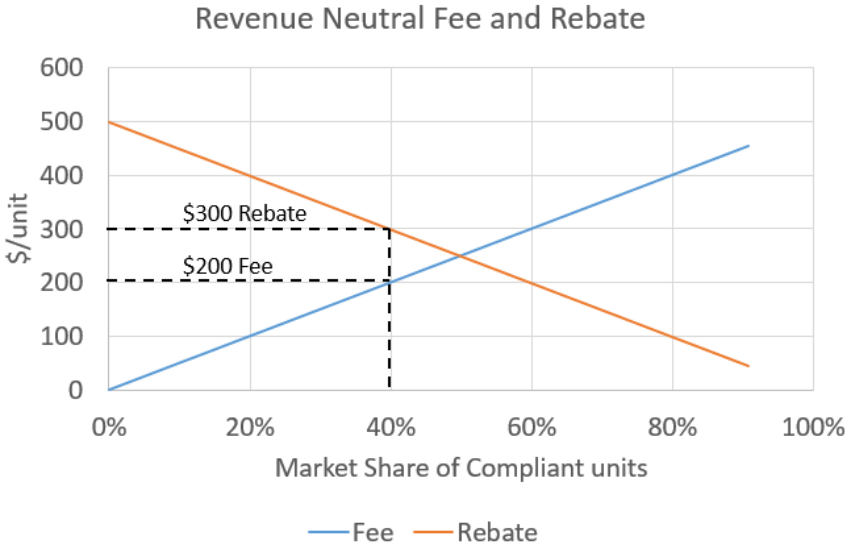
Economic Modeling

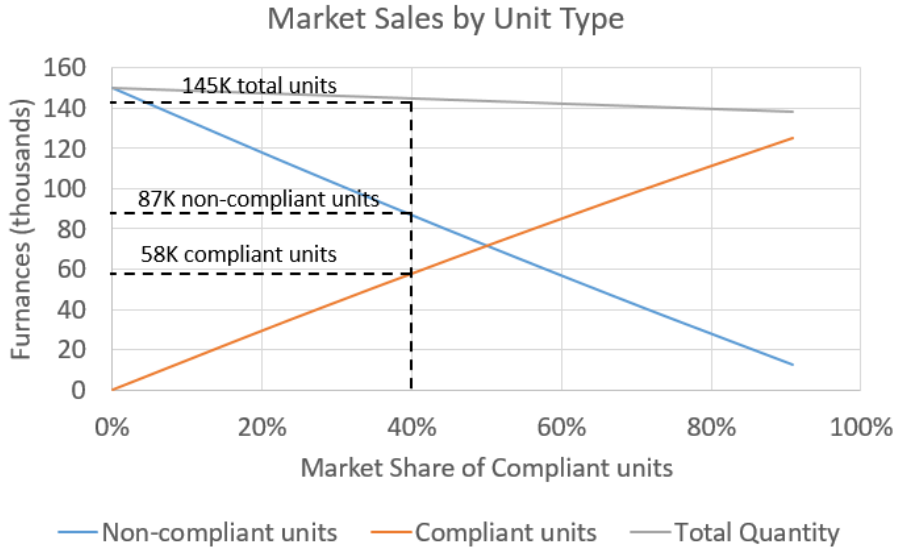
- To help inform the setting of the mitigation fee and rebate amounts, staff developed a basic economic model called a Partial Equilibrium model
- This type of model can consider a market with producers, consumers, and policy requirements and estimate an overall market price and sales quantity based on empirical data and economic theory*
  - In this case consumers would be any end users, and producers would be the manufacturers
  - The model is used to find an optimal, revenue-neutral, fee and rebate combination, to induce a given market share of compliant units**
- The model was developed based on the South Coast region for an annual market of 150,000 furnaces with an average price of $1,250 per non-compliant unit and $1,750 per compliant unit

*Technical model details will be provided in the Preliminary Draft Staff Report.
**Administrative costs are not evaluated here, but can be incorporated in the model as more details become known.

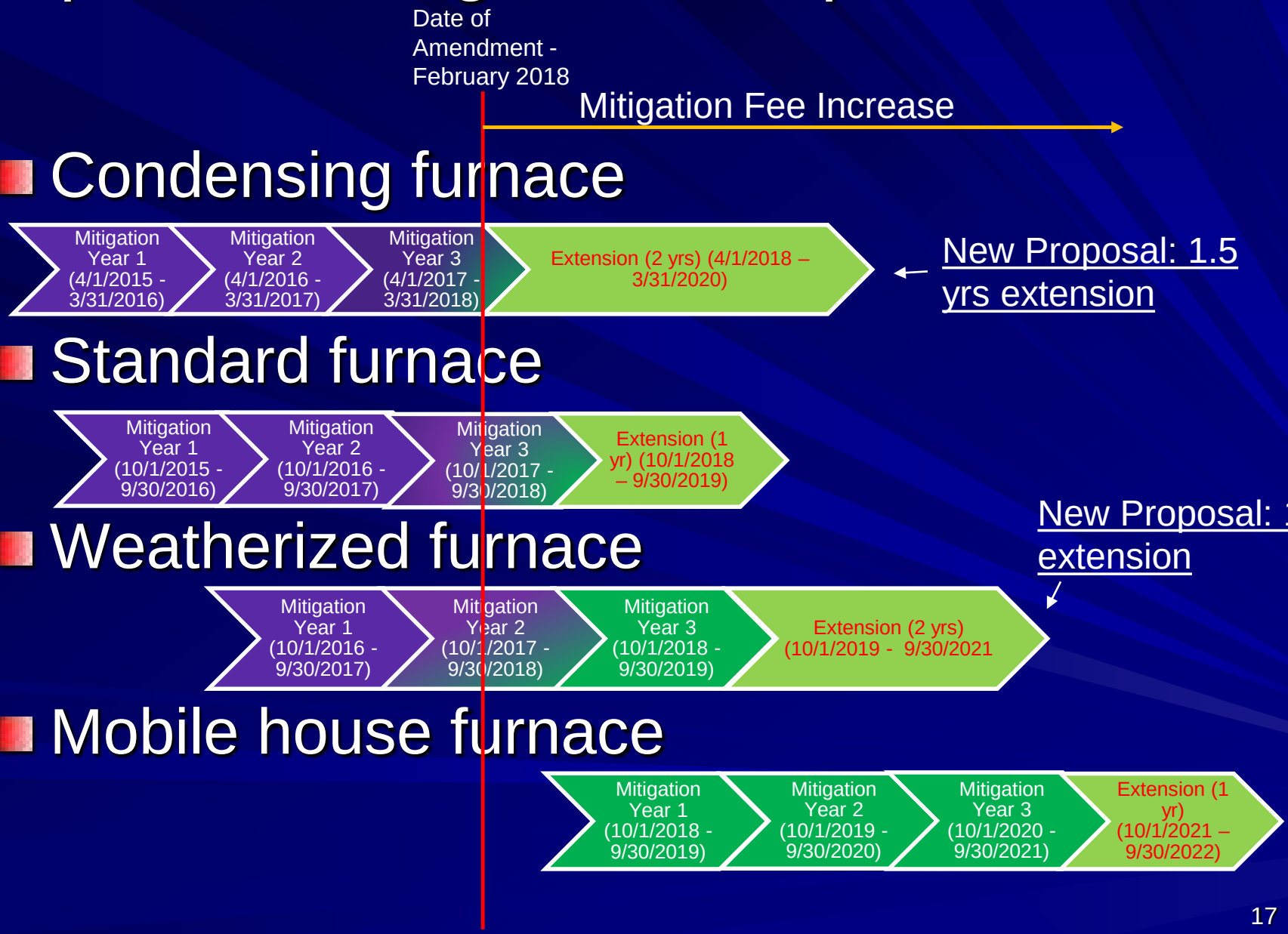
Model Results

- A proposed fee increase of $200 - $300/unit and rebate of $300/unit would achieve a 40% market share of compliant units, with total sales of 145,000 units. This would correspond to a rebate program size of about $17 million.





Proposed Changes to Compliance Dates



Mitigation Fee and Rebate Program

- A raised mitigation fee of $400 - $500 (new proposal: $400) to offset the cost difference for compliant and non-compliant units
- A rebate amount of $300 to consumers (new proposal: $500 to the first 6,000 consumers and $250 to the rest), for purchasing and installing a compliant furnace prior to the applicable rebate end date below (six calendar months beyond mitigation fee end date)

Equipment Category	Rebate End Date
Condensing Furnace	October 1, 2020
Non-condensing Furnace	April 1, 2019
Weatherized Furnace	April 1, 2021
Mobile Home Furnace	April 1, 2022

Summary of Staff's Proposal for PAR 1111

- Maintain the 14 ng/J NOx limit but with the following mitigation fee extension:

(Previous Proposal)

- Condensing (High Efficiency): 2 years (April 2020)
- Non-condensing (Standard): 1 year (October 2019)
- Weatherized: 2 years (October 2021)
- Mobile Home: 1 year (October 2022)

(New Proposal)

- Condensing (High Efficiency): 1.5 years (October 2019)
- Non-condensing (Standard): 1 year (October 2019)
- Weatherized: 1 year (October 2020)
- Mobile Home: 1 year (October 2022)

Summary of Staff's Proposal for PAR 1111 - continued

- Increase the mitigation fee to $400 - $500 per unit (new proposal: $400) for all types of furnaces effective from the date of amendment
- Implement a rebate program
  - Issue $300 rebate to consumer (new proposal: $500 to the first 6,000 consumers and $250 to the rest) of purchased and installed compliant furnace by rebate end dates (six calendar months beyond the mitigation end date)
  - Establish an efficient rebate administration procedure
- Other compliance
  - Prevent rule circumvention by propane furnaces

Stakeholder Comments

- The safety and reliability issues prevent commercialization
  - For gas furnaces with new technology, OEMs conduct extensive internal lab testing, as well as field testing, to ensure safety and reliability; OEMs with compliant products are confident with the safety and reliability of their products; One of the OEMs has indicated that they will have a compliant product commercially available prior to the 2017 winter season
- For mitigation fee increase, the potential date of amendment (Public Hearing on 2/2/2018) is near the end of mitigation fee option for condensing units; OEMs need assurance that the extension will happen to ensure supply especially for condensing units
  - Staff may consider to issue a memorandum to OEMs to ensure the extension of consenting furnaces
- Mobile home units are considered a small market and staff should consider not increasing their mitigation fee
  - Although this product is a small market there still must be mechanisms in place to motivate installation of compliant units

Stakeholder Comments(cont'd)

- It is not feasible for OEMs to administrate the rebate program through their supply chains, as it is difficult for OEMs to track or collect sales receipts and contractors/installers are reluctant to share price and customer information (marketing information)
  - Staff is seeking proposals from stakeholder for rebate program administration
- Will the rebate be available prior to the Rule 1111 amendment
  - The rebate could be made available, however, it is unlikely due to the time constraint to obtain proper funding

Stakeholder Comments(cont'd)

- The SCAQMD should help in promoting compliant products and preventing breakage of the rebate application
  - Staff is under discussion with organizations that promote compliant products and identify ways to prevent rebate breakage
- Base on the previous proposal there is disadvantage for those OEMs who have focused on development of condensing units
  - Staff agrees and has a new proposal that should resolve this issue

California Environmental Quality Act (CEQA)

- California State Law adopted 1970
- Purpose *[CEQA Guidelines Section 15002(a)]*
  - Inform governmental decision-makers and public about potential significant effects of projects
  - Identify ways to avoid or reduce adverse impacts
  - Require feasible alternatives and mitigation measures to prevent significant environmental damage
  - Disclose to the public why a project was approved
- Applies to projects undertaken by a Public Agency such as SCAQMD adoption of rules *[CEQA Guidelines Section 15002(b)]*
  - Required to comply with CEQA when approving a project *[CEQA Guidelines Section 15002(d)]*
  - Required for discretionary approvals *[CEQA Guidelines Section 15002(i)]*
- Lead Agency = SCAQMD
  - Oversight and legal responsibility for appropriate CEQA document preparation, circulation, response to comments, and approval/certification

CEQA (continued)

- PAR 1111 is a project subject to CEQA
- PAR 1111 contains changes that would further extend the compliance dates in the alternative compliance option for the following equipment categories:
  - Condensing Furnace from April 1, 2018, to April 1, 2020;
  - Non-Condensing Furnace from October 1, 2018, to October 1, 2019;
  - Weatherized Furnace, from October 1, 2019 to October 1, 2021; and
  - Mobile Home Furnace from October 1, 2021, to October 1, 2022
- PAR 1111 is expected to result in foregone NOx emission reductions of 0.07 to 0.09 tons per day in 2018, 0.31 to 0.38 tons per day in 2023, and 0.31 to 0.38 tons per day in 2031, all of which exceed the SCAQMD's regional air quality CEQA significance threshold

CEQA (continued)

- Decision to prepare Subsequent Environmental Assessment (SEA) to the September 2014 Final EA
  - CEQA Guidelines Section 15162 (b) allows preparation of a SEA based on project changes or new information available after adoption of the September 2014 Final EA
  - New potentially significant effects for air quality are expected but were not analyzed in the September 2014 Final EA
  - Analysis of alternatives and mitigation measures are required
  - Analysis will focus on significant air quality impacts
  - A Draft SEA will be released for 45-day public review and comment period in November 2017
- Final SEA
  - Will include responses to Draft SEA comment letters and any necessary modifications to Draft SEA
  - Governing Board must certify Final SEA

Future Activities and Schedules

- Continue individual stakeholder meetings
- Written comments on this rule should be submitted by November 2, 2017
- Working Group meetings – November, 2017; January, 2018
- Stationary Source Committee meeting – November 17, 2017
- Public Hearing – February 2, 2018

Staff Contacts and Rulemaking Materials

- Rule Development
  - Yanrong Zhu, yzhu1@aqmd.gov, (909) 396-3289
  - Gary Quinn, gquinn@aqmd.gov, (909) 396-3121
- CEQA
  - Barbara Radlein, bradlein@aqmd.gov, (909)396-2716
  - Ryan Bañuelos, rbanuelos@aqmd.gov, (909) 396-3479
- Socioeconomic Assessment
  - Shah Dabirian, sdabirian@aqmd.gov, (909)396-3076
  - Anthony Oliver, aoliver@aqmd.gov, (909) 396-2851

- PAR 1111 Materials available online:
  - http://www.aqmd.gov/home/regulations/rules/proposed-rules