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# PROPOSED AMENDED RULE 1111 PUBLIC WORKSHOP

SOUTH COAST AQMD  
JULY 15, 2020

**Zoom Meeting:** <https://scaqmd.zoom.us/j/97727225602>  
**Meeting ID:** 977 2722 5602  
**Conference Call:** 1 (669) 900-6833

# RULE 1111 BACKGROUND

Rule applies to manufacturers, distributors, sellers, and installers of residential and commercial natural gas-fired fan-type central furnaces

Lowered limit to  
**14 ng/J NOx** with 2014  
compliance date

**Final compliance date** for  
**14 ng/J NOx** condensing and  
non-condensing furnaces

**Final compliance date** for  
**14 ng/J NOx** weatherized furnaces and  
installations at high altitude ( $\geq 4,200$  ft)

December  
1978

November  
2009

September  
2014

October  
2019

December  
2019

October  
2020

Rule first adopted  
established **40 ng/J NOx**  
emission limit

Delayed compliance date for  
**14 ng/J NOx** furnaces and  
added mitigation fee

Delayed compliance date for  
furnaces installations at high  
altitude ( $\geq 4,200$  ft)

## RULE 1111 COMPLIANCE DEADLINES

Condensing and Non-Condensing  
Furnaces

October 1, 2019



Weatherized Furnaces

October 1, 2020

High Altitude Installations  
( $\geq 4,200$  feet)

October 1, 2020

Upcoming  
Deadlines

Mobile Home Furnaces

October 1, 2021

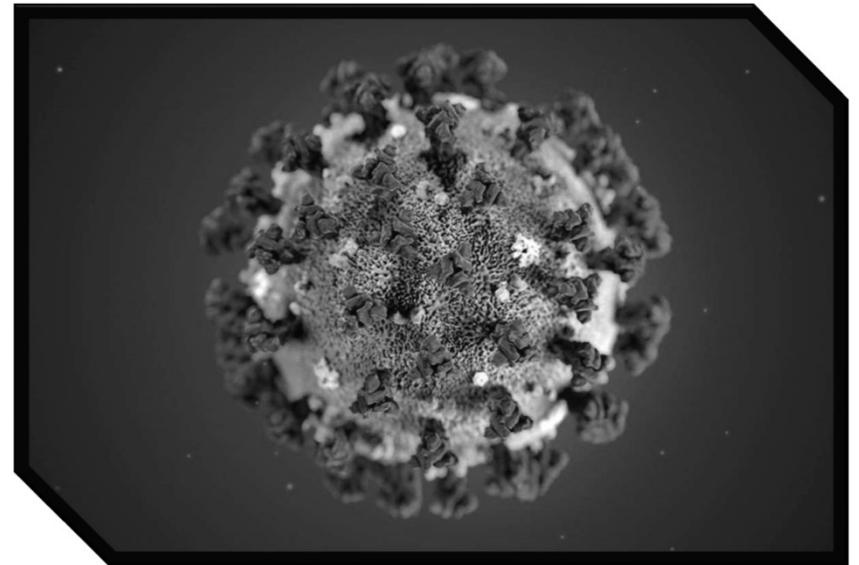
# CURRENT RULEMAKING

## Background

- ❑ As part of the December 6, 2019 amendment for Rule 1111, Staff committed to monitor the progress of weatherized and high altitude furnace development
  - Staff has been in frequent communication with all furnace manufacturers
  - Multiple manufacturers reported delays in production and development due to impacts of COVID-19
- ❑ During the June 19, 2020 Stationary Source Committee Meeting, Board Members requested staff to assess the potential of dual fuel heating systems equipped with non-compliant 40 ng/J NO<sub>x</sub> furnaces
- ❑ Additional clarification needed to prevent 40 ng/J NO<sub>x</sub> condensing and non-condensing units to be sold and installed as mobile home units

# IMPACTS OF COVID-19

- ❑ Multiple furnace manufacturers have reported manufacturing delays or interruptions in the supply chain as a result of COVID-19
- ❑ Other COVID-19 effects
  - Plant closures to incorporate social distancing in operations – generally 2 weeks
  - Lower production rates with social distancing
  - High rate of absenteeism
  - Need for plant-wide downtime when COVID-case for deep cleaning and quarantines
  - Company travel restrictions for worker safety
  - Changes in business decisions for commercializing compliant furnaces



# CURRENT RULEMAKING

## Purpose

- ❑ To provide clarification on applicability of mobile home units by addition of definitions on MOBILE HOME and MOBILE HOME FURNACE
- ❑ To develop proposed amendments to Rule 1111 - Reduction of NO<sub>x</sub> Emissions from Natural Gas-Fired Fan-Type Central Furnaces in order to:
  - Allow additional time for furnace manufacturers to develop:
    - Weatherized furnaces that comply with 14 ng/J NO<sub>x</sub>
    - High altitude kits and guidance for compliant 14 ng/J NO<sub>x</sub> units
  - Provide an alternative compliance option for communities in high altitude areas



# STATUS OF COMPLIANT UNIT DEVELOPMENT



## WEATHERIZED FURNACES SEPARATION OF EQUIPMENT CATEGORY

- ❑ Mitigation fee period for weatherized furnaces ends September 30, 2020
- ❑ For most manufacturers, development of commercial and residential weatherized furnaces are separate from one another
  - Rule 1111 does not differentiate between residential and commercial weatherized furnaces
- ❑ Staff has reached out to all furnace manufacturers and discussed potential options to bifurcate the weatherized furnace category
- ❑ Staff discussed two categories based on single and three phase weatherized furnaces
  - Some manufacturers supported this split based on single and three phase
  - Other manufacturers felt it was not representative of their manufacturing and distribution for residential versus commercial
- ❑ **Staff is recommending to not separate implementation of weatherized furnaces**

## COMMERCIALIZATION STATUS OF WEATHERIZED FURNACES AND RECOMMENDATIONS

❑ Commercialization of weatherized furnaces as of June 2020:

Weatherized Furnaces	3 out of 7 Manufacturers	2 out of 7 Manufacturers	2 out of 7 Manufacturers
	Expected to have market coverage by October deadline	Expected to have market coverage <u>after</u> October deadline	Development Suspended or Pending Update

### Recommendation:

- ❑ Extend mitigation fee period for weatherized furnaces to September 30, 2021
  - Staff extended the mitigation fee from April to September 30, 2021 to allow manufactures to sell existing product for an additional six months – serves as a sell through provision
- ❑ Add consumer rebate of \$500 per unit for 14 ng/J NOx weatherized units that will expire on September 30, 2021 to incentivize commercialization of 14 ng/J furnaces
  - Staff is seeking input on rebate amount

## PROPOSED AMENDMENTS FOR WEATHERIZED FURNACES

Furnace Category		Phase 2 Mitigation Fee			PAR I I I I
Size Range (BTU/hr)	Furnace Category	Start Date	Fee Amount (\$/Unit)	Existing End Date	Amended End Date
≤60,000	Weatherized	April 1, 2019	\$300	<del>September 30, 2020</del>	September 30, 2021
>60,000 and ≤90,000	Weatherized	April 1, 2019	\$350	<del>September 30, 2020</del>	September 30, 2021
>90,000	Weatherized	April 1, 2019	\$400	<del>September 30, 2020</del>	September 30, 2021

- Extend Phase 2 Mitigation Fee end date one year
- No change to the mitigation fee amount

## HIGH ALTITUDE FURNACES DEVELOPMENT STATUS AND RECOMMENDATION

- ❑ High altitude condensing and non-condensing furnaces
  - Two manufacturers currently have units certified for installation above 7,000 feet
  - One manufacturer is on track to certifying units for installation of at least 7,000 feet by October 1, 2020
- ❑ High altitude weatherized furnaces
  - One manufacturer expected to have weatherized furnaces for installations above 7,000 feet by October 1, 2020

### **Recommendations:**

- ❑ Extend end date of high altitude exemption from October 1, 2020 to until September 30, 2021 for condensing and non-condensing furnaces
- ❑ Compliance date for weatherized furnaces is being extended to September 30, 2021
- ❑ Add consumer rebate of \$500 per unit for any compliant 14 ng/J NO<sub>x</sub> units installed in high altitude areas (above 4,200 feet) that will expire on September 30, 2021

## PROPOSED AMENDMENTS FOR EXEMPTIONS FOR FURNACES INSTALLED ABOVE 4,200 FEET

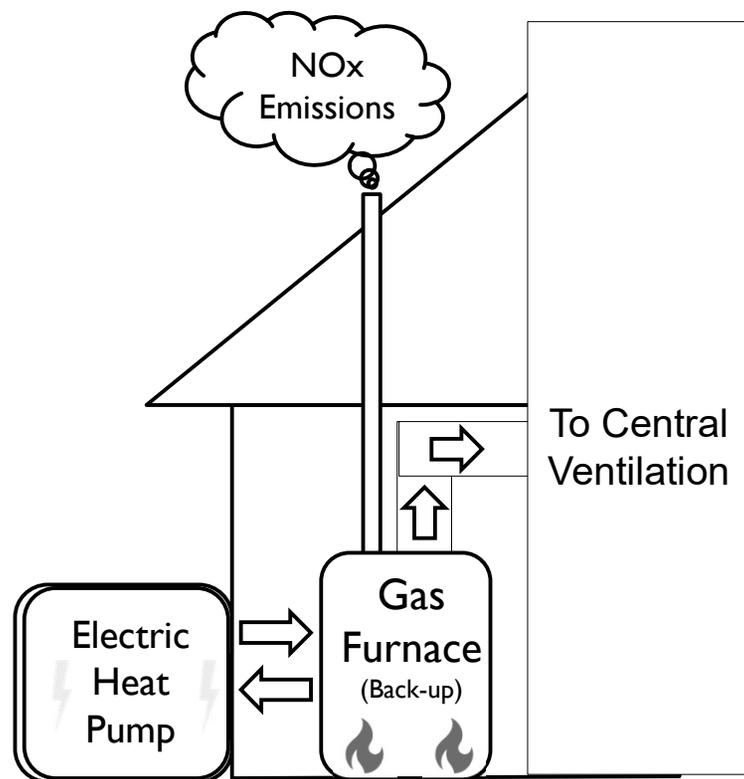
*(g)(5) Condensing and non-condensing natural gas furnaces installed at elevations greater than or equal to 4,200 feet above sea level are exempt from paragraph (c)(4) until **September 30, 2021**.*

- Extend exemption for high altitude installations of condensing and non-condensing furnaces from October 1, 2020 to September 30, 2021
- Weatherized furnaces are included in mitigation fee end date extension

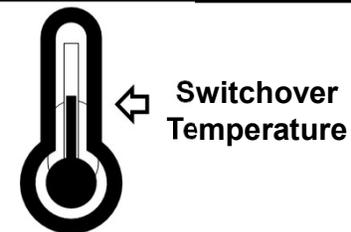
## DUAL FUEL HEATING SYSTEMS OVERVIEW

- Dual fuel heating system is a natural gas furnace paired with an electric heat pump
- Electric heat pump replaces air conditioning unit

Primary heating is provided by the electric heat pump



- Gas-fired furnace is used as auxiliary heating when temperatures are very low
- Furnace operation is determined by an adjustable switchover temperature



Higher the switchover set temperature, more often furnace operates and more emissions

## SUMMARY OF DISCUSSION ON DUAL FUEL SYSTEMS

- ❑ Staff recognizes that dual fuel systems have potential to generate lower NO<sub>x</sub> than a standalone 14 ng/J NO<sub>x</sub> furnace, if designed properly
  - Staff continues to work with stakeholders to explore potential options to eliminate enforcement concerns
  - Manufacturers have worked over the past decade to commercialize 14 ng/J NO<sub>x</sub> furnaces
  - Staff acknowledges that weatherized furnaces may not have the same enforcement challenges as split systems
- ❑ Staff has reached out to furnace OEMs for equipment costs relating to dual fuel split systems, standalone furnaces, and heat pump heating systems that are utilizing a compliant 14 ng/J NO<sub>x</sub> furnace and noncompliant 40 ng/J NO<sub>x</sub> furnace

### **Recommendations:**

- ❑ To allow dual fuel systems with noncompliant 40 ng/J NO<sub>x</sub> furnaces for installation at elevations above 4,200 feet when sold in District approved configuration with recordkeeping from manufacturers, distributors and installers until September 30, 2022
- ❑ Add consumer rebate of \$500 per system for any dual fuel systems with compliant 14 ng/J NO<sub>x</sub> units
  - Staff is seeking input on rebate amount

## PROPOSED AMENDMENTS FOR DUAL FUEL FURNACES INSTALLED ABOVE 4,200 FEET

- ❑ Installations of dual fuel systems equipped with 40 ng/J NO<sub>x</sub> furnaces located at elevations above 4,200 feet provided that system is installed with:
  - Communicating technology preventing operation without heat pump installed
  - Nonadjustable switchover temperature with external temperature sensor
    - Switchover temperature setting to be locked at the point of manufacture without the need for initial setup during installation
- ❑ Manufacturers, distributors, and installers maintain records of units sold
- ❑ Systems intended for sale under provision must follow applicable labeling requirements:
  - **"This furnace must be installed only in dual fuel configuration with an electric heat pump. Installation of this furnace without a heat pump in dual fuel configuration is a violation of South Coast AQMD Rule 1111."**
- ❑ Staff is seeking input on any further conditions for dual fuel systems with noncompliant 40 ng/J NO<sub>x</sub> furnaces

## SUMMARY OF RECOMMENDATIONS

Equipment Category	Implementation Date	Dual Fuel with 40 ng/J NOx Furnace	Consumer Rebate
<b>Condensing and Non-condensing Furnaces</b>	October 1, 2019	<ul style="list-style-type: none"> <li>No</li> </ul>	Rebate for dual fuel with condensing or non-condensing 14 ng/J furnace <b>Amount: \$500/unit*</b>
<b>Weatherized Furnaces</b>	Extend mitigation fee period from September 30, 2020 to September 30, 2021	<ul style="list-style-type: none"> <li>Yes, up to September 30, 2021</li> <li>Staff will reassess use after September 30, 2021</li> </ul>	Rebate for weatherized 14 ng/J furnaces until September 30, 2021 <b>Amount: \$500/unit*</b>
<b>High Altitude Furnaces</b>	Extend compliance date from October 1, 2020 to September 30, 2021	<ul style="list-style-type: none"> <li>Yes**, up to September 30, 2022</li> </ul>	Rebate for installation of 14 ng/J furnaces above 4,200 feet until September 30, 2021 <b>Amount: \$500/unit</b>

\* Staff is considering a higher rebate

\*\* Provided that furnace manufacturers implement measures to ensure proper operation.

## OTHER PROPOSED AMENDMENTS

- ❑ Added definitions for MOBILE HOME and MOBILE HOME FURNACE to provide clarity on applicability of existing rule limit and mitigation fee schedule
- ❑ Emission limit and mitigation fee schedule for MOBILE HOME FURNACE applies to furnaces specifically designed for MOBILE HOME applications

- ***MOBILE HOME*** means a prefabricated structure on a permanently attached chassis.
- ***MOBILE HOME FURNACE*** means a furnace designed specifically and solely for installation to heat a mobile home.

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## NEXT STEPS

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|--|-------------------|
| <input type="checkbox"/> End of Public Comment Period        | July 24, 2020     |
| <input type="checkbox"/> Stationary Source Committee Meeting | August 21, 2020   |
| <input type="checkbox"/> Public Hearing                      | September 4, 2020 |

## CONTACTS

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