RULE 1111
IMPLEMENTATION UPDATE

WORKING GROUP MEETING #1
APRIL 14, 2020 10 AM (PST)
Zoom meeting: https://scaqmd.zoom.us/j/96380099376
Meeting ID: 963 8009 9376
Conference Call: (669) 900-6833

RULE 1111 BACKGROUND

- Adopted in December 1978 and established a NOx limit of 40 ng/J
- Applies to manufacturers, distributors, sellers, and installers of residential and commercial natural gas furnaces
- NOx limit was lowered to 14 ng/J in November 2009
- Extended mitigation fee deadlines for all categories except furnaces for mobile homes

<table>
<thead>
<tr>
<th>Category</th>
<th>Final Compliance Date (14 ng/J NOx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condensing/Non-Condensing</td>
<td>October 1, 2019</td>
</tr>
<tr>
<td>High-Altitude² Condensing/Non-Condensing</td>
<td>October 1, 2021</td>
</tr>
<tr>
<td>Weatherized</td>
<td>October 1, 2021</td>
</tr>
<tr>
<td>Mobile Home</td>
<td>October 1, 2021</td>
</tr>
</tbody>
</table>

² 4,200 feet above sea level or higher
RULE 1111 BACKGROUND – COMPLIANCE DATE EXTENSION

<table>
<thead>
<tr>
<th>Amendments</th>
<th>November 2009</th>
<th>September 2014</th>
<th>March 2018</th>
<th>December 2019</th>
<th>September 2020</th>
<th>Final Compliance Dates</th>
</tr>
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<tbody>
<tr>
<td>Condensing/ Non-Condensing</td>
<td>October 1, 2014 /October 1, 2015</td>
<td>Delayed Until 2018</td>
<td>Delayed Until 2019</td>
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<td>October 1, 2019</td>
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<tr>
<td>High-Altitude¹ Condensing/ Non-Condensing</td>
<td>–</td>
<td>–</td>
<td>Delayed Until 2020</td>
<td>Delayed Until 2021</td>
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<td>Delayed Until 2019</td>
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<td>–</td>
<td>Delayed Until 2021</td>
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<tr>
<td>Mobile Home</td>
<td>October 1, 2018</td>
<td>Delayed Until 2021</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>October 1, 2021</td>
</tr>
</tbody>
</table>

¹ 4,200 feet above sea level or higher

SUMMARY OF SEPTEMBER 2020 AMENDMENT AND RESOLUTION

September 4, 2020 amendment to Rule 1111

- Provided second year exemption to meet 14 ng/J NOx limit for condensing and noncondensing furnaces at higher elevations; and
- Provided one year extension of mitigation fee period of weatherized furnaces

Board Resolution directed staff to report to Stationary Source Committee no later than May 21, 2021 on:

- Progress on implementation of the Clean Air Furnace Rebate Program
- Development of high-altitude furnaces and mobile home furnaces; and
- Feasibility of weatherized dual fuel systems with a non-compliant 40 ng/J furnaces for the Basin
AREAS OF DISCUSSION

- **Rebate Program**
  - Progress of Clean Air Furnace Rebate Program

- **High-Altitude**
  - Availability of high-altitude furnaces for the October 1, 2021 compliance date

- **Weatherized Furnaces**
  - Availability of weatherized furnaces (package units) for the October 1, 2021 compliance date

- **Mobile Home Furnaces**
  - Availability of mobile home furnaces for the October 1, 2021 compliance date

- **Dual Fuel Systems**
  - Feasibility of weatherized dual fuel systems with a non-compliant 40 ng/J furnaces

CLEAN AIR FURNACE REBATE PROGRAM

- CLEANair Rebate Program established to help commercialize 14 ng/J furnaces
- South Coast AQMD initiated a contract with EGIA to manage the Clean Air Furnace Rebate Program on May 3, 2018
- Rebate website launched on June 28, 2018 to incentivize installation of:
  - 14 ng/J condensing and non-condensing furnaces
  - Initial funding of $3 million exhausted – over 5,000 rebates
CLEAN AIR FURNACE REBATE PROGRAM

- Additional funding of $3.5 million* approved in September 2020 to incentivize installation of:
  - 14 ng/J weatherized furnaces
  - 14 ng/J furnaces for high-altitude installation
  - Electric heat pumps (central-ducted) that replace Rule 1111 furnaces
  - About $2.2 million funding remaining as of March 26, 2021
    - Incentives provided for 564 heat pumps and six weatherized units

<table>
<thead>
<tr>
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<th>Weatherized</th>
<th>High-altitude</th>
<th>Electric heat pumps</th>
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<tr>
<td>Rebate</td>
<td>$500</td>
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<td>Limit for total</td>
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<td>600 units</td>
<td>2,000 units or when</td>
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<tr>
<td>rebate applications</td>
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<td>no later</td>
<td>funds depleted</td>
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<tr>
<td>than September</td>
<td>than September</td>
<td>than</td>
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<tr>
<td>30, 2021</td>
<td>30, 2021</td>
<td>2021</td>
<td></td>
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* A minimum of 25 percent reserved for installations in disadvantaged and low-income communities as identified under SB535 and AB1550

FURNACE AVAILABILITY FOR HIGH ALTITUDE INSTALLATION

- Exemption for furnaces in high altitude installation ends October 1, 2021
- All manufacturers have made progress in testing non-condensing and condensing furnaces for high altitude installations
  - Four manufacturers have compliant non-condensing furnaces for installation at 7,500-7,800 ft elevation
  - Three manufacturers have compliant condensing furnaces for installation at 7,500-7,800 ft elevation
- Manufacturers have no additional plans for high altitude furnace development
Staff is seeking input from Working Group Meeting regarding:
- Not extending the exemption for high altitude furnace installations

WEATHERIZED FURNACE UPDATE

- Mitigation fee period for weatherized furnaces ends October 1, 2021
- Weatherized furnaces use the same burner configurations as condensing and non-condensing furnaces
  - Rule 1111 certification for weatherized units is based on existing condensing and non-condensing furnaces with no additional testing required
- Commercialization of weatherized units started in fourth quarter of 2020
- By the October 1, 2021 compliance date:
  - All manufacturers informed staff that 14 ng/J weatherized furnaces will be available
  - In addition to basic models, some manufacturers will provide higher efficiency models
  - Two manufacturers will provide weatherized furnaces for installation at elevations up to 5,000 and 7,800 ft

Staff Recommendation:
- No further extension of the mitigation fee period
MOBILE HOME FURNACE UPDATE

- Mitigation period fee for mobile home furnaces ends October 1, 2021
- Four manufacturers of mobile home furnaces
- Development status:
  - None of the manufacturers have developed 14 ng/J mobile home furnace
  - Manufacturers have informed staff that they:
    - Need to develop propane kits for condensing and non-condensing furnaces for mobile home installations (HUD requirement for propane compatibility);
    - Can offer single phase weatherized units for mobile home applications; or
    - Plan to provide electrical heating such as heat pumps as the alternative
  - Manufacturers suggested to align compliance date with the upcoming Department of Energy standards required on January 1, 2023

Staff Recommendation:
- Extend the mitigation fee to September 30, 2023

DUAL FUEL HEATING SYSTEM BACKGROUND

- Dual fuel heating system is a natural gas furnace paired with an electric heat pump
- Primary heating is provided by the electric heat pump
  - Gas-fired furnace is used as auxiliary heating when temperatures are very low
- The furnace operation is determined by adjustable switchover temperature
  - Higher the switchover set temperature, more often the furnace operates and more emissions
DUAL FUEL HEATING SYSTEMS

- All seven manufacturers have dual fuel systems with compliant (14 ng/J NOx) furnaces available
- 14 ng/J NOx dual fuel systems provide more emission reduction than non-compliant 40 ng/J NOx dual fuel systems
- The concerns on regulatory loophole and additional enforcement challenges remain for non-compliant 40 ng/J NOx

Staff Recommendation:
- Support dual fuel systems with 14 ng/J compliant furnaces

SUMMARY AND NEXT STEPS

- Staff is contemplating the following recommendations and seeking input:
  - No further extension to high-altitude exemption;
  - No further extension of weatherized furnace mitigation fee end date;
  - Amend Rule 1111 to extend mitigation fee end date to September 30, 2023 for Mobile home furnaces;
  - Support dual fuel units with a compliant 14 ng/J NOx furnace; and
  - Continue to monitor the implementation of Rule 1111 and CLEANair Furnace Rebate Program
- Provide updates and recommendations to the Stationary Source Committee on May 21, 2021
- Continue to work with stakeholders for the upcoming rulemaking
## CONTACTS

### Proposed Amended Rule 1111

<table>
<thead>
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### General Questions

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<tbody>
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