



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

# Public Workshop on Draft Amendments for Building Appliance Rules 9-4 and 9-6

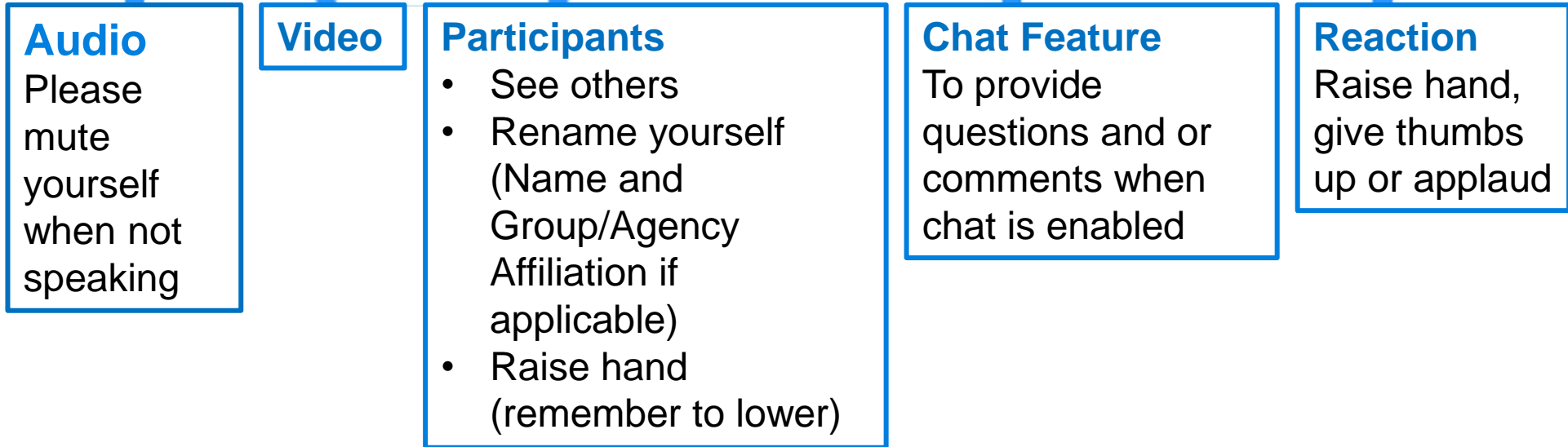
Virtual Public Workshop  
October 7, 2021

# Note: The Air District will be recording this public workshop



## How to Use Video Conferencing

### Black menu bar at top or bottom of screen:



# Technical Assistance



▶ If you need technical assistance, please call or text  
**(802) 559-0821** OR chat **(Tech Support) Julielyn**

# Virtual Participation Principles



- ▶ **One** person speaks at a time.
- ▶ Be **respectful** of one another's opinions.
- ▶ Please **mute** yourself when you're not speaking.
- ▶ **Share video if you like** so we can stay visually connected.
- ▶ Technology happens – please be **flexible and patient**.
- ▶ Remember this is just one meeting in a longer **process**.



## Let's get to know you



**What perspective best represents you tonight?**

**Where are you joining from?**



**Materials:** <https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances>

**Comments By: Nov. 1, 2021**

# Introduction to Jamboard



Tell us where you are joining from!

Create a sticky note with your name/affiliation and drag it to your location!

Other location

**Link to join:**

<https://jamboard.google.com/d/1xR1CV8vbBwcl3QNgcxxkq4f5wGb2jjDKBirnaq8hF5Q/edit?usp=sharing>

# Workshop Agenda



1



**Let's Get to Know You!**

2



**Presentation & Participant Engagement**

3



**Comments and Questions**

4



**Closing and Next Steps**

# Welcome and Opening Remarks



**Veronica Eady**

Senior Deputy Executive Officer of Policy & Equity

Bay Area Air Quality Management District



# Presentation Topics



**1 Background on this Effort**

**2 Draft Changes to Rule 9-4**

**3 Draft Changes to Rule 9-6**

**4 Stakeholder Involvement and Feedback**

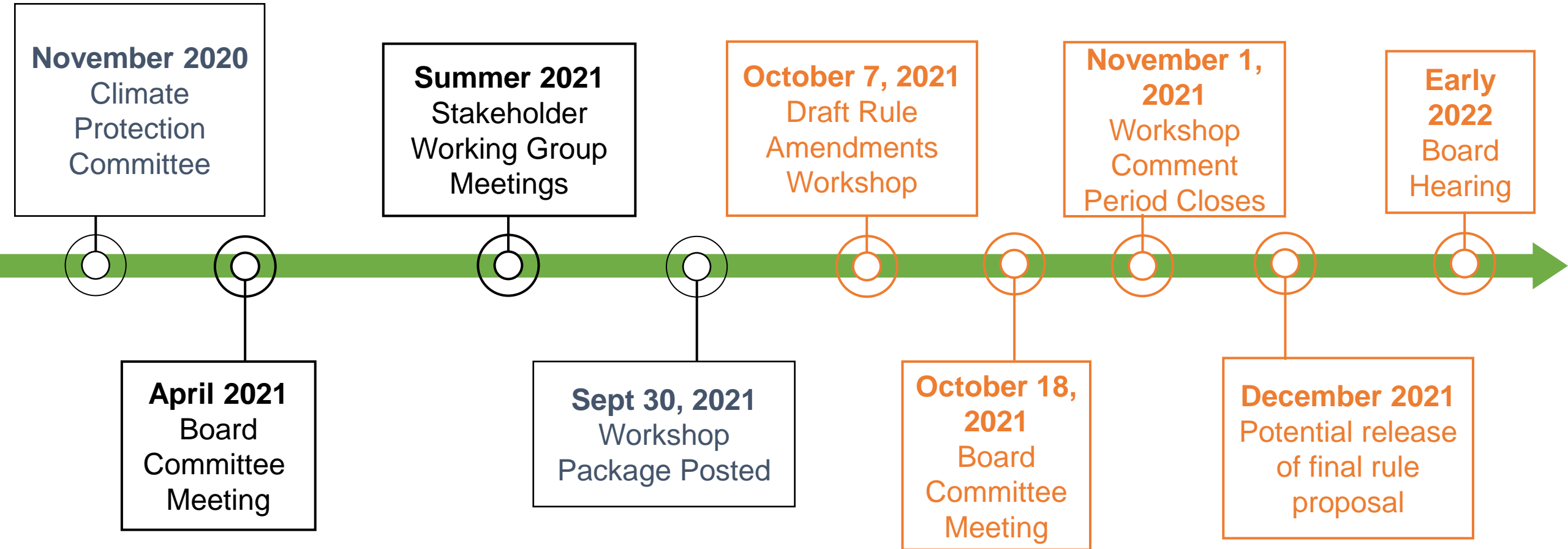
**5 Equity Considerations**

# Background: Rules for Development

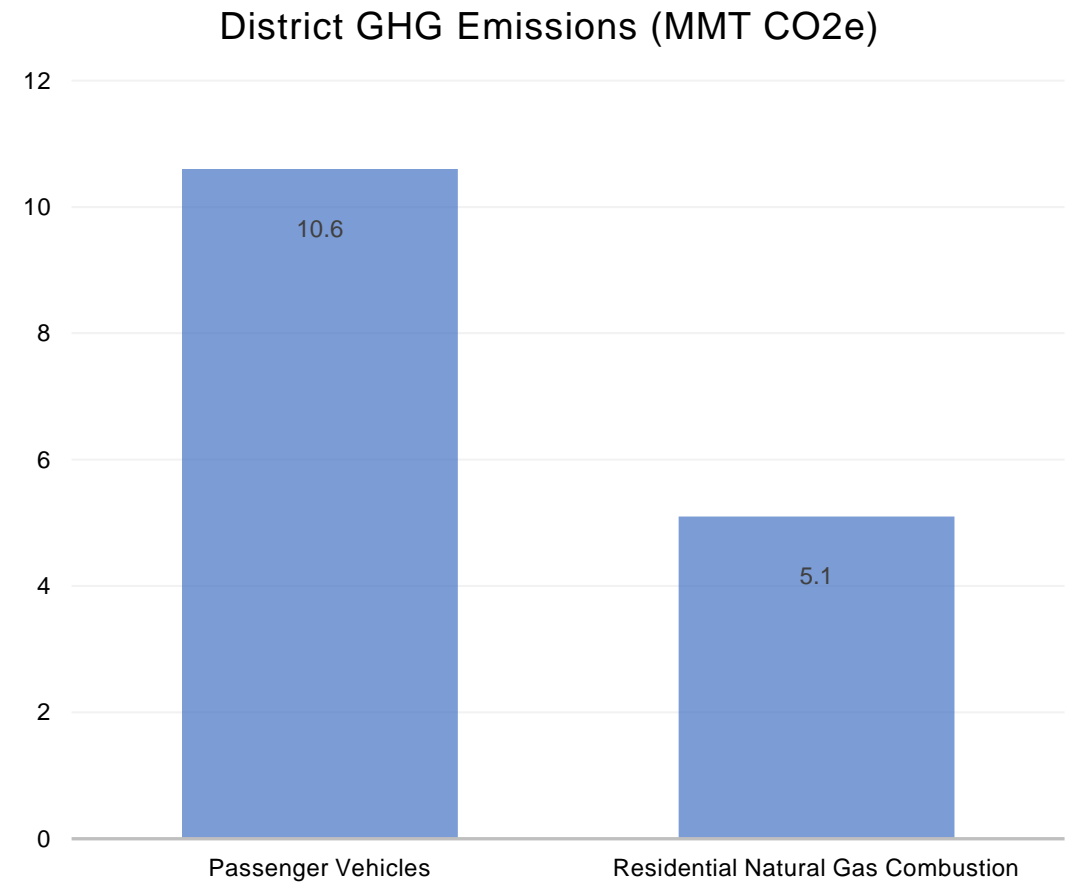
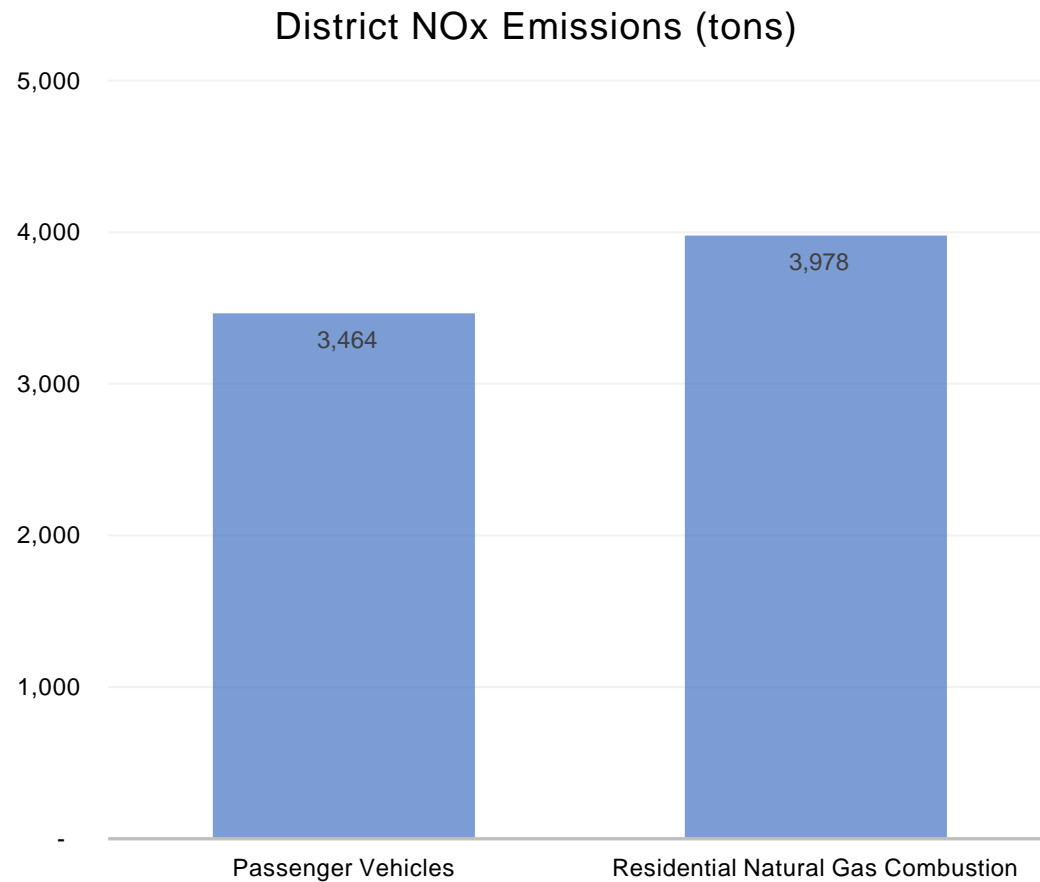


- To address Oxides of Nitrogen (NO<sub>x</sub>) emissions associated with buildings, amend:
  - Regulation 9, Rule 4 (Rule 9-4): Nitrogen Oxides from Fan Type Residential Central Furnaces
  - Regulation 9, Rule 6 (Rule 9-6): Nitrogen Oxides from Natural Gas-Fired Boilers and Water Heaters
- Separate, future effort for Regulation 9, Rule 7 (Rule 9-7): NO<sub>x</sub> from Boilers, Steam Generators, and Process Heaters
  - Different emissions sources
  - Different stakeholders

# Background and Timeline



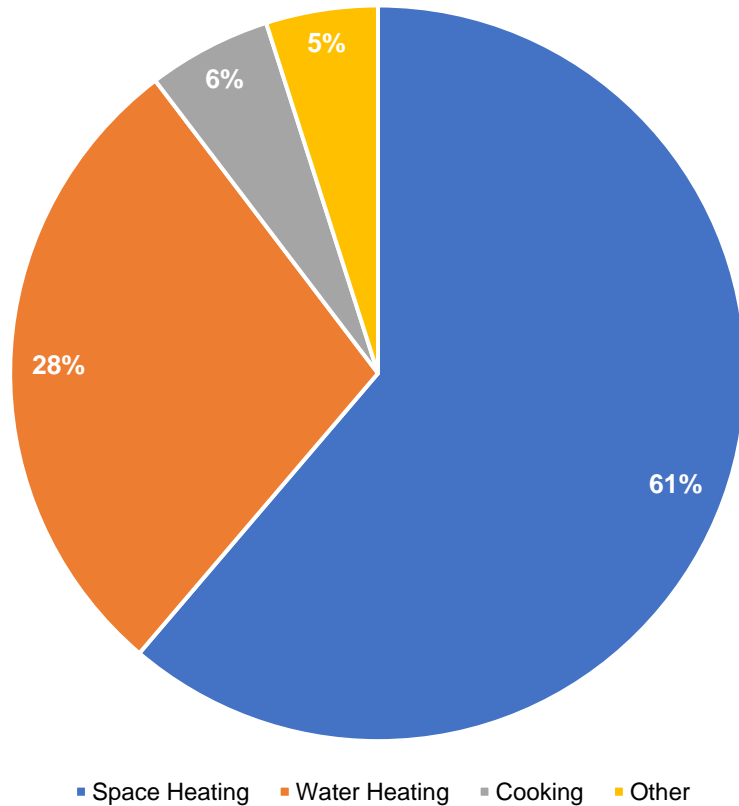
# Background: Emissions



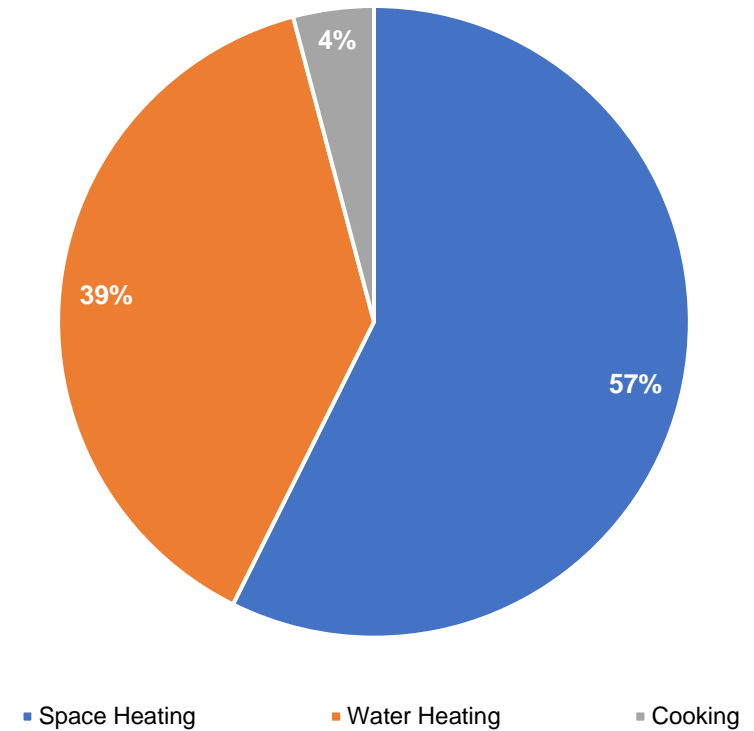
# Background: Emissions



District Residential Natural Gas Combustion NOx Emissions



District Residential Natural Gas Combustion GHG Emissions



# Overview of Relevant Rules



## Regulation 9, Rule 4: Natural Gas Fired Furnaces (Rule 9-4)

- Residential central fan type furnaces
- NOx emissions standard of 40 ng/J

## Regulation 9, Rule 6: Natural Gas Fired Boilers and Water Heaters (Rule 9-6)

- Natural gas-fired boilers and water heaters under 2 million BTU/hr
- NOx emissions standard from 10-14 ng/J dependent on size and usage
- Higher emissions standard for mobile homes (40 ng/J)
- **Both rules structured by point of sale – equipment cannot be installed that is manufactured after the compliance date**

# Rule 9-4 Updates



## DESCRIPTION

- ① Remove specification of fan type residential central furnaces and note rule applicability to all natural gas-fired furnaces used in commercial and residential buildings  
**Section 2-1-201**

## DEFINITIONS

- ② Addition of definitions for BTU, Heat Input, Natural Gas, Nitrogen Oxides, Residential Fan Type Furnace  
**Section 2-1-202 - 206**

# Rule 9-4 Updates



## STANDARDS

- ③ Reframe 40 ng/J standard for residential fan type central furnaces  
**Section 9-4-301.1**
- ④ Introduce 14 ng/J standard for residential fan type central furnaces applicable on July 1, 2023  
**Section 9-4-301.2**
- ⑤ Introduce zero NO<sub>x</sub> standard for all residential and commercial natural gas fired furnaces applicable on January 1, 2029. This includes non-central furnaces but does not apply to mobile homes  
**Section 9-4-301.3**



# Rule 9-4 Updates



## ADMINISTRATIVE REQUIREMENTS

- ⑥ Updates and clarifications to certification requirements and calculation methods  
**Section 9-4-401**
- ⑦ Addition of acceptance of South Coast Rule 1111 certification for units under 9-4-301.2 as a valid compliance statement  
**Section 9-4-402**
- ⑧ Introduction of Interim Report for District Staff to report on accessibility factors two years prior to implementation of zero NOx standard to ensure equitable outcomes  
**Section 9-4-405**



## MANUAL OF PROCEDURES

- ⑨
  - Introduction of Manual of Procedures section to clarify determination of emissions for standards under Section 9-4-301.
  - Defines EPA methods for determination of NO<sub>x</sub>, carbon dioxide and oxygen emissions

### Section 9-4-600

# Rule 9-6 Updates



## STANDARDS

- ① Introduction of zero NOx standard for boilers with a heat input capacity less than 75,000 BTU/hr, applicable on January 1, 2027  
**Section 9-6-301.5**
- ② Introduction of zero NOx standard for boilers with a heat input capacity of between 75,000 BTU/hr and 2 million BTU/hr, applicable on January 1, 2031  
**Section 9-6-303.5**

# Rule 9-6 Updates



## CERTIFICATION

- ③ Clarification of certification section including distinguishing geographical boundaries of the District vs. Air Pollution Control Officers actions and use of South Coast determinations for demonstration of compliance  
**Section 9-6-402**

## ADMINISTRATIVE REQUIREMENTS

- ④ Introduction of Interim Report for District Staff to report on accessibility factors two years prior to implementation of zero NOx standard to ensure equitable outcomes  
**Section 9-6-404**

# Projected Emissions Reductions



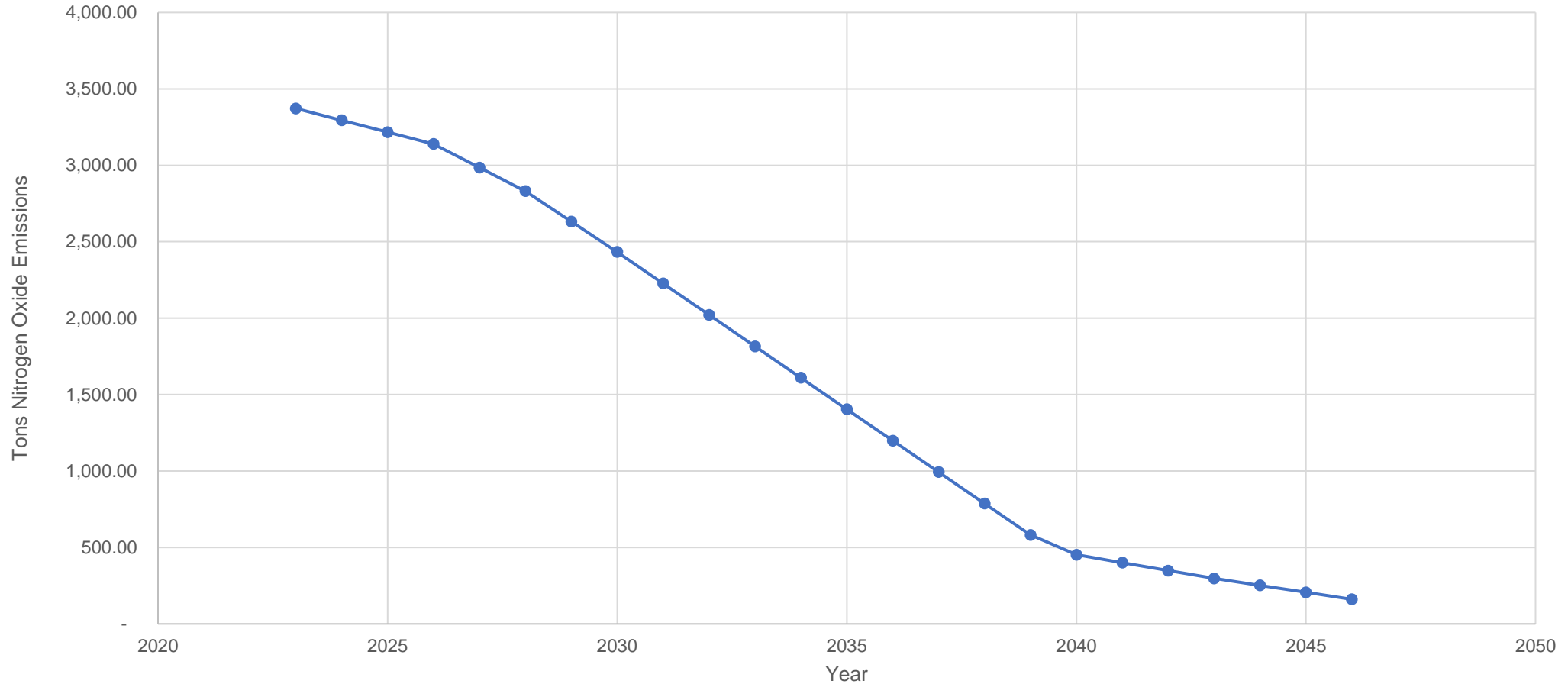
## ASSUMPTIONS

- Electric replacements
- Provided electricity is 98% carbon free
- No voluntary uptake prior to compliance dates
- Commercial water heating emissions also include equipment covered by Rule 9-7 (larger boilers) that are not impacted by this rulemaking
- No upstream methane reductions
- Water heater lifespan of 13 years
- Space heater lifespan of 18 years

# Projected Emissions Reductions



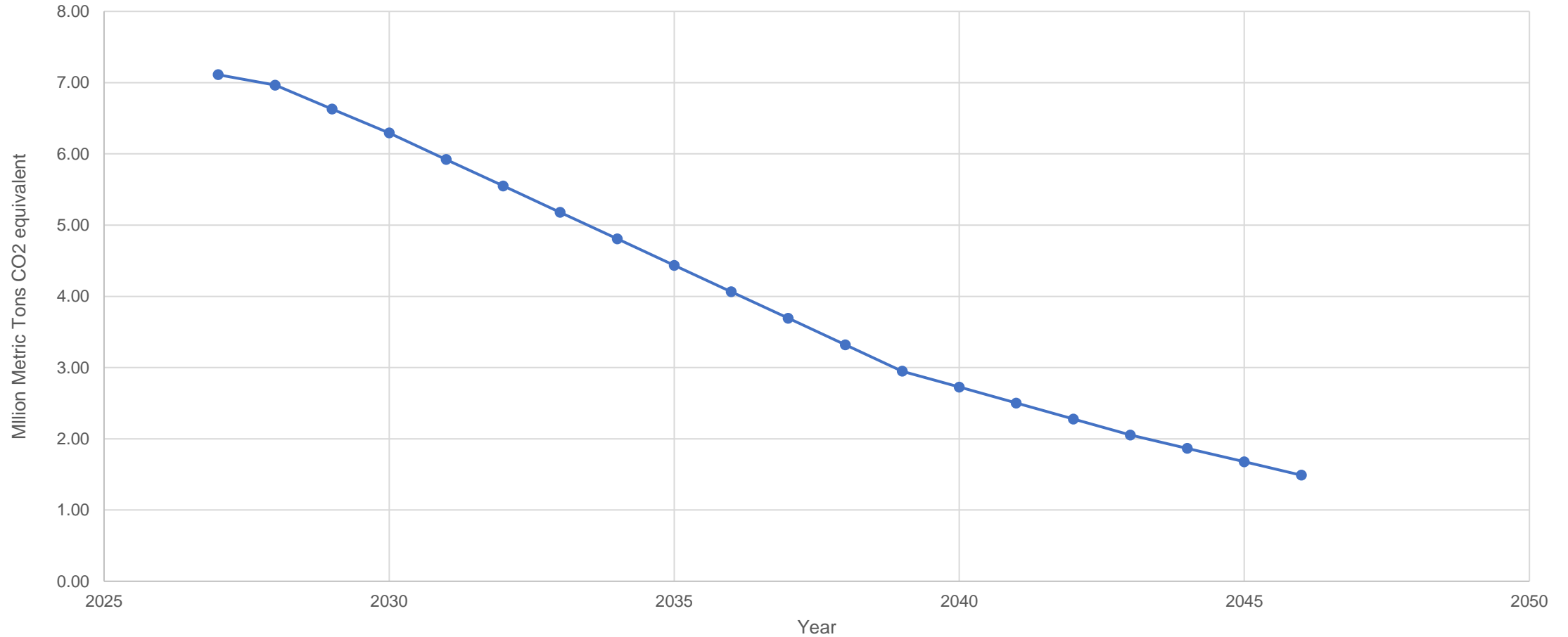
Commerical and Residential Space and Water Heating  
Projected NOx Emissions (tons/year)



# Projected Emissions Co-benefits



Commerical and Residential Space and Water Heating  
Projected GHG Emissions (MMTCO2e/year)





## Clarifying Questions

Regarding specifics of rule updates, applicability and emissions



**Materials:** <https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances>

**Comments By:** Nov. 1, 2021



# Stakeholder Involvement



- External stakeholder working group
  - 4 meetings throughout summer
  - Environmental advocacy groups, community groups, local government, state and regional agencies, equipment manufacturers, other industry stakeholders
- Additional individual meetings and presentations to existing groups as requested (Building Decarbonization Coalition, Alameda County etc.)

# Feedback Received



Keep equity considerations at the forefront with specific eye to impacts to low-income residents and renters



While balancing equity factors, realizing emission reductions (NOx and co-benefits) as soon as practicable is important



Allow manufacturers flexibility in certification processes and methods to meet the emission standards

# Interim Report



- Introduction of requirement for both rules for interim report to come back to the Board of Directors no later than two years prior to the compliance date
  - Technology options currently (and projected to be) available
  - Market availability of such technology
  - Projected costs of purchase and installation
  - Incentive programs available to reduce costs

# Guiding Questions



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Who stands to benefit most from the implementation of this policy? Who may be disproportionately burdened by this policy?

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Who is missing from this process and how can we ensure their concerns are represented and addressed?

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What unintended consequences could result from these draft amendments if they were adopted as envisioned/intended? What steps can be taken to mitigate these adverse impacts?

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What additional barriers might prevent individuals in certain racial/ethnic/socioeconomic groups from benefitting fully from this policy? Are there further ways to maximize equitable outcomes?

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How will impacts and performance be documented and evaluated? What methodologies will be used? How will results be used?

# Equity Considerations



Access to economic benefits, including robust market availability and affordability



Ease of installation and coordination with local requirements



Assurance that policy promotes affordable housing and anti-displacement outcomes



Access to health and safety benefits, including resiliency during climate events



**FEEDBACK**

Equity considerations for inclusion in interim report



**Materials:** <https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances> **Comments By: Nov. 1, 2021**

# Next Steps



## Next Steps

### OPPORTUNITIES FOR FEEDBACK

- Comments due by **Nov. 1, 2021**
- Report out on this workshop to Stationary Source and Climate Impacts Committee on **Oct. 18, 2021**
- Prepare Board Hearing package rule amendments based on feedback

# FIVE MINUTE STRETCH BREAK

The workshop will resume shortly.

Workshop Evaluation Survey:

<https://www.surveymonkey.com/r/NKR82QG>






# Comments, Questions and Answer Session



 Please mute yourself when you're not speaking

 Please raise your hand if you wish to speak and wait for the facilitator to let you know when you can unmute yourself & speak

 The Zoom Chat is also available for comments & questions



**Materials:** <https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances>

**Comments By:** Nov. 1, 2021

# Closing and Timeline



Materials available at:

<https://www.baaqmd.gov/rules-and-compliance/rule-development/building-appliances>

Workshop

**November 1, 2021**

Comments Deadline:

- Comments received will be posted to website
- Contact staff to discuss or for follow-up questions

***Staff contact:***

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**Senior Air Quality Engineer**  
**Rule Development**  
**[jelwell@baaqmd.gov](mailto:jelwell@baaqmd.gov)**

**THANK YOU FOR YOUR ENGAGEMENT**

# Workshop Evaluation



## WORKSHOP EVALUATION

**Help us improve our workshops and rule development process by completing this short survey in the link below.**

<https://www.surveymonkey.com/r/NKR82QG>