



CALIFORNIA  
ENERGY  
CODES & STANDARDS

A STATEWIDE UTILITY PROGRAM

# Second Stakeholder Meeting for Nonresidential HVAC (2 of 2)

March 29, 2017

WEBINAR



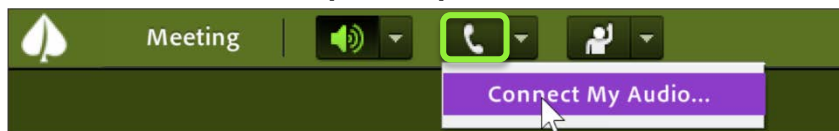
# Meeting Agenda

Time	Topic	Presenter
9:00 – 9:15	Introduction	Kelly Cunningham (PG&E)
9:25 – 10:40	Proposals Based on ASHRAE 90.1-2016 – Part 2 of 2: <ul style="list-style-type: none"><li>• Equipment Efficiency</li><li>• Transfer Air</li><li>• DCV</li><li>• Occupant Sensor Ventilation</li></ul>	Ken Takahashi (Integral Group) Stefan Gracik (Integral Group) Matt Dahlhausen (Integral Group) Jared Landsman (Integral Group) Jeff Stein (Taylor Engineering)
10:40 – 11:55	Proposal Based on ASHRAE 90.1-2016: <ul style="list-style-type: none"><li>• Fan System Power</li><li>• Exhaust Air Energy Recovery</li></ul>	Ken Takahashi (Integral Group)
11:55 – 12:00	Review and wrap-up, next steps	Kelly Cunningham (PG&E)

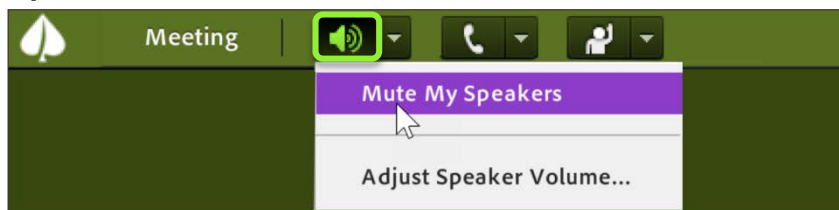
## Hear and Be Heard!



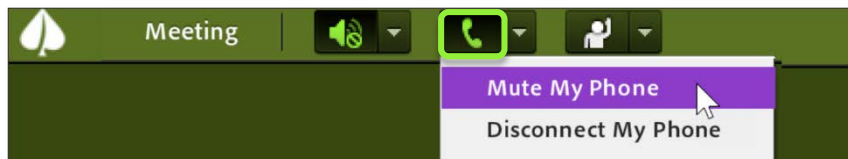
- Click the phone icon at the top of your screen, then follow the prompts



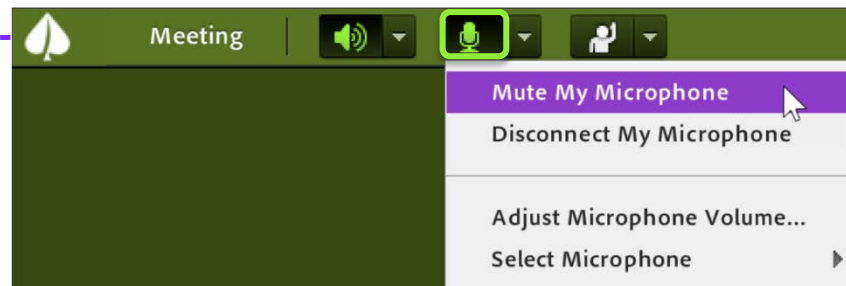
- If you connect via phone, mute your PC speakers to avoid feedback



- Mute your phone or microphone to avoid contributing unwanted background noise — unmute yourself when you want to talk



-OR-

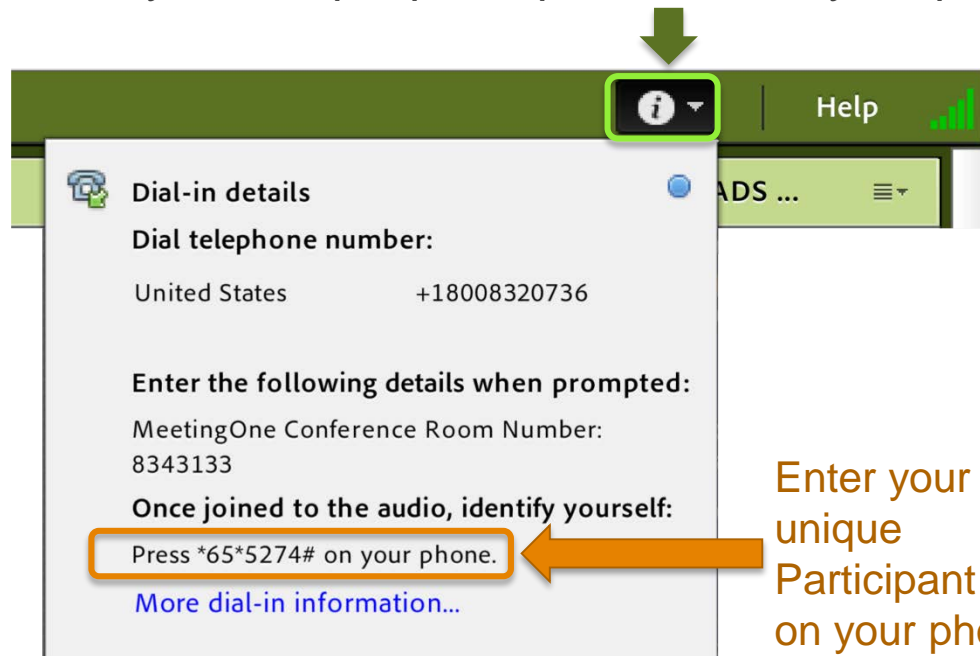


## Join your ears and eyes if you dialed in



If you dialed in and did not enter a participant code, please do so now.

- Click the information button on the right side of the main menu bar
- Enter your unique participant code on your phone



**Dial-in details**

**Dial telephone number:**

United States +18008320736

**Enter the following details when prompted:**

MeetingOne Conference Room Number:  
8343133

**Once joined to the audio, identify yourself:**

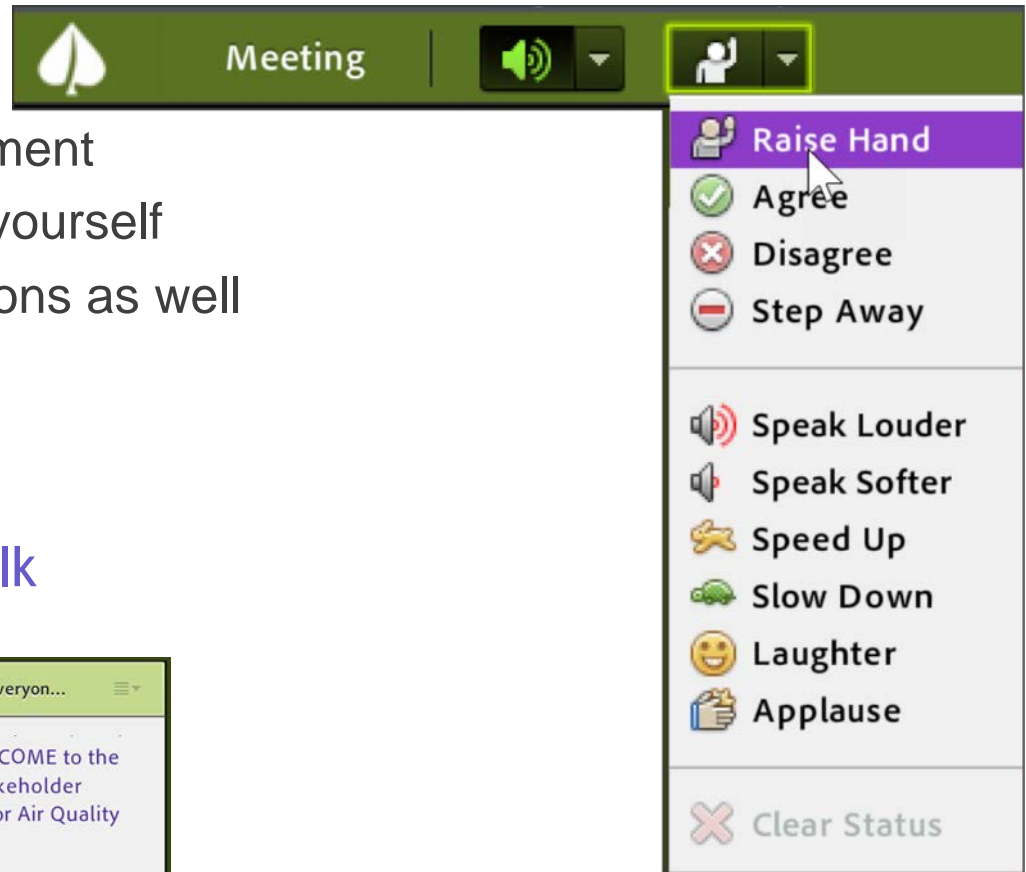
Press \*65\*5274# on your phone.

[More dial-in information...](#)

Enter your  
unique  
Participant code  
on your phone

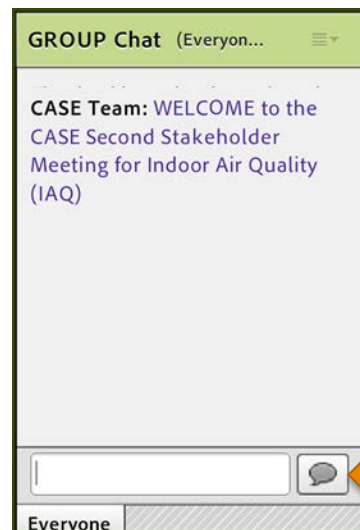
## Communicate with icons

- Raise your hand
  - We'll call on you in a moment
  - Don't forget to "unmute" yourself
- Feel free to use the other icons as well



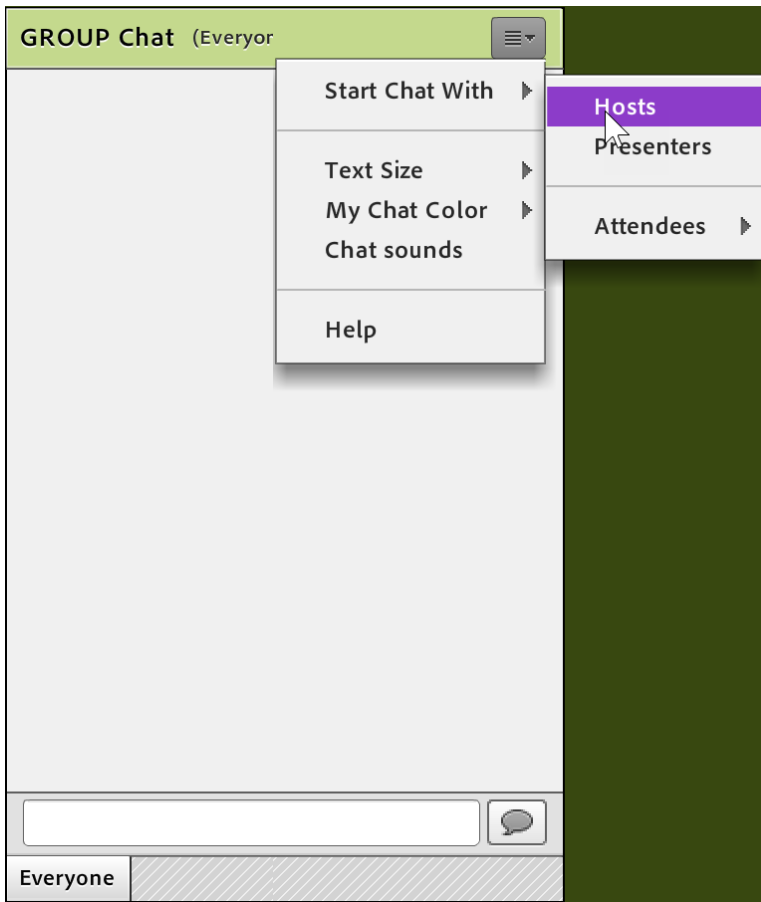
## Use Chat if you don't want to talk

- The Chat pod is consistently found in the lower left of your screen



Type here and  
press Enter on  
your keyboard

# Technical Support for the Meeting Room



## Tech support is standing by

- Use “Chat” (lower left of your screen)
- Direct your question or comment to “Hosts”
- Give us a moment to chat back

## Supporting Resources

- Click on links in the Downloads pod
- Use “tabs” to switch between general downloads and topic-specific downloads

**REPLACE**

Click on a “tab” to switch between views  
(It changes your view, but not others')

**DOWNLOADS**

General Res Envelope

→ Title 24, Part 6 Stakeholders website (Title24Stakeholders.com)

▷ Statewide Utility-sponsored Stakeholders Meetings

▷ Meeting Notes: First Stakeholders Meeting — Residential Envelope

→ Energy Code Ace website (EnergyCodeAce.com)

▷ See **Reference Ace** for 2016 Standards, Appendices, and Compliance Manuals

→ California Energy Commission 2019 Standards webpage

How to save downloaded files

**DOWNLOADS**

General Res Envelope

**DRAFT CODE LANGUAGE**

→ DRAFT CODE LANGUAGE: High Performance Walls

→ DRAFT CODE LANGUAGE: High Performance Attics

→ DRAFT CODE LANGUAGE: Residential High Performance Windows and Doors

→ DRAFT CODE LANGUAGE: Quality Insulation Installation (QII)

**APPENDICES**

→ Second Stakeholder Meeting: Appendix to Introduction

→ Second Stakeholder Meeting: Appendix to High Performance Attics

→ Second Stakeholder Meeting: Appendix to High Performance Windows and Doors

→ Second Stakeholder Meeting: Appendix to Quality Insulation Installation (QII)

**OTHER**

→ Excerpt from ACM Ref Manual: PV System Credit

How to save downloaded files

## Statewide Utility Team Title 24, Part 6 Advocacy Support

- The Utilities support the California Energy Commission by proposing changes to the Building Energy Efficiency Standards that are:

**Feasible | Cost effective | Enforceable | Non-proprietary**



## Statewide Utility Team Title 24, Part 6 Advocacy Support

- For information on the Energy Commissions' rulemaking process, visit: <http://www.energy.ca.gov/title24/2019standards>



# Objectives of Today's Discussion

Discuss and get input on:

- Code change proposals
- Technical and market feasibility
- Compliance and enforcement
- Cost effectiveness results (preliminary)
- Energy savings analysis (preliminary)

YOUR PARTICIPATION WILL INFORM THE CODE CHANGE PROPOSALS!



## Invitation to Participate

We want to hear from you:

- Supporting and opposing viewpoints are welcome
- We may not be able to reach resolutions today
- There are no stupid questions
- Mute your phone, but do not place us on 'hold'
- Clearly state your name and affiliation prior to speaking
- Speak loudly (without shouting)

NOTES & PRESENTATION MATERIALS: [www.Title24Stakeholders.com](http://www.Title24Stakeholders.com)

## Invitation to Participate

Participate in today's discussion by:

- Answering polls
- Use chat function
- Speak up and ask questions

Continue the discussion:

- Email or call CASE Authors
- Email [info@title24stakeholders.com](mailto:info@title24stakeholders.com)
- Contact California Energy Commission staff

NOTES & PRESENTATION MATERIALS: [www.Title24Stakeholders.com](http://www.Title24Stakeholders.com)

## Utility-Sponsored Stakeholder Meetings, March 2017

#	Date	Time	Meeting Group	Measures in Group
1	March 07, 2017	9:00 - 12:00	Laboratory Spaces	<ol style="list-style-type: none"> <li>1. Induction Exhaust Fans</li> <li>2. Fume Hood Sash Closures</li> </ol>
2	March 14, 2017	9:00 - 12:00	Residential Envelope	<ol style="list-style-type: none"> <li>1. Residential High Performance Walls</li> <li>2. Residential High Performance Attics</li> <li>3. Residential Improved Fenestration Products</li> <li>4. Residential Quality Insulation Installation (QII)</li> </ol>
3	March 15, 2017	9:00 - 12:00	Nonresidential HVAC 1	<ol style="list-style-type: none"> <li>1. Proposal Based on ASHRAE 90.1-2016                         <ol style="list-style-type: none"> <li>a. (1 of 7) Water Side Economize</li> </ol> </li> <li>2. Cooling Tower Minimum Efficiency</li> <li>3. Fault Detection Diagnostics (FDD) for Built-up Systems</li> </ol>
4	March 16, 2017	9:00 - 12:00	<ul style="list-style-type: none"> <li>• Residential IAQ</li> <li>• Nonresidential IAQ</li> </ul>	<ol style="list-style-type: none"> <li>1. Residential Quality HVAC</li> <li>2. Residential Indoor Air Quality (IAQ)</li> <li>3. Nonresidential Indoor Air Quality (IAQ)</li> </ol>
5	March 21, 2017	9:00 - 12:00	Warehouses	<ol style="list-style-type: none"> <li>1. Hybrid Condensers</li> <li>2. Loading Dock Seals</li> </ol>

MEETING SCHEDULE ALSO AVAILABLE AT: [www.Title24Stakeholders.com](http://www.Title24Stakeholders.com)

## Stakeholder Meetings in March 2017 (continued)

#	Date	Time	Meeting Group	Measures in Group
6	March 22, 2017	9:00 - 12:00	Nonresidential Lighting 1	<ol style="list-style-type: none"> <li>1. Nonresidential Indoor Lighting Sources</li> <li>2. Nonresidential Indoor Light Controls</li> <li>3. Nonresidential Lighting Alterations</li> </ol>
7	March 23, 2017	9:00 - 12:00	Residential Water Heating	<ol style="list-style-type: none"> <li>1. Residential Compact Hot Water Distribution Design</li> <li>2. Residential Drain Water Heat Recovery</li> </ol>
8	March 28, 2017	10:00 - 12:00	<ul style="list-style-type: none"> <li>• Residential HVAC</li> <li>• Demand Response</li> </ul>	<ol style="list-style-type: none"> <li>1. Residential Quality HVAC</li> <li>2. Demand Response Clean Up</li> </ol>
9	March 29, 2017	9:00 - 12:00	Nonresidential HVAC 2	<ol style="list-style-type: none"> <li>1. Proposal Based on ASHRAE 90.1-2016               <ol style="list-style-type: none"> <li>a. (2 of 7) Fan System Power</li> <li>b. (3 of 7) Exhaust Air Energy Recovery</li> <li>c. (4 of 7) Equipment Efficiency</li> <li>d. (5 of 7) Transfer Air for Exhaust Air Makeup</li> <li>e. (6 of 7) Demand Control Ventilation for Classrooms</li> <li>f. (7 of 7) Occupant Sensor Ventilation</li> </ol> </li> </ol>
10	March 30, 2017	9:00 - 12:00	Nonresidential Lighting 2	<ol style="list-style-type: none"> <li>1. Nonresidential Outdoor Lighting Sources</li> <li>2. Nonresidential Outdoor Lighting Controls</li> <li>3. Nonresidential Advanced Daylighting Design</li> </ol>

## Tentative Schedule for 2019 Code Development Cycle

Milestone	Date(s)
Utility-Sponsored Stakeholder Meetings	March 2017
Utility Team Submits Draft CASE Reports	April 2017
CEC Pre-rulemaking Workshops	May 2017 – June 2017
Utility Team Submits Final CASE Reports	June - July 2017
CEC Rulemaking	Nov 2017 – May 2018
2019 Standards Adopted	May 2018
2019 ACM Reference Manuals and Compliance Manuals Approved	Nov 2018
2019 Standards Effective	January 1, 2020

Let's move on to...

## Residential High Performance Walls



Thank you.

- **Kelly Cunningham**  
KACV@pge.com