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## Chat Transcript from Indoor NO2 Guidelines Workshop #2

09:06:27 From Tom Phillips: Thanks for organizing the workshop. Can the chat be saved?

09:14:10 From Tamara Abrams: Will you be sharing the slide deck, including the citations?

09:19:12 From Tom Philips: Plus, CARB Residential Indoor Cooking Study in a test home.

09:19:16 From Pat Wong: I do not know if the chat can be saved by participants, but we can provide a copy upon request after the workshop. The slide deck, including citations, will be posted on CARB

09:19:36 From Pat Wong: CARB's IAQ guideline website

09:19:49 From D Little: How do we find them on CARB's site?

09:20:30 From Julia "Ky" Gress (CARB): Yes, all registrants will receive a link to when the slides and video are posted to the website.

09:25:24 From Julia "Ky" Gress (CARB) : All material will be posted at this webpage:  
<https://ww2.arb.ca.gov/public-workshop-2-updating-indoor-air-quality-guidelines-nitrogen-dioxide>

09:26:06 From D Little: Thanks!

09:36:15 From Steve Temes: What does "sensitive" individuals mean? That wouldn't include NO2 as an asthma trigger.

09:47:31 From Steve Temes: Asthmatics are individuals, not a group.

09:57:51 From Jeff Williams: Approach #1: Adopt Existing Guideline Level(s) Representing Maximum Health Protection  
Approach #2: Adopt Existing Guideline Level(s) based on Risk Reduction  
Approach #3: Develop New Guideline Level(s)

09:58:51 From Brett Singer: Could you do both 1 and 2? Present as targets for max health protection for sensitive people and also for risk reduction.

10:00:03 From Alice Sung: Replying to "Could you do both 1 ..."  
yes, and could you do all three--with approach # 3 being phased in as readiness achieved?

10:01:56 From Alice Sung: Replying to "Could you do both 1 ..." Also think about the practical applications, with consideration to equity and most impacted and vulnerable populations, languages, outreach, etc.

10:04:33 From Alice Sung: It might be useful to consider approaches like how lead in water or asbestos, in existing buildings have been addressed and take lessons learned and be more proactive?

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- 10:08:56 From Jeff Williams: Replying to "Could you do both 1 ..."  
Hi Brett, I think that we can consider that, and I appreciate the suggestion.
- 10:10:43 From Tom Phillips: Alice: I agree.
- 10:11:14 From Zoe Zhang : <https://ww2.arb.ca.gov/resources/documents/impacts-toxic-air-contaminants-residential-appliances>
- 10:11:54 From Zoe Zhang: Research solicitation webpage for investigating air toxics from residential appliances is shown above.
- 10:17:32 From Alice Sung: Is there a single simple (low cost?) or handheld sensor that can measure all these contaminants including formaldehyde? If so, please let us know, thanks.
- 10:19:56 From Brett Singer: Indoors gases are pretty much always well-mixed
- 10:20:07 From Alice Sung: It's also that formaldehyde, though, is heavier than the mixed air, right?
- 10:21:46 From Brett Singer: I could comment on that if desired.
- 10:24:17 From Tamara Abrams: Thank you.
- 10:25:31 From Julia "Ky" Gress (CARB): Hi Alice. Please provide comments in the portal for future consideration. We appreciate hearing your thoughts and concerns.
- 10:25:44 From Nina Prescott: Replying to "Thank you." Hi Tamara, RMI has a summary page on health impacts of gas stoves here if helpful: <https://rmi.org/health-impacts-of-gas-stoves/>
- 10:32:52 From Maninder Thind : Staff Workshop: Funding to Support Modeling and Monitoring Air Quality and Co-Benefits of Energy Interventions to Inform a Clean and Equitable Energy Transition (MAQCEET) <https://www.energy.ca.gov/event/workshop/2024-01/staff-workshop-funding-support-modeling-and-monitoring-air-quality-and-co>
- 10:33:36 From Zoe Zhang : Project webpage for the low cost sensor whitepaper: <https://ww2.arb.ca.gov/low-cost-sensors-healthier-indoor-air-quality-impacted-communities>
- 10:33:53 From Brett Singer: <https://www.etcc-ca.com/reports/sensor-based-range-hoods>
- 10:35:52 From Maninder Thind: Replying to "Project webpage for ..." "What is the timeline for this project/whitepaper?"
- 10:36:14 From Zoe Zhang: Replying to "Project webpage for ..." it will end this September
- 10:38:00 From Zoe Zhang: Replying to "Project webpage for ..." Final report and guidance document from this project will be posted to this webpage when they are ready.
- 10:41:08 From Tom Phillips: Brent: Strongly agree re: CBO collaboration. Social Marketing rule #1: find the community leaders, listen to their needs, perspectives.

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- 10:42:10 From Alice Sung: Thank you Brett on this point with working with CBOs-a place for CARB would be to provide easy accessible 1-pagers in multiple languages that CBOs can be paid to disseminate and do the outreach for incentive programs and the benefits, thank you. Even providing the technical benefits in other languages could be a simple tool, thanks. Feel free to reach out offline: [asung1@gmail.com](mailto:asung1@gmail.com)
- 10:45:43 From Tom Phillips: Beth: has the CPUC been pushing back more lately against factoring in non-energy benefits such as IEQ and health? This may be a problem in getting funding for indoor NO2 mitigation.
- 10:46:41 From Maninder Thind: Replying to "Staff Workshop: Fund..." There is still opportunity to submit any comments/feedback to the goals and scope of this effort. Submit electronically through the Energy Commission's "Research Idea Exchange" docket here: <https://efiling.energy.ca.gov/EComment/EComment.aspx> (Enter docket # 23-ERDD-01)
- 10:47:24 From Alice Sung: Replying to "Beth: has the CPUC ..." Good question. Tom let's talk.
- 10:48:55 From D Little: To Beth, echoing Tom. Your insights? CPUC ignored the societal costs test in their recent decision re: flat rates. If they hear from more groups that we're concerned & watching, can it help? Esp. CARB
- 10:49:25 From Maninder Thind: Replying to "Staff Workshop: Fund..." Or submit comments/feedback by email to the Docket Unit at: [docket@energy.ca.gov](mailto:docket@energy.ca.gov) Please include docket number 23-ERDD-01 and "Staff Workshop on Modeling and Monitoring Air Quality and Co-Benefits of Energy Interventions to Inform a Clean and Equitable Energy Transition (MAQCEET)" in the subject line
- 10:50:46 From Beth Kelly: Replying to "Beth: has the CPUC ..." Yes. Cal Advocates is working to reduce equity programs at the commission (P.24-03-013) and legislature. Commission has just issued a proposed decision on the Societal Cost Test (see R.22-11-013). Also worth looking at CEC which just opened an OIIP on NEBS and Social Costs (see 24-IEPR-03)
- 10:52:27 From Tom Phillips: There are now 110 V induction stoves on the market. See Sean Armstrong, Redwood Energy.
- 10:52:28 From Alice Sung: Thanks what's the deadlines for all these comments in dockets-please include....
- 10:52:52 From Beth Kelly: Several folks have asked for my email. It is [beth@emk-law.com](mailto:beth@emk-law.com)
- 10:53:01 From Tom Phillips: Risk Reduction: See ROCIS.org Range Hood best practice guide and resources for low emission cooking, source control, ventilation, low noise, etc. Also, I have been looking into how to reduce risks in apartments without a range hood (there is some new research info). Will share info with you.
- 10:53:36 From Tom Phillips: Re: Health benefits, see modeling studies of weatherization and range hoods in low-income apartments by Fabian et al at Boston University.

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- 10:53:44 From Tom Phillips: Comment on implementation: 1) Focus groups and demonstration projects would help fine tune mitigation efforts and spread the word. 2) The guidelines should be used to design and evaluate state programs for environmental justice, decarbonization, etc., per state mandates for addressing health and other non-energy benefits. Current environmental review of such IEQ impacts is very limited.
- 10:54:11 From Tom Phillips: Have the other NO<sub>2</sub> guidelines considered multi-pollutant health effects? NO<sub>2</sub> does not exist in a vacuum and is often thought to be a proxy for the health effects of combustion PM co-pollution. Also, the early Canadian epi study (Dales) found that gas stoves were associated with indoor mold and asthma.
- 10:54:28 From Tom Phillips: (I just copied most of my input from Q&A)
- 10:54:43 From Pat Wong: Thanks Tom!
- 10:55:50 From Alice Sung: Replying to "Have the other NO<sub>2</sub> ..."  
Important points, thanks Tom
- 10:57:20 From Tom Phillips: What are the risk reduction benefits of different alternatives, in terms of # of persons potentially affected and the degree of benefit. The data may be limited to support a detailed analysis, but some range or scenario analyses would help frame the discussion.
- 10:58:27 From Alice Sung: Replying to "What are the risks..." Also, exposures to children in school kitchen environments might be interesting.