<table>
<thead>
<tr>
<th><strong>DOCKETED</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Docket Number:</strong></td>
<td>21-BUSMTG-01</td>
</tr>
<tr>
<td><strong>Project Title:</strong></td>
<td>Business Meeting Agendas, Transcripts, Minutes, and Public Comments</td>
</tr>
<tr>
<td><strong>TN #:</strong></td>
<td>236870</td>
</tr>
<tr>
<td><strong>Document Title:</strong></td>
<td>Transcript of February 10, 2021 Business Meeting</td>
</tr>
<tr>
<td><strong>Description:</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Filer:</strong></td>
<td>Cody Goldthrite</td>
</tr>
<tr>
<td><strong>Organization:</strong></td>
<td>California Energy Commission</td>
</tr>
<tr>
<td><strong>Submitter Role:</strong></td>
<td>Commission Staff</td>
</tr>
<tr>
<td><strong>Submission Date:</strong></td>
<td>2/22/2021 10:38:39 AM</td>
</tr>
<tr>
<td><strong>Docketed Date:</strong></td>
<td>2/22/2021</td>
</tr>
</tbody>
</table>
BUSINESS MEETING
BEFORE THE
CALIFORNIA ENERGY COMMISSION

In the Matter of: )
) 21-BUSMTG-01
Business Meeting )
______________________________)

REMOTE ACCESS ONLY

The California Energy Commission’s (CEC) February 10, 2021 Business Meeting will be held remotely, consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from the California Department of Public Health to encourage physical distancing to slow the spread of COVID-19. The public may participate consistent with the direction in these Executive Orders.

Pursuant to California Code of Regulations Title 20 section 1104(e), any person may make oral comment on any agenda item. To ensure the orderly conduct of business, such comments will be limited to three minutes or less per person. Any person wishing to comment on information items or reports (non-voting items) shall speak during the general public comment portion of the meeting and have three minutes or less to address all remaining comments.

WEDNESDAY, FEBRUARY 10, 2021
10:00 A.M.

Reported by:
Marth Nelson
APPEARANCES

Commissioners (Via Remote)

David Hochschild, Chair
Karen Douglas
Andrew McAllister
Patricia Monahan
Siva Gunda

Staff Present: (Via Remote)

Drew Bohan, Executive Director
Darcie Houck, Chief Counsel
Courtney Smith, Chief Deputy Director of Programs
Noemi Gallardo, Public Advisor
Matt Chalmers, Chief Counsel’s Office
Cody Goldthrite, Secretariat

Agenda Item

Chen Moua 9
Sudhakar Konala 6
Mike Gravely 7
Felix Villanueva 8
Eleanor Oliver 9

Others Present (Via Remote)

Interested Parties

Public Comment (Via Remote)

Rick Daniels, Needles City Manager 4
Joshua Stoops, Counsel City of Needles 4
Darcey Messner, Town of Truckee 5
Mark Dickson, Simple Power Solar 5
Seth Kielas, Simple Power Solar 5
Kevin McCabe, National Renewable Energy Laboratory, NREL 6
Imre Gyu, Department of Energy, DOE 7
Daniel Borneo, Sandia National Laboratories 7
Ranji George, Coalition for Advanced ZEV 7, 9, 14
**APPEARANCES (Cont.)**

**Public Comment (Via Remote)  
Agenda Item**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Josh Dean</td>
<td>California Energy Alliance</td>
<td>8</td>
</tr>
<tr>
<td>Joy Larson</td>
<td>CalSEED New Energy Nexus</td>
<td>9</td>
</tr>
<tr>
<td>Michael Burz</td>
<td>EnZinc</td>
<td>9</td>
</tr>
<tr>
<td>Kevin Kung</td>
<td>Takachar</td>
<td>9</td>
</tr>
<tr>
<td>Russell Okamura</td>
<td>ReJoule</td>
<td>9</td>
</tr>
<tr>
<td>Lauren Cullum</td>
<td>Sierra Club</td>
<td>14</td>
</tr>
<tr>
<td>Robert Gould</td>
<td>Physicians for Social Responsibility</td>
<td>14</td>
</tr>
<tr>
<td>Jonny Kocher</td>
<td>Rocky Mountain Institute</td>
<td>14</td>
</tr>
<tr>
<td>Karl Aldinger</td>
<td>North County Climate Change Alliance</td>
<td>14</td>
</tr>
<tr>
<td>Sasan Saadat</td>
<td>Earthjustice</td>
<td>14</td>
</tr>
<tr>
<td>Shiba Bhowmik</td>
<td>Sinewatts</td>
<td>14</td>
</tr>
<tr>
<td>David Moller</td>
<td>Climate Reality Project, Bay Area Chapter</td>
<td>14</td>
</tr>
<tr>
<td>Vanessa Teo</td>
<td>Bay Area Youth Climate Action Team</td>
<td>14</td>
</tr>
<tr>
<td>Eric Arens</td>
<td>League of Women Voters</td>
<td>14</td>
</tr>
<tr>
<td>Jenny Green</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Laura Deehan</td>
<td>Environment California</td>
<td>14</td>
</tr>
<tr>
<td>Sonja Robinson</td>
<td>Public Power San Diego</td>
<td>14</td>
</tr>
<tr>
<td>Ronni Solman</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Christy Zamani</td>
<td>Day One</td>
<td>14</td>
</tr>
<tr>
<td>Bret Andersen</td>
<td>Carbon-Free Palo Alto</td>
<td>14</td>
</tr>
<tr>
<td>Ann Feeney</td>
<td>San Diego 350</td>
<td>14</td>
</tr>
<tr>
<td>Ann Harvey</td>
<td>Climate Health Now</td>
<td>14</td>
</tr>
<tr>
<td>Robert Whitehair</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Elaine Salinger</td>
<td>Citizens Climate Lobby</td>
<td>14</td>
</tr>
<tr>
<td>Mark Roest</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Lauren Weston</td>
<td>Acterra, Action for a Healthy Planet</td>
<td>14</td>
</tr>
<tr>
<td>Diane Bailey</td>
<td>Menlo Spark</td>
<td>14</td>
</tr>
<tr>
<td>Bronwyn Barry</td>
<td>North American Passive</td>
<td>14</td>
</tr>
<tr>
<td>House Network</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matthew Vasilakis</td>
<td>Climate Action Campaign</td>
<td>14</td>
</tr>
<tr>
<td>Colleen Fitzsimons</td>
<td>US Green Building Council</td>
<td>14</td>
</tr>
<tr>
<td>Bruce Naegel</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Paul Wermer</td>
<td>San Francisco Climate</td>
<td>14</td>
</tr>
<tr>
<td>Emergency Coalition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom Kabat</td>
<td>Self</td>
<td>14</td>
</tr>
<tr>
<td>Wesley Reutimann</td>
<td>Active San Gabriel Valley</td>
<td>14</td>
</tr>
<tr>
<td>Ellyn Dooley</td>
<td>Citizens Climate Lobby</td>
<td>14</td>
</tr>
<tr>
<td>San Mateo County Chapter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Public Comment (Via Remote)

<table>
<thead>
<tr>
<th>Name</th>
<th>Committee/Group</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Sung, Aia East Bay Committee On</td>
<td>On the Environment</td>
<td>14</td>
</tr>
<tr>
<td>Carlos Davidson, Pacifica Climate Committee</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Melissa Elder, Sunrise Movement San Diego and San Diego Building Electrification Coalition</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Helena Birecki, Climate Reality Project Bay Area</td>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

(statement read into the record)
## INDEX

**Page**

<table>
<thead>
<tr>
<th>Proceedings</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td></td>
</tr>
<tr>
<td>1. Audience Survey</td>
<td>30</td>
</tr>
<tr>
<td>2. Consent Calendar</td>
<td>46</td>
</tr>
<tr>
<td>a. AKER OFFSHORE WIND USA LLC/AKER SOLUTIONS, INC.</td>
<td></td>
</tr>
<tr>
<td>b. U.S. DEPARTMENT OF ENERGY’S (DOE) LAWRENCE BERKELEY NATIONAL LABORATORY (LBNL)</td>
<td></td>
</tr>
<tr>
<td>c. THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, SAN DIEGO CAMPUS (UCSD)</td>
<td></td>
</tr>
<tr>
<td>d. REDWOOD CITY ELEMENTARY SCHOOL DISTRICT</td>
<td></td>
</tr>
<tr>
<td>e. DEL NORTE COUNTY UNIFIED SCHOOL DISTRICT</td>
<td></td>
</tr>
<tr>
<td>f. RESIDENTIAL ENERGY SERVICES NETWORK, INC. (RESNET)</td>
<td></td>
</tr>
<tr>
<td>3. Discussion of CEC Progress on Joint Agency Report, Charting a Path to a 100 Percent Clean Electricity Future, Senate Bill 100 (2018)</td>
<td></td>
</tr>
<tr>
<td>4. City of Needles (Needles) (19-BSTD-07)</td>
<td>47</td>
</tr>
<tr>
<td>5. Town of Truckee Petition (19-BSTD-12)</td>
<td>53</td>
</tr>
<tr>
<td>6. DOE-National Renewable Energy Laboratory (NREL)</td>
<td>66</td>
</tr>
<tr>
<td>7. National Technology &amp; Engineering Solutions of Sandia, LLC (Sandia National Laboratories)</td>
<td>75</td>
</tr>
</tbody>
</table>
INDEX (Cont.)

8. Advanced Plug Load and Smart Exterior Lighting
   - GFO-20-303
   a. THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,
      ON BEHALF OF THE SAN DIEGO CAMPUS (UCSD)
   b. CALIFORNIA ENERGY ALLIANCE

9. California Clean Energy Fund dba CalCEF Ventures
   a. CALSEED INITIATIVE 2020 PROTOTYPE AWARDS
      i. Takachar Inc.
      ii. Icarus RT Inc.
      iii. EnZinc Inc.
      iv. ReJoule, Inc.
      v. SiLi-ion, Inc.
      vi. Antora Energy Inc.

10. Minutes
    109

11. Lead Commissioner or Presiding Member Reports
    110

12. Executive Director’s Report
    124

13. Public Advisor's Report
    125

14. Public Comment
    50, 58, 70, 90, 100, 127

15. Chief Counsel's Report
    190
   a. Pursuant to Government Code Section 11126(e), the
      CEC may adjourn to closed session with its legal
      counsel to discuss any of the following matters to
      which the CEC is a party:
I N D E X (Cont.)

Page

15. Chief Counsel's Report (Cont.) 190


ii. Communities for a Better Environment and Center for Biological Diversity v. Energy Resources Conservation and Development Commission, and California State Controller, (Alameda County Superior Court, Case No. RG13681262)

iii. State Energy Resources Conservation and Development Commission v. Electricore, Inc. and ZeroTruck (Sacramento County Superior Court, Case No. 34-2016-00204586


vi. Olson-Ecologic Testing Laboratories, LLC v. CEC. (Orange County Superior Court Case No. 30-2019-01115513)


b. Pursuant to Government Code sections 11126 (a) and (e), the CEC may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and circumstances exist that warrant the initiation of litigation, or that constitute a significant exposure to litigation against the CEC, which might include personnel matters.
PROCEDINGS

FEBRUARY 10, 2021 10:02 a.m.

CHAIR HOCHSCHILD: Welcome, good morning. And everyone, thank you for joining and welcome to our February business meeting. And we have a lot to celebrate early in the meeting here and we'll get into that in a moment. But first let's begin if we could, with the Pledge of Allegiance. Commissioner Douglas, would you be willing to say the Pledge?

COMMISSIONER DOUGLAS: Absolutely, here we go.

(Whereupon the Pledge of Allegiance is recited.)

CHAIR HOCHSCHILD: Thank you, Commissioner.

Again, we have over 3 million cases of COVID-19 in California and that number is still climbing, so asking everyone to continue to wear a mask when in public and wash your hands, keep your distance. For more information visit covid19ca.gov.

Oh, and by the way there's another development regarding the pandemic, which is a tool created by Governor Newsom called My Turn. It’s a website where you can be notified when you're eligible to get vaccinated. And to schedule your vaccination appointments in that website is myturn.ca.gov.

So today's business meeting is being held remotely without a physical location for any participant.
consistent with Executive Orders N-2528 and N-2920, and the
recommendations from the California Department of Public
Health, to encourage social distancing in order to slow the
spread of COVID-19.

The public may participate or observe the meeting
consistent with the direction of these executive orders.
Instructions for remote participation can be found in the
notice for this meeting, as set forth on the agenda posted
to the Commission's website link for the business meeting.

We're using a combination of Zoom and Verizon for
remote access. If Zoom shuts down today we'll continue
this meeting on the Verizon phone line. Call 1-888-823-
5065. And the pass code is “business being.”

The Commission values public participation and
stakeholder engagement pursuant to California Code of
Regulations Title 20 Section 1104(e). Any person may make
oral comments on any agenda item.

To ensure the orderly conduct of business such
comments will be limited to three minutes or less per
person as to each item listed on the agenda that has voted
on today. Any person wishing to make comments on
information items or reports, which are non-voting items
shall reserve their comment for the general public comment
portion of the meeting agenda. And shall have three
minutes or less total to state all remaining comments.
Before turning to the agenda items, I'd like to introduce a new -- actually before we get on further, let me actually begin if we could with these two remarkable new Commissioners.

So yesterday we had some very big news. The Governor appointed Siva Gunda to be a Commissioner at the Energy Commission. I had the pleasure of swearing him in this morning. And appointed Darcie Houck, our tremendous Chief Counsel, to be a Commissioner at the Public Utilities Commission. And I wanted to begin with a few words about each of them and then turn to my fellow Commissioners for comments.

I just want to remark, though, first, that it is virtually unprecedented for a Governor to select a member of agency staff to become a Commissioner. I think in the entire 45-year history of the Energy Commission that's only happened once before. And for it to happen two times in one day is both an incredible validation of the unique tremendous talents of Siva and Darcie, as well as a validation of what we're all doing here together at the Energy Commission. The Governor saw what we get to see every day, which is we have an incredibly talented team.

I have very, very high hopes for both of you. I believe both of you are uniquely talented, committed, passionate, capable, collaborative people. And the
challenges that we face are colossal. We all know that, but the way we overcome those is by working as a team and being relentless. And bringing that creativity and smarts and sound judgment and just common decency in heart that you both have.

So Siva to you, first welcome Commissioner Gunda. You’re going to get used to hearing that a lot. And I just want you to know that the Governor doesn't make mistakes on these things, okay? This is fully deserved. It's something you've earned. And we're really thrilled to welcome you as a colleague.

And I believe in a week or so we'll have Commissioner Houck be sworn into the PUC. And the same goes for you, Darcie. Just this is something that you deserve, that you've earned. That you are really built to do this job. So, I’m really excited as well, because the collaboration between the PUC and the Energy Commission is so fundamental to our success.

And so, knowing the strong bond the two of you have with each other, is yet another reason why we should all be excited. But with that, let me just turn it over to my colleagues for comments. Maybe beginning with Commissioner McAllister.

BOARD MEMBER MCALLISTER: Great, well thanks.

What a difference a day makes. Yeah, it's hard to build on
what you just said, because it all just rings so true. And
it is fundamentally true, so. But I have been really lucky
to work with both Siva and Darcie. And I’ll go in order,
and I really think I’ll have maybe a little more personal
perspective on Siva, just because we’ve worked so closely
together the whole time. Actually, since before you came
to the Commission, and certainly since you've come to the
Commission.

And just watching your native ability to tune
into a situation and make it better is just tremendous.
And apart from technical skills and sort of the substance
subject matter, which you also have in spades, I think that
team building and that kind of consensus building skill is
really fundamental to your success. And what we need in
California.

And so, you and I have also been through somewhat
similar personal experiences at a very, you know, sort of a
depth affecting level with our core relationships. And I
feel like that's a sort of a core commonality that we have
that's given our personal bond a particular strength. And
so I couldn't be happier for you and for the Commission and
for California.

And you know, working with you as I oversaw EAD
and now as I pass that mantle essentially to you I think
it'll be really strong partnership. In particular the top
to bottom energy planning that we're doing in this state is really across those two divisions, the Assessments Division and Efficiency Division and Buildings. And so you know there's just a really -- there's a lot to build on and I couldn't be happier with this foundation that we've got with you coming on board.

And I guess I'll finally just wrap up. I'm a little bit at a loss for words, which as you guys know it's not often that happens to me. But Chair, you said it, just kind of the heart and doing things for the right reasons and doing your best. And that in and of itself as a guiding principle is something that you manifest all the time. And that centeredness, that balance, that personal commitment, people feel that. We all feel it. And we know you bring that to the Commission and it's only -- it's all for the good. So welcome and I'm really looking forward to working with you, Siva.

And then Darcie, I almost forgot. Yeah, it's been what a pleasure to work with you since you came to the Commission. I wish we could have had you for longer. And really as an intellect and a legal mind, you've just been amazing, incredible. And we're a little bit -- it's bittersweet that you're taking all those skills over to the PUC. But we will still benefit from the relationship with you over there. And I'm sure, you know, very good things...
will come from that as well.

You're, and in both cases really, just the representation of our state in terms of its diversity and its willingness to accept anyone who is willing to contribute. I mean, that happened to me as an immigrant to California. But as a true immigrant, Siva, and Darcie as a native person I just couldn't be prouder of our state for sending those messages that that is fundamentally important to who we are as a state. And it makes our decision making better.

So, Darcie, all the best luck. Hopefully you'll be working at the Commissioner for the week until you get sworn in. So anyway, I'll leave it there, but I'm just really happy for both of you and congratulations. It's totally deserved.

CHAIR HOCHSCHILD: Well said, Commissioner.

Let's go to Commission Douglas next.

COMMISSIONER DOUGLAS: All right, well I want to first join in all the comments that have been made by the Chair and Commission McAllister, because it's absolutely right. I couldn't be happier when I learned who was being appointed. Well, for Siva I couldn't have been happier. For Darcie, I had moments of ambivalence. But I’m really proud of her and her appointment to the PUC. And just so happy that we have had the benefit of having Darcie here as
long as we have even though we would have liked longer. But I know she's going to do just great work at the PUC.

Siva, you're amazing. You've been so fun to work with. I think in addition to everything Commissioner McAllister said, you know, just you're so grounded. You're so just human and strong in relationships.

But one of the things I've most enjoyed about working with Siva in his role is that even when he has a specific division to run and a specific set of mandates or jobs to do, he's always looking at the big picture. I mean Siva was one of the people who we could just talk to about how different issues related to other issues and the big picture. And so I think that's part of what he brings that's so important to us, is not only the really detailed knowledge of EAD and electricity systems and analysis, but that ability to relate it to policy. And to the direction we're going into the mandate of the Energy Commission, which is in a lot of ways a balancing mandate. It's reliability. It's environment. It's the shift to clean energy. It's getting all of this to work, and so it really requires understanding how the different pieces fit together. And I think Siva’s really very well prepared to step in and help us do that.

So, Darcie, you're going to be great at the CPUC. I mean it's so great, I talked to Darcie last night. I
just told her, you know, her knowledge. I mean coming in to the CPUC as a Commissioner with her experience in both the Energy Commission and the Public Utilities Commission and her experience as an AlJ. And her knowledge of energy and her passion and desire to do really strong work with tribes. But also with a range of all Californians. It's just really exciting.

And so congratulations and we’ll be working with you closely. I told her we'd give her - I’d give her about a week to settle in and then we'll start asking for things. But congratulations.

CHAIR HOCHSCHILD: Thank you, Commissioner.
Let’s go to Commissioner Monahan next.

BOARD MEMBER MONAHAN: Well, very excited to welcome Commissioner Gunda to the virtual dais. And I think, as we all know the new Commissioner is a stickler for calling us “Commissioner.” And so I’ve warned him that now that he is one, he can’t call me Commissioner Monahan when we’re not on the dais. So I hope he actually is able to follow through with that.

And I just want to say I couldn't -- like everybody else I’m so overwhelmed and joyful that -- well for both of you. But let me start with Siva and then Darcie, I’ll turn to you.

Siva, what I have been so impressed with in my
time working at the Commission is the level of integrity that you bring to everything that you do. You are so thoughtful. You're curious about how we can continue to improve. You never rest on your laurels. You're always thinking. When we raise new ideas, you're always very open to considering them and thinking through well how do we get there? And you know just that relentless curiosity and striving for improvement is something that really I think personifies you.

And the other thing I really -- so many things appreciate, but one is that you give credit to others, and you do it so graciously and so consistently. I’ve never heard you say, “I did this.” I always hear you say, “The team did this,” and that is something I think that we can all learn from in terms of recognizing that it takes all of us working together to be successful. And you really model that, so I look forward to working with you. I look forward to learning from you and I look forward to having many, many opportunities for us to have a dialogue. Especially on the dais since now we’re going to be kayoed (phonetic) out of other conversations. But I welcome you. And Commissioner Houck, it’s so fun to call you guys Commissioners I’ve got to in the time that we've worked together you've helped me so much.

And one of the things, which I still do is like
you're constantly working nights and weekends, which is on the one hand you've helped me a lot. But on the other hand, I worry. I think, oh my God she's working so many nights so many weekends, how does she do it?

And I just want to say you know we're lucky, the state of California, to have you and your wealth of experience. The PUC is lucky that you are going to be a Commissioner and you're going to be able to use the knowledge that you've acquired through your years, in private practice through your years, working for the PUC and for us and apply that to the real pressing problems that are facing the state right now.

So, I'm going to miss you, and I'm sure you're happy that you don't have to deal with any more of these issues that I have been - (laughter) how do we make this strike force (phonetic) functional? You've really helped and I'm glad that we can check the box on that strike force issues we've been working on with that before you leave. So otherwise, I'd be saying, "Don't go until we get it all straight!"

But I welcome you to being in this Commissioner world and really look forward to working with you closely.

So, congratulations to both of you.

CHAIR HOCHSCHILD: Thank you, Commissioner.

And just a final comment here before I ask Darcie
and Siva to say a few words. You know, I really want
everyone to recognize the historic nature of these
appointments. And Siva for you in particular, as an
immigrant from India coming here, really making your way
and working your way up, and having the kind of positive
impact that you can. That's the story of immigration to
the United States and it's really an incredible story. And
it's something that I think California is especially proud
of. We're a state of immigrants in a nation of immigrants,
but this appointment is historic.

Actually, I think you'll be the only immigrant
appointee to the PUC or the Energy Commission. The
President of CAISO is also an immigrant, but on that front
as well it's really historic.

And then Darcie, your tribal background and
tribal work, you know is really an incredible legacy that
you've created. And I want to remind everybody that
incredible historic decision the PUC made I guess maybe a
year ago where tribal lands, the surplus lands from
utilities, the tribes now have the first opportunity to get
those. That was really led by you with Commissioner Guzman
Aceves, and I know you're going to continue to push the
ball forward there.

I will say you know Darcie with your news, it
really is bittersweet, because you're such a fundamental
core part of the team here. So, it's a big loss and I feel that. I feel simultaneously thrilled for you and sorry to see you go. But I think the right thing is for you to do this. I know it's the right thing for the state. And I think it will bring our agencies closer together and that's good for everybody, so we're really just going to be one big family on this journey together. And I'm just really excited for your new role at the PUC.

So, with that let's hear from our two new Commissioners just any thoughts you'd like to share, maybe, starting with Commissioner Gunda.

BOARD MEMBER GUNDA: Thank you. Thank you, Chair, and thank you to all the Commissioners for the kindest words and welcoming me to joining this group. So, I we already had the ceremony this morning and I shared a lot of my thoughts then. I just want to reiterate a few of those in the spirit of just being able to thank the staff.

The staff at the Energy Commission are one of the most passionate, committed and intellectually honest group of people that I've ever met. And it's been an absolute honor and pleasure to be a part of EAD and be able to help lead the Division and call each one of them, my colleagues, friends and family.

So, I will -- the thing that I'm going to miss the most taking on this role is to just making random calls
at 10:30 in the night and talking about a chart. So, I hope that that work will continue and they'll not close the doors on me to join them when I would want to.

But I just want to thank the EAD and everything that the EAD has done over the last six months, particularly in helping keep the lights on in California. And in the collective success that the team had, I get to be the face of it. And I just want to recognize the success of all the staff together, and all the work we've done in SB 100 and the root cause analysis and lastly the liability issues, culminates in this opportunity for me. And that's not lost on me and I just want to thank everybody for helping me take this honor and opportunity to contribute further.

Chair and Commissioner McAllister, you both noted this, I am deeply thankful to both of you for your generosity and kindness bringing me to the Energy Commission, helping me take on important challenges, and continue to contribute. And so I hope to do that.

And to Commissioner Monahan, I’m really glad I could call you, Commissioner, because (indiscernible) virtual dais. Thank you. Thank you for opening up those lunch slots (phonetic) with me and just talking through with me and just connecting with me on a human level and just helping me grow as a person.
You were one of the first people who said, “You know, I just want to help you, I want to help you grow and I want to help you succeed.” And that's just such a wonderful sentiment and I just am so thankful that I get to work with you more closely.

And Commissioner Douglas, I think we are oversizing the geographical and diversity of the Commissioner (indiscernible). But I just look forward to continue to working together, and thank you so much for your words.

And really helping unlock some of the jam we were in, in SB 100 early on thinking it through. How you sat us down and then got us through. Thank you so much for all the support and guidance.

And to Darcie I am so, so, so grateful. And I’m so, so over the moon for your appointment. I could not – I mean, I feel the same way, but you live only half a mile away from me, so I can come and knock on your door. But also I just look forward to the opportunity to work with you, Darcie, together. And I’m just thankful.

Before I close, I just want to thank my family and my friends for helping me get here in my journey. I do want to call out my friends at UC Davis, and all the work that we've done at UC Davis at the Energy Efficiency Center that really helped me learn a lot of the subject matter that I'm walking into. And helped me grow some of my early
preferences on how to work with people and how to collaborate.

So, I just want to thank Ben Finkelor at UC Davis, Bill McNamara, Andrew Hargadon and a number of my mentors who really helped cultivate some of the good things I have.

And lastly, we, as the Chair noted 2020 has been an incredibly difficult year. Apart from the pandemic it has been a time where the voices that couldn't find a voice, that was lost in the vacuum, I know the glass finally shattered. And there was a lot of voices out there that are looking for equity and equality and there is so much in energy that we could do in terms of equity. And then just a common playing field for everybody. And I just am so thankful that Our Commission, our leadership, and all the people here in this Commission embrace that so -- the idea of inclusivity and the idea of diversity at their hearts. So, I just am so thankful to be a part of this organization.

And before I hand it over to Darcie, I’m so grateful to Governor Newsom for the faith he has put in me to take this on. One of the things that I was asked was why I think this would be a good thing. And just all the company, the company that I'm going to continue to be in and the opportunity to just be there and help in every way...
I can.

And we have such a huge, huge path going forward.

2045 is not that far away and there is so much going on.

And I would just want to be a part of the solution and then collaborate and bring as you all noted that ability of intellectual honesty and the collaborative spirit to the best I can. And just a promise to all my colleagues and friends that I will do my best.

Chair, back to you.

CHAIR HOCHSCHILD: Thank you, Commissioner.

Now, Darcie, I think we have you for another week or so as Chief Counsel, but would love for you to share a few words if you're ready now.

MS. HOUCK: Yes, I’m going to be here for another week, until next Wednesday, I think. This is all happening so fast I’m sort of caught off guard, but I started out at the Energy Commission fairly shortly after law school. I was a staff counsel during the energy crisis and I can't think of a better job to have had as a young lawyer.

I was able to work in so many areas and had so many great mentors that I was able to learn from at that time when Bill Chamberlain was here as Chief Counsel and Jonathan Blees and Karen Holmes, who is also still here. Ironically now she was my mentor then and now I'm the Chief Counsel and she's still in the Legal Office. And I sign
her time sheets and she's just been amazing to have as an asset, her and Bill both. And I was an advisor for Jim Boyd, who I also just have a tremendous amount of respect and learned a lot from.

And so, coming back here to the Energy Commission as the Chief Counsel was a big deal to me to be in that role, after having worked here as a junior lawyer. And it's really sad that it hasn't been that long you know in one sense, with all the difficulties this year. It seems like a long time. But in another sense, it seems like it's just gone by really, really quickly. And I’ve been really honored to work with each of you. You've just been amazing commissioners and clients and I just feel very lucky to have been able to get to know each of you, and to work in your different areas.

My biggest hurdle here is I am so excited about the work that the admin part has been difficult. And I really enjoyed getting to know each of you and learning more about all the different work that we're doing. The load management standards with Commissioner McAllister, working with Commissioner Monahan on some of the EV expansion, the issues that have come up.

Commissioner Douglas and the Chair, you both brought me on and encouraged me to apply for this position. And have just been amazing you're concerned about the
tribal communities and the ability to allow me to participate in our outreach and what we're doing there has just been amazing and the support all of you have shown. I just feel really honored.

And my team and the CCO has also -- just we've got an amazing full-service law firm that has a lot of great people that are excited and care about their mission. All of my chief counsels, Allan Ward, I couldn’t have done this job without him over the last year. And just cannot say enough about what a wonderful person and colleague he is.

James Qaqundah got hired on in the middle of the pandemic and has just really stepped up and gotten to know people and done an excellent job. And he’ll be able to take over working with you, Commissioner Douglas, on the tribal issues.

And Linda Barrera stepped in as Assistant Chief in the Hearing and Policy Unit. And I also just could not have done things without Linda. She's amazing, brilliant. Her engineering background has really come in very useful on so many issues and she's just so thorough and detailed.

And you know, Kerry Willis in the Siting Unit, I’ve learned a lot working with her and the work that she's doing, and again Karen Holmes. So, everybody in CCO. We've also hired a number of people over the last year with
the workload increases in retirement, and so I just want to acknowledge that great team that you've got there to support you. And they'll continue supporting you.

And all of the deputy directors have just been amazing to work with and to really, I think welcome the CCO into being part of the team on all of all of their issues. You know, Natalie, Hannon, Mike Sokol, and especially Siva and I had to work on a number of issues over the last couple of months. And he's been just an amazing colleague and I'm so excited to be able to work with him in this new capacity and his new role, which he is so deserving and is going to do an amazing job.

And I really just want to also particularly and especially thank Drew for all of his support. He has been a really great partner in the Executive Office and I think we've made a good team, you know, all of us.

So, it is really bittersweet. It's still all sinking in. I've got a great group of people at the PUC and you know there's nine amazing Commissioners I'm going to be able to work with. And I really look forward to continuing working with all of you and really making sure that those relationships between the two agencies get stronger and can grow positive.

So, thank you for giving me this opportunity to say a few words. And to just be here over the last year, I
really love the Energy Commission. It’s the state’s think
tank on energy and it's really about the future of how
we're going to get to our renewable goals. And I think
being able to partner with you from the PUC will be a great
opportunity.

And I will be here over the next week though, so
I will continue to be part of the CCC till next Wednesday
and again look forward to this new opportunity.

CHAIR HOCHSCHILD: Thank you so much, Darcie.

So, we have one other new superstar who’s joined
the Energy Commission. Anna Ferrera who was appointed
Governor Newsom to serve as Assistant Executive for
Governmental and International Affairs. And I do want to
thank Barry Steinhart for leading OGA these past five
years, and thank him for all his service.

Anna is going to take over international as well,
so my International Advisor Alana Sanchez will become kind
of part of that shop. Anna is not able to be with us this
morning, because she's at the Assembly Budget 3 Committee
meeting with Drew. But I will say a few words about her.

She's incredible. We're really lucky to have her
talents. She has worked in the State Legislature, most
recently was with CalEPA doing their governmental affairs
for Secretary Blumenfeld, has run the Schools Energy
Coalition, did all the advocacy for Prop 39 among her
varied experience including Department of Energy and other private sector work. And brings incredible strategic talents to CEC. We're really, really thrilled to have her on the team. And at the next business meeting when she's able to join us by video, we’ll have her patch in.

I also wanted to point out that at today's meeting we're going to be giving -- making almost $6 million in grants which is going to help with California’s economic recovery. We're going to try and total those every month, so folks have a chance to see what the total numbers are.

And at this point we're going to turn to an audience survey the Public Advisor has put together. Do you want to run that, Noemi?

MS. GALLARDO: Hello, everybody. Yes, I will.

This is Noemi Gallardo, the Public Advisor. The Energy Commission is conducting this audience survey to gain a better understanding of the public’s experience in our business meetings. And to use that information to help us improve our processes moving forward.

This is an effort that Vice Chair Scott and I worked on before she left the Commission, so I’m invoking her positive spirit here and her enthusiasm for always wanting to make things better for the public.

This is a voluntary survey. We have 4 questions
we’ll pose using Zoom’s polling feature. We will show you the results, but we will not hold any discussion today about the responses.

For those of you who are not able to use the Zoom polling feature, we have it available for you. You can participate in the survey through the Energy Commission’s business meeting webpage. And on that page look for the link that says Business Meeting Participation & Engagement Survey. I'll share that link here shortly.

So, let's begin. We're going to go to the first question. Okay, so here’s the first question. This is anonymous. You can only pick one response from the six options. And the question is, “How may CEC business meetings have you attended from January 2020 through today?” So, we’ll give it about 30 more seconds. I see a lot of you are engaging here, thank you. And the options are:

- This is my first
- 2-4
- 5-7
- 8 or more
- All of them
- Not sure

Okay, we’ll give it about 15 more seconds. I still see some activity here. Okay, we’re going to close
the poll now. View the results, and then we’ll go to the
next question.

All right, so here we go. The second question
is, “Why do you join CEC business meetings?” And this is a
multiple-choice question. It is anonymous. And the five
options are:

• I am personally passionate about energy
  policy.

• I’m here for work purposes.

• I join when there are issues that will
  impact me directly.

• All of the above.

• None of the above.

So, we’ll give you about 30 more seconds here.

Okay, I still see some movement, thank you for those who
are participating. All right, and we'll close this poll
and share the results. And then we'll move on to the next
question.

So, this third question is, “What is your
preferred way to join CEC business meetings?” And it is
multiple choice and not anonymous. The six options are:

• In-person in CEC building.

• Zoom virtual platform.

• Verizon phone line.

• I prefer multiple options to join.
• Not sure.
• Or other.

And we’ll give it about 30 more seconds. All right, I’m still seeing some activity here.

Okay we're going to end the poll now, and share the results. And then we'll go to our final question.

All right, so this question is, “How easy is it to participate in CEC business meetings?” This question is anonymous and you can choose multiple answers. The options are:

• Very easy.
• Satisfactory, but it is difficult to locate the meeting material.
• Satisfactory, but it is unclear how to make public comment.
• Satisfactory, but I’d like to learn other ways to engage the CEC.
• Not easy.
• Or other.

I will give you about 30 more seconds. All right, thanks to those of you participating. I still see some activity here. We're going to close this soon, so please hurry.

All right, we're going to close this one now, share the results real quick.
All right, thank you so much everybody. That concludes our survey and, Chair, I'll hand it back to you.

CHAIR HOCHSCHILD: Okay. Thank you so much, Noemi, for that.

So today we also have a farewell, a lot of movement here, to Courtney Smith who is embarking on a new journey with a sister agency. And we are really proud of her. I have a resolution I'd like to read it's dedicated to her. She has served as Deputy to Drew Bohan for the last few years, and before that ran the Renewables Division, before that was an advisor to Vice Chair Scott and really has done incredible work.

So, let me begin with this resolution.

"Whereas, Courtney Prideaux Smith devoted five and a half years of her career to the California Energy Commission, as an advisor to Commissioner Janea A. Scott, the deputy director for the Renewable Energy Division and finally as chief deputy director; and

"Whereas, Courtney lost the Energy Commission’s annual Halloween costume contest five years in a row despite her homemade, creative submissions as a black and white character; a television; a suffragette; the Milky Way; and Minerva the mighty; and

"Whereas, despite this annual setback, Courtney modeled an unparalleled commitment to excellence and
stellar spirt of service while working diligently to
advance the agency’s mission on behalf of the people of
California; and

“Whereas, Courtney helped oversee the
transportation policy as an advisor before leading teams
responsible for several key energy and climate policies
including the Renewables Portfolio Standard, New Solar Home
Partnership Program, and Power Source Disclosure Program;
and

“Whereas, Courtney is a known “fixer” who applied
her problem-solving skills to manage and improve the Energy
Commission’s annual workplan process in her first year as
chief deputy director, meeting with every division and
office to manage the change; and

“Whereas, Courtney supported then-newly appointed
Commissioner Patty Monahan to engage new equity-focused
partners, including the Disadvantaged Communities Advisory
Group, to inform investments for the Clean Transportation
Program; and

“Whereas, Courtney co-founded the Energy
Commission’s Inclusion, Diversity, Equity, and Access
Initiative, which inspired the staff to identify
opportunities to increase equity and encouraged
collaboration and creativity to conquer the challenges; and

“Whereas, Courtney dusted off her crown after
getting knocked down, reclaiming her power in part by
ironically wearing pink on Wednesdays but mostly by
empowering others through daily actions and the annual
International Women’s Day celebration she helped
establish;” which is wonderful. And

“Whereas, Courtney responded to the COVID crisis
and the stay-at-home order by initiating and leading a
cross-departmental strike team to ensure that staff had the
tools and support to successfully work remotely; and

“Whereas, Courtney kept the weekly Executive
Office meetings rolling and productive despite kids, pets,
moms, and significant others appearing; noisy gardening
equipment, glaring back lights, and muted speakers; and
knock-your-socks-off healthy homemade snacks; and

“Whereas, while Courtney was a work warrior, she
also laughed contagiously and wore her heart on her sleeve.
She helped staff feel better during trying times, shedding
ugly and happy tears with staff during ups and downs, and
always lending a helping hand and a shoulder to lean on;

and

“Whereas, while Courtney will warmly receive
this, she dreams of a formal resolution process and policy
to ensure equity in recognizing the Energy Commission’s
dedicated and brilliant staff.

“Be it therefore resolved that the California
Energy Commission recognizes and commends Courtney Prideaux Smith for all of her extraordinary efforts and achievements throughout her tenure at the California Energy Commission and wishes her the best in the next stage of her career.”

Congratulations, Courtney.

Let’s turn to the Commissioners. Can we start with Commissioner Monahan?

BOARD MEMBER MONAHAN: Courtney, this is really bittersweet for me. I’ve got to say when I was a new Commissioner, you helped me so much in terms of just getting my feet on the ground and helping with engaging external stakeholders and just really being a sounding board. And somebody I could count on to give me a really good advice, also really good editing. And Courtney, does writing come up? Because Courtney is also an amazing writer.

And I would just say like you’re the fixer. You just like anytime there’s a problem you have this way to fix it. And I am going to be like speed dialing you in your new job, because I've come to rely on that.

Sorry Courtney, but I just want to personally thank you. And I look forward to seeing you flourish in your new career. I just really appreciate all you’ve done for the Energy Commission and for me and for the State of California. So, let's continue to stay in touch, as
colleagues and friends. And I’m here to be a resource for you in whatever way you need going forward, so thank you.

CHAIR HOCHSCHILD: Thank you, Commissioner.

Let’s go to Commissioner Douglas.

COMMISSIONER DOUGLAS: All right, well Courtney, good luck in your new position. You know, we're all so excited for you and I think you're going to do great. You’ll have all the challenges you need to stay busy and occupied and productive. And some really important policy issues to work on and so it's really exciting.

I really enjoyed getting to work with Courtney, most recently. Because, you know, in her role she does so much management, but I actually got to work with her on a policy issue recently. That she was our lead in the Carbon Capture Working Group and she did great work in that. And I got engaged and really enjoyed working with her on that.

So, you're leaving us with a lot of things that we need to backfill, because you've been doing some great work here. And that's okay. We'll manage and we wish you the best of luck and look forward to continuing to work with you.

CHAIR HOCHSCHILD: Thank you.

Commissioner McAllister?

BOARD MEMBER MCALLISTER: Yeah, hey Courtney.

So, congratulations. I know you’ve wanted to dig into more
policy for a while now. And you're going to have lots of opportunities to do that, so I’m sure you’ll have a big shovel to really dig in.

But you know all that notwithstanding, your administrative ability was just so - it has been so valuable at the Energy Commission. So, you know we don't maybe always get to use the right -- you know the full balance of our skills that we have in the portion that we might want, because you have so many skills that you know there's more than enough to go around. The function of your breadth of ability, so.

And I know Drew has just depended on you so much, and you're leaving some big shoes to fill. But it was really great to get to know you when you were over at Janea’s office next door. And just thanks for all your contributions to the Energy Commission to help the trains run on time and help them get started when they stalled out on the track. And really just be that problem solver that was so essential on many things along the way, so thank you. Thank you and good luck.

CHAIR HOCHSCHILD: Yeah. And I should mention I did talk to Vice Chair Scott last night, who sends her congratulations to you and to Siva and Darcie. She wanted to join. She had a meeting with her new bosses in DC, so couldn't be here, but let's go to Commissioner Gunda.
BOARD MEMBER GUNDA: And thank you, Chair.

Courtney, I think we had an opportunity to give you all the kudos in our private deputies meeting. But I just want to take the opportunity to repeat some of the themes that came up there, right? I mean it think so I mean you are kind of like the pinnacle of just bring me a rock, (phonetic) and convert that into a problem statement and solve it. So, you've been so amazing in being able to do that for the organization on so many different fronts.

And I think on a personal note, I mentioned the level of gratitude I had for your leadership on inclusivity and diversity and justice. I think you embrace the values of fairness and equity to your core. And that's something that you've just instilled in this organization from top down. And I'm just so grateful for your leadership in that area.

As I mentioned to you in our in our previous call staff in my Division, said we were moms and dads. As moms and dads, we were just so grateful for Courtney, for her leadership during the COVID times. And helping solve the issues with an eye on fairness and making sure everybody was taken care of.

I think you know you are a champion. You could practically achieve anything you want to. And I just wish you all the best. It’s just crazy that we both are -- you
hired me into the deputy position what. You were on the
interview. It's just interesting that we are both kind of
transitioning on the same day. All the very best, and I
heard the rumor that we'll all be pretty much in proximity,
in the future. So, I look forward to working together.
Thank you.

CHAIR HOCHSCHILD: Yeah, and thank you,
Commissioner. I would just like to add a few thoughts
myself. Courtney, I'm really proud of you. I remember a
drive we did; I can't remember what we were visiting, some
power plant out in the desert or a military base or
something. Anyway, we're in this middle of nowhere,
Southern California desert on a long, long drive together a
few years ago. And had a chance to really visit about so
your hopes and dreams for your career path, and I really
enjoyed that conversation.

And I guess the main thing I want to say to you
is I think what's happening with the state right now
hitting these huge challenges, bouncing back, showing
resilience, getting creative, that's often how our careers
go. We run into big challenges and all of us hit those.
And it's kind of about getting back up on your feet and
solving the issues and growing and learning. And I really
have just seen you face so many challenges.

This is a very fast paced work environment with a
lot of big knotty challenges. And I just really want to
support you in keeping going, keeping growing, keeping
learning and keeping getting better. I think you have a
ton to offer. I really appreciate your energy; you have an
incredible motor and passion for this.

And I also wanted to in particular, you've heard
me say this before, but you know in hockey you get credited
with an assist when you're two passes away. We wouldn't
have Lindsay Buckley but for you. And the incredible work
she's doing to elevate our communications work, it was
really because of you bringing her in. And I know that's
ture with many of the people you've helped bring in.

So, we wish you all the best and would love to
hear if you'd like to share a few words.

MS. SMITH: Sure, thank you.

Well, I'm not much of an Academy Awards gal, so
I'm going to keep it short, but first I do need to correct
the record. I did manage to win one of the Halloween
costume contests. (Laughter) My first year I was part of a
team of that one, so I guess the lesson there is we're
stronger together.

And so I just want to thank you all for the kind
words. You know, I'm really grateful for my time really
going to know and working with and trying to support some
just really great staff here at the Energy Commission. And
I’m going to really miss working with so many folks at the Energy Commission on the daily.

You know, in many ways I grew up with the Commission. I cut my teeth here on many issues. And so, for those opportunities, I will always be really, really grateful. And this experience has prepared me to be able to take on that next challenge. So, thank you to all of you for being part of my journey. And I’m not going to be a stranger. I’ve still got decades more in my career, and so I will be working with many of you again just in a different capacity, so thanks so much.

CHAIR HOCHSCHILD: So big congratulations, and I know Drew was going to try to join, but he's at the Assembly budget.

Is he with us?

MR. BOHAN: Right here, Chair.

CHAIR HOCHSCHILD: Oh yeah, Drew would you like to say a few words?

MR. BOHAN: Yeah, absolutely. I got the good fortune of being selected to be the one out of 750 staff who gets to speak about Courtney, because if -- when we talked about the logistics of the meeting we would be here, for a very, very long time if you heard from all of staff, because she's touched so many people in her time here.

And I'll be brief, but you guys have already said
most of it. But Courtney, just incredibly versatile and
I’ve got to tell you guys, because I know this better than
I think anybody in the building what a joy it's been
Courtney, I just want to say to you, to work with you every
day.

And when I look back at COVID, I don't miss all
that much you know? I'm not a big Zoom guy and I am not a
cat and don't plan to be one, but I’d just as soon be on by
phone. But I really, really miss my day-to-day
interactions with Courtney, because we talk plenty now but
it's just not the same to be able to -- I mean she would
walk into my office or I'd walk into her office with
Courtney on a given day 5 times you know, maybe would be
the average, maybe 20 on some days. And it’s the little
things. I'm not going to call her up just to tell her some
stupid joke I heard. And then that will lead to some other
conversation, but that was the sort of serendipity that I
really miss from the office.

One event, I think, sums up Courtney Smith and
that was COVID. I think Courtney Smith was built for the
COVID crisis, because he's clear. She's decisive. She's
smart as hell. And her public health background really
didn't hurt when it came to try and figure out what to do.
But there was a lot of people looking at each other going,
well what are we going to do? Are we going to stay in the

CALIFORNIA REPORTING, LLC
229 Napa Street, Rodeo, California 94572 (510) 224-4476
office or are we going to leave? And she was like, “No, we’re going to do this.” And you know there were other agencies and we've all heard about this, that were struggling with the transition. And we just did so well. So, I don't want to go on too long, but I want to mention two other things. And that is as Commissioner Gunda noted we did go around the room at our weekly deputies meeting we host every Thursday morning. And it was just so heartwarming to hear what all of her colleagues, the ones that report to the Executive Office and meet with her every day. And I mean she's the boss, you know and but just the heartfelt gratitude and thanks that they all had for her. I was really happy we had the opportunity to do that.

So, I want to close by just saying, on behalf of all staff, thank you Courtney and best of luck.

CHAIR HOCHSCHILD: Thank you, Drew. Yeah, we wish you well, Courtney, and big congratulations to you.

So, we're making absolutely terrible time on our agenda. We haven’t even got to the Consent Calendar. But I just want to say we spend a lot of time on these send offs and welcomes and congratulations, because our most important asset are our people. That's the heartbeat of the Energy Commission and it's worth every minute. So, I
really want everyone to know that's why we do this.

And we are -- you know, all of the incredible achievements of the last years and it's just flows from our team. So, I think you've all seen why we're so thrilled with the team we have here today.

So, let me just say it's 11:00 o'clock now.

Commissioner McAllister and I have a hard stop at noon for a meeting with the Governor's Office. We will go for the next hour, break at noon, then reconvene at 1:00. And I guess so with that we'll get into the agenda.

So, if I could have -- are there any public comments on the Consent Calendar, Madam Public Advisor?

MS. GALLARDO: This is Noemi. There is no public comment on Item Number 2, the Consent Calendar.

CHAIR HOCHSCHILD: Okay. Commissioner McAllister, would you be willing to move the Consent Calendar, Item 2?

BOARD MEMBER McALLISTER: Move consent.

CHAIR HOCHSCHILD: Okay, Commissioner Douglas would you be willing to second that?

BOARD MEMBER DOUGLAS: Second.

CHAIR HOCHSCHILD: All in favor say aye,

Commissioner McAllister?

BOARD MEMBER McALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?
BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously.

Item 3 has been removed from today's agenda and will be heard at a later business meeting.

Item 4, City of Needles.

MR. MOUA: Thank you and good morning Chair and Commissioners. My name is Cheng Moua. And I am presenting for Item 4 City of Needles. I’m a mechanical engineer in the Efficiency Division’s Building Standards Office. With me is Matt Chalmers from the Chief Counsels Office. Next slide, please.

This item is relating to Title 24, Part 6 of the California Energy Code, which includes solar PV requirements for all newly constructed homes. This item benefits Californians by ensuring that the PV requirement only applies where it is cost effective. It recognizes where consumers have low-cost energy rates, and are paying less for their energy than the current cost of a PV system.

This is a rare case as costs continue to decline.

This item can help reduce PV costs for California even
further. Next slide, please.

To provide background, the 2019 Energy Code became effective on January 1, 2020, and requires rooftop solar PV on all newly constructed low-rise residential buildings. As part of the PV adoption, Section 10-109(k) authorizes the CEC to determine that the PV requirement not apply to certain buildings in areas where local utility electricity rates, Net-energy-metering rules, or interconnection fees, causes the PV requirement to not be cost-effective. Next slide, please.

The City of Needles submitted an application to the CEC for a determination that the PV requirements should not apply to Needles due to its low-cost energy rates. Needles is a small community of roughly 5,000 residents in eastern San Bernardino County, near the borders of Nevada and Arizona. Needles provides electric service to its residents through the Needles Public Utility Authority.

Electricity rates are based on season and customer consumption, including a summer and a winter schedule that incorporates over and under hydro allotment rates. These rates in 2020 ranged from roughly $0.06 to roughly $0.09 per kilowatt-hour. Its Net-Energy-Metering or NEM rules allow PV customers to be compensated at these same rates for any PV generation.
Needles held a public meeting and approved the decision to submit an application proposing that its low-cost energy rates make the solar PV requirement not cost-effective. Staff reviewed the application and performed a life cycle cost-effectiveness analysis. Staff found that applying both Needles energy rates and NEM rules for the analysis resulted in the solar PV requirement to indeed, not be cost-effective. Results show that the electric bill savings generated over the life of having the solar PV system were less than the solar PV system cost, having a benefit-to-cost ratio of less than 1.0.

Staff prepared and published a report detailing the analysis that was completed, and posted it on the CEC’s website for public comment. No comments were received on this publication. Next slide, please.

Because the staff analysis showed that the solar PV requirement is not cost-effective using Needles Public Utility energy rates and rules, staff recommends approval of the resolution determining that the 2019 Energy Code PV requirements do not apply to City of Needles.

This concludes my presentation. Mr. Chalmers and I are here to answer any questions. Thank you.

CHAIR HOCHSCHILD: Thank you so much, Cheng.

Any public comment, Madam Public Advisor?

MS. GALLARDO: Yes, this Noemi Gallardo, Public
Advisor. We have two people on the line. First, we’ll open up the line for Rick Daniels, Needles City Manager.

Rick, your line is open. Please feel free to begin.

MR. DANIELS: Hi, welcome. We're so grateful over here on the east coast of California along the Colorado. But the City of Needles would like to thank the Energy Commission and their staff for reviewing this determination letter.

We're here to answer any questions that you might have, but we work very hard to keep our power rates as low as possible.

MS. GALLARDO: Thank you, Rick.

We also have Josh Stoops, Counsel for Needles. Let’s open up his line to see if Josh has any comments.

Josh, your line is open.

MR. STOOPS: Good morning, Commissioners. I’m Josh Stoops, outside counsel for Needles. Just wanted to say thank you to the Commission staff that prepared the paper and who we've been working with through the process. It’s been a relatively long process with some unanticipated changes along the way, or sorry unanticipated challenges along the way, but we appreciate the diligence of staff. Otherwise, I’m happy to answer any questions as needed. Thank you.
MS. GALLARDO: All right, thank you.
Chair, that was the last public comment for Item
Number 4.

CHAIR HOCHSCHILD: Okay. Thank you.
Let’s go to Commissioner McAllister for comment.

BOARD MEMBER MCALLISTER: Yeah, so you all
remember that we've had a small number of these cases. And
it really is a function of the nice design and sort of very
appropriate design of the last part sister update. That we
did open the door. Alongside of PV requirement we did open
possibilities for petitioning the Energy Commission for
exceptions to that requirement, and this is a very
reasonable exception.

And City of Needles gets power from the Western
Area Power Administration, it is the federal authority or
administration that has really cheap power. And kudos to
them. It's a good thing that they have affordable rates.

And this process, if you’ll recall the first
time, we went through it, it was a little tortured, because
we were sort of feeling our way. And we wanted to make
sure that we had a protocol that was really reasonable and
worked. And that was rigorous and ended up with the right
answer when jurisdictions come to us for these exemptions
from that requirement. So, this process, you know worked
again here with the City of Needles.
I want to thank the city for bringing us the well thought out petition and want to thank staff for digging in and getting through it and bringing us this proposal. It’s a reasonable one. I think I would recommend that we approve it.

CHAIR HOCHSCHILD: Thank you. Unless there’s any discussion, Commissioner McAllister, would you be willing to make the motion?

BOARD MEMBER McALLISTER: Sure, I’ll move this item.

CHAIR HOCHSCHILD: Commissioner Douglas, would you be willing to second?

BOARD MEMBER DOUGLAS: Yes, second.

CHAIR HOCHSCHILD: All in favor say aye, Commissioner McAllister?

BOARD MEMBER McALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well. That item passes unanimously. Thank you to the staff.

BOARD MEMBER MCALLISTER: Thank you, Cheng.
CHAIR HOCHSCHILD: Yes, sir.

MR. MOAU: Thank you.

CHAIR HOCHSCHILD: Did you have a comment?

BOARD MEMBER MCALLISTER: No, I was just saying thank you to Cheng. That’s all.

CHAIR HOCHSCHILD: Oh, yeah. Thank you.

Let’s turn now to Item 5, Turning to Item 5, Town of Truckee Petition, Cheng?

MR. MOAU: Hi, thank you. I am also presenting for Item 5, the Town of Truckee Petition. Again, my name is Cheng Moua and also with me again is Matt Chalmers from the Chief Counsels Office. Next slide, please.

So, Item 5 is different from Item 4, but also relates to the California Energy Code solar PV requirements. This item is related to snow loads and PV installation.

This item benefits California by confirming the PV requirement applies where it can be safely installed and does not apply where design requirements for snow loads can’t be met, protecting the consumer. This item also provides clarification to the PV requirement in snow country for local enforcement agencies and builders to follow. Properly installed PV systems are an important part of achieving the state’s climate change goals and reducing greenhouse gas emissions.
This item promotes the successful installation of PV systems in snow country and encourages the solar industry to solve snow load challenges. Next slide, please.

So, to give a brief background, the Administrative Regulations of Title 24 include provisions where any local government agency, firm, or member of the public may petition for the proposal, adoption, amendment, or repeal of any building standard in Title 24.

The Town of Truckee and their local working group submitted a petition to the 2019 Energy Code solar PV requirement. Its members include Nevada, Sierra, Placer, and Mono counties, and also the Town of Mammoth Lakes.

Truckee and the working group acknowledges the CEC’s efforts to reduce greenhouse gas emissions and promote PV systems, however they are concerned that high snow loads for some of their building sites make compliance with the PV requirement impossible.

Truckee, and other parts of California that are declared snow areas, are required to have studies based on historical weather data, that they rely on to calculate ground snow loads for each building parcel. This ground snow load establishes the building design requirements for snow.

The petition states that many building sites
located in the high Sierras have building design snow loads that are greater than what PV panels are currently rated to withstand, and that requiring PV would be in conflict with the structural design requirements of the California Building Code. Truckee is concerned that installing PV would result in substantial damage and PV warranties would be voided. Some building sites in snow country have ground snow loads greater than 500 lbs/ft².

The petition seeks an exception to the 2019 Energy Code PV requirement for these building sites where design snow loads can’t be met. Next slide, please.

The California Building Code and the California Residential Code both require all PV system components, including the panels and attachments, to structurally withstand all applicable loads. Design snow loads, for both codes, must be determined in accordance with the American Society of Civil Engineers (ASCE) Standard 7-16, Chapter 7 for Snow Loads.

Staff sought support from the solar industry to review the petition, and also received assistance from the Division of State Architect in understanding Standard 7-16. Standard 7-16, Chapter 7 uses the ground snow load, along with other site-specific variables, to determine the design load requirements for the PV system. It also includes
substantial design considerations that are applicable to snow loads.

The highest rated PV panels currently have a design load rating of 125 lbs/ft² or less. Next slide, please.

Staff finds that all pertinent requirements of the Energy Code, California Building Code, and the California Residential Code should be met in as many newly constructed homes as achievable. Staff finds that based on the Standard 7-16 method, whether PV systems can be safely installed depend heavily on site-specific conditions. And builders, their designers and engineers, need to address issues under their control to meet snow load structural requirements such as the location of the panels on the roof, the slope of the roof and panels, and using installation practices that would make PV systems more resilient to snow loads.

The local enforcement agency should take care to ensure that practical approaches occur to design homes that facilitate the installation of solar PV, if at all possible.

However, staff also finds that regardless of best effort design, there will be cases where it is not possible to meet structural requirements due to the extreme ground snow loads of some sites therefore not being able to comply
with building and residential code. Staff confirmed this by performing Standard 7-16 calculations, considering the current 125 lb/sf panel rating, and using assumptions favorable to the installation of PV. Results show that ground snow loads that would cause PV panels to fail, are within range of those ground snow loads in the high Sierras. Next slide, please.

Staff documented its review and findings as discussed in the previous slides, in a Notice of Preliminary Conclusions, and posted it to the CEC’s website for public comment. Twelve public comments were received from local stakeholders, residents and the solar industry. Most of the comments received were in support of staff’s recommendation. Many stakeholders shared positive stories of successful PV installations in snow country, but acknowledged that there will be a few exceptions where the snow load is just too much.

There were also a few suggestions for the Notice to provide clarification. Staff responded by revising the Notice into a Final Conclusions document that incorporates and addresses the comments. Next slide, please.

With that, staff recommends approval of the resolution confirming that the solar PV requirement do not apply to newly constructed low-rise residential buildings, where such systems are unable to comply with the snow load.
structural requirements of the California Building Code and California Residential Code.

This concludes my presentation. Mr. Chalmers and I are here to answer any questions. Thank you.

CHAIR HOCHSCHILD: Thank you.

Are there any public comments on this item, Madam Public Advisor?

MS. GALLARDO: Yes, this is Noemi Gallardo, Public Advisor. We have three people on the line. We will start with Darcey Messner from the Town of Truckee.

And Darcey, if you could please spell your name before speaking, your line is now open. You may begin.

MS. MESSNER: Yes, D-a-r-c-e-y M-e-s-s-n-e-r.

Good morning, Commissioners, thank you for considering our petition for high snow load exemptions from the 2019 Energy Code solar PV requirements. The Town of Truckee submitted this petition on behalf of our local building working group, including our member jurisdictions Nevada County, Placer County, Town of Mammoth Lakes, Mono County and Sierra County. The exemption would be of relevance to all of California high snow load jurisdictions.

As you are likely aware, this year Nevada mountain range has the highest snow loads in the continental United States. Even after reducing the ground...
snow load per ASCE 716 using all appropriate roof snow load
factors the design snow loads for many projects are still
higher than the capacity of available solar modules and
typical mounting hardware. This presents concerns
regarding potential failures and conflicts with California
Building Code requirements.

We are pleased with the final version of the
CEC’s Notice. It outlines the exemption process clearly
and addresses the various comments received during the
comment process. It's important to note that the extent of
the exemption -- I’m sorry -- the intent of the exemption
is to mitigate solar PV system failures, not to avoid
addressing energy sustainability. In that vein, the Town
of Truckee is considering a REACH code with offset
requirements for those projects that request and qualify
for the solar PV exemption.

We would like to thank the Town of Truckee
Engineers Association, and in particular Rick Fitzgerald,
Paul Laudenswagger (phonetic) and Rocky Woods, for their
valuable input and structural engineering expertise
throughout the process.

We look forward to continuing to work closely
with the California Energy Commission and the California
Building Standards Commission and appreciate your input and
consideration of this matter.
I'm happy to answer any questions, thank you.

MS. GALLARDO: Thank you, Darcey.

Next, we have Mark Dixon. And Mark, I’d remind you to please spell your name and indicate your affiliation, if you have one. Mark, your line is open, you may begin.

MR. DICKSON: Good morning, Commissioners. My name is Mark Dickson, M-a-r-k D-i-c-k-o-n. And I am the owner of Simple Power Solar, a local solar provider up in the Lake Tahoe and Truckee area. We’ve been installing systems up there for about seven years now. And while we admit in the very beginning, you know, there were some learning steps to figure out how to do it and deal with the snow conditions, we feel that we -- you know, in the year since we’ve worked directly with solar manufacturers, the module manufacturers and the racking manufacturers to come up with design methods and equipment that can sustain most of the situations up there in snow country.

Admittedly, there still are some situations where we cannot install solar. Some of those photos that were in the presentation were of the flat roof, and of course snow just piles on top. But as long as they are on a pitched roof, and there’s places for the snow to shed, as you all know solar modules are a slippery surface and the snow slides right off. So, in that case the solar modules are,
in fact, reducing the snow those on some of those roofs.

And I guess in closing, I'd just like to say that also we are -- all of our systems are from custom engineers required to have an engineering stamp of approval. We do use a local engineer in Lake Tahoe that is familiar with the snow region up there. So, they are looking at every single one of our designs and giving it the thumbs up or thumbs down. So, we feel that that liability should fall back on to that engineer, whether they approve it or not, not necessarily the building department.

And I guess furthermore we'd just like to say, as the PUC provides the mandate for solar, the more holes that are kind of punched into the mandate, you know the slower it is. And we're going to achieve our goals here as the state, so Simple Power does stand behind certain exemptions. But not a blanket exemption across the whole board up there. We'd like to have each of these projects taken into consideration, specifically on their condition,

Thank you.

CHAIR HOCHSCHILD: Thank you.

MS. GALLARDO: All right, next is Seth Kielas. If you could also please pronounce and spell your name for us, I may have gotten that wrong, and indicate your affiliation. Seth, your line is open, you may begin.

MR. KIELAS: Hi, Seth Kielas, S-e-t-h K-i-e-l-a-s-
I’m affiliated with Simple Power Solar and I’ve been a Truckee local for 19 years. And my original background was working in high-end custom residential construction in the area, so very familiar with, construction and design for the homes that are built up here. And I am familiar with a lot of the designers and engineers.

And I think you know, in general, I just want to you know focus on that angle in terms of I think we have a high concentration of talented architects and engineers in Truckee. And you know I think our concern in the overall climate goal is to make sure that everyone is doing their part. And I think that there's no question that we have talented designers that can plan for solar.

In my mind regulation, you know, often drives design. And just like you have regulations to provide egress for people to safely escape in a fire, the important mandate of solar for combatting climate change needs to be considered, designed and planned for. And we absolutely can plan for, and I think Mark spoke about this in general, of our experience up here in snow country. But also, I guess my comment here, really I want to focus on engineers and designers, speaking to them in snow country, can and should plan for solar. And if it is properly planned for, that solar can absolutely be a resource, you know, for distributed generation.
And I think a couple of items that staff had mentioned, you know choosing roof slopes and tubing panel (phonetic) locations that maximize the roof slope and allow the PV system to qualify as an unobstructed slippery surface, I can't emphasize that enough, by the time the house is built. You know, the planning for the solar, just like any other design or energy requirement needs to happen in advance and be planned for.

And like Mark mentioned, solar panels are made of metal and glass. And providing a design and a roof area that allows for the shedding of snow in a location that makes sense, you know, in terms of orientation to the sun is just common sense. Good planning and design, especially in our area. And then their other item, modifying roof designs, roof locations or PV panel mounting to avoid issues such as unnecessarily snow accumulation or snow sliding off the roof to undesirable locations on the site.

So, the second point, which is related to the first and just a general design element, is this already happens in snow country for all designs. You don't want snow shedding where it can hurt people. You don't want snow shedding in front of your garage. And so I guess I want to close by saying this mandate is super important and if we can continue to plan around it that's what we should be focusing on. So, thank you.
MS. GALLARDO: Thank you, Seth.

That was the last comment, Chair, so I’ll turn it back over to you.

CHAIR HOCHSCHILD: Okay, thank you.

Unless there are other Commissioner comments, let’s turn to Commissioner McAllister for comments on this item.

BOARD MEMBER MCALLISTER: So yeah, I have been following this. Obviously, this is a really great example of Commission staff rolling up their sleeves and taking a proactive approach, being advocates for our policies as we’ve sent them out. And focusing on getting results and making sure that any exemptions are well founded.

And so I want to thank all three of the commenters. Darcey, I did not write down your last name but from Truckee. Thank you very much for bringing this forward and Mark and Seth both, Mr. Dickson and Mr. Kielas, thanks very much. I appreciate your comments.

And absolutely agree, I mean with a really good design we can put solar on roofs. And you know a lot of folks up there in the hill country do want solar, and we need to create pathways to do it in a way that works and respects structural engineering requirements and then meets all the rest of the code.

So, I want to thank Cheng and the whole team,
also my advisor Bill Pennington. The Building Standards
Office really worked in a proactive and very constructive
and very positive way, with all the stakeholders and the
solar industry from the region. So really, I think this is
a great outcome and the process really has been a model for
how to get the right result. So, thanks Cheng, and the
whole team for that.

CHAIR HOCHSCHILD: Yeah.

BOARD MEMBER MCALLISTER: And if there's no other
comments -- I don't see any -- I’ll move Item 5.

CHAIR HOCHSCHILD: Thank you. Yeah, I would just
add I think this is an example of our process working
exactly as it should. So, thank you to the staff and all
of the stakeholders.

Thank you for making the move. Commissioner
Douglas, would you be willing to second?

BOARD MEMBER DOUGLAS: Yes, second.

CHAIR HOCHSCHILD: All right, all in favor say
aye.

Commissioner McAllister?

BOARD MEMBER MCALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.
CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

Let’s move on to Item 6, DOE-National Renewable Energy Laboratory.

MR. KONALA: Good Morning, Commissioners. My name is Sudhakar Konala. I am the Self-Generation Forecaster in the Demand Analysis Office of the Energy Assessments Division. Next slide, please.

I am presenting today seeking the approval of a contract with the National Renewable Energy Laboratory or NREL for $350,000. Under this project, NREL will develop a forecast of behind-the-meter Distributed Energy Resource adoption for emerging market segments in California.

Before I proceed, I just want to touch on what a Distributed Energy Resource or DER, is.

A DER refers to any device that produces or stores electricity while connected to the distributed system of the electricity grid. And behind-the-meter DER specifically refers to devices installed behind a utility customer's electrical meter. Examples of DEC include solar that you might see on a neighbor’s roof, or a battery system, which can keep the lights on when the power goes out.

Modeling DERs is an important component of the
Commission's Energy Demand Forecast, which is used in long-term energy planning.

Our current forecast projects that behind-the-meter DERs, including technologies like solar and energy storage, will account for over 17 percent of the state’s electricity generation by the year 2030. Next slide, please.

The purpose of this contract is to enhance the Energy Commission's ability to forecast behind-the-meter distributed energy resource (DER) adoption. And more accurate forecasts of DER adoption benefit all of California.

DER forecasts are often used to inform electricity system resource planning, since DERs can significantly alter the shape of electrical load. They can impact both the timing and magnitude of peak electricity demand. DERs can significantly alter the shape of electrical load, for example. So accurate projections of DERs are important for resource adequacy planning, to ensure that California has sufficient generation when and where it is needed.

DER forecasts also help in assessing progress towards meeting the state’s clean energy and decarbonization goals, like SB 100. Next slide, please.

The project will look at DER growth in emerging
market segments, where modeling adoption is difficult. The segments include solar in the multifamily residential sector and behind-the-meter energy storage.

For multifamily residential sector, the current rate of solar adoption is quite low. And it is difficult to model adoption in this market, because occupants in the buildings often do not have the authority to install solar, and data is limited. However, the state’s new building efficiency standards require solar on most new residential buildings of three floors or less, are expected to drive growth in this market.

In terms of behind-the-meter energy storage, adoption rates are also low, primarily due to the high cost of storage. However, adoption is expected to rise rapidly. This can already be seen by looking at applications for rebate funding.

For example, in the fall of 2020, reservations for California’s self-generation incentive program were 470 MW, up nearly 7 times from the previous year.

Finally, the conditions and policies within the state, such as increased Public Safety Power Shutoffs by utilities, and changes to rates structures and incentive schemes like Net Energy Metering, are also expected to further promote storage adoption. Next slide, please.

So, the key outputs of this project will include
a forecast of behind-the-meter solar adoption in multifamily and/or renter-occupied homes. And a forecast of behind-the-meter energy storage adoption in all customer segments.

The forecast will be completed using the “California-adapted” version of NREL’s distributed generation market adoption model or dGen. For this project, the California-adapted model will receive important new updates including a new storage module that improves the model’s ability to forecast energy storage.

The results of the forecast are expected to be ready for the 2022 IERP update.

NREL will also provide an updated version of the dGen model, which will include new open-source code and the new storage module, as well as any updates made to the model during this agreement.

Finally, NREL will also provide support and training to staff on how to use dGen, allowing staff to perform independent model runs. Next slide, please.

Given the importance of forecasting DER adoption for the Energy Commission’s Energy Demand Forecast, and for statewide energy planning, and given that this project with NREL would help improve the Commission’s ability to forecast behind-the-meter DER adoption staff recommends the approval of this agreement with NREL.
Thank you.

CHAIR HOCHSCHILD: Thank you, Sudhakar.

Madam Public Advisor, do we have public comment on Item 6?

MS. GALLARDO: This is Noemi Gallardo, Public Advisor. Yes, we do. We have one, so that is Kevin McCabe. Kevin, please spell your name and state your affiliation. Your line is open, you may begin.

MR. MCCABE: Great. Thank you, and yes my name is Kevin McCabe, K-e-v-i-n M-c-C-a-b-e. I'm an energy analyst with the National Renewable Energy Laboratory or NREL.

First and foremost, I just want to thank the Commission for considering this item. I also want to thank Sudhakar for his continued support and direction for our partnership with the Commission. Over the past several years actually, and I don't know you mentioned it, but we did have a previous agreement between NREL and the Commission that allowed us to further develop the dGen model. Specifically, to model the State of California, in a way that we had never done previously.

And in this previous agreement started several years ago, and in the years since the dGen team here at NREL has yielded many requests from other states utilities and commissions. You know, for example, we've worked with...
the Los Angeles Department of Water and Power, the Orlando Utilities Commission just to name a couple.

In our initial work with the SEC, the Commission paved the way for these types of partnerships to flourish, as they have. And so now we're very excited to have this new proposal in the works as it builds on much of what was developed in the previous agreement.

And separately, our team at NREL has grown in size and experience over the last few years, so we're especially excited to have the opportunity to apply our newfound knowledge on several of the topics at hand that Sudhakar outlined, namely the analysis and modeling of multifamily and renter occupied buildings. And especially distributed or behind-the-meter storage.

As we all know, these are important topics in the broader grid of the future. So, these are areas of research that we believe are important to understand, not only in the State of California, but nationwide and we hope to be able to establish that and really continues this two-way dialogue and information sharing with the Commission to better develop methods to analyze these topics and apply lessons learned to improve the well-being of individuals in the State of California.

So, thank you once again for your time and consideration.
CHAIR HOCHSCHILD: Thank you. And Kevin, let me thank you for all your work with your colleagues at NREL.

You know NREL’s work, I think, is more important than ever now with President Biden adapting a 100 percent renewable energy goal for the country by 2035. So, your team’s analysis is really needed now more than ever on these kinds of items.

I don't believe we have any more public comment, right? So, let’s move to Commissioner discussion. Why don’t we go to Commissioner McAllister?

BOARD MEMBER MCALLISTER: Great. Well, thanks Sudhakar, for your leadership over the years here. And to Mr. McCabe as well, thank you for all the work. I will just echo what the Chair just said. I mean NREL is a national treasure and has been for decades. And we're really glad to have a formal relationship to work on this issue.

And I would just want to underscore the importance of it for the forecast, but also the potential sort of corollary benefits of understanding these resources in more building sectors. And in particular the load flexibility in behind-the-meter storage as a resource to enhance reliability and assist the decarbonization effort. I think there's a lot of opportunity in other parts of what the Commission does, including the Building Code and load

CALIFORNIA REPORTING, LLC
229 Napa Street, Rodeo, California 94572 (510) 224-4476
management standards. And this could provide a healthy foundation for other efforts as well, like those.

So, I’m very optimistic about this and very much in support. And yeah, I want to just encourage adoption. And thanks to Sudhakar and the NREL team as well.

CHAIR HOCHSCHILD: Okay. Commissioner Gunda, did you want to add anything to this item?

BOARD MEMBER GUNDA: Yeah, thank you, Chair. Yes, I just want to reiterate what Commissioner McAllister said. This is vitally important work as we think through the forecast and the reliability and DERs have an incredible role to play, as we think through the scaling of the clean energy resources, and ensuring reliability moving forward that roll both in DERs, especially the storage side.

And so I also want to thank Sudhakar for your vigor and thoughtfulness to work that you’ve brought over the last couple years to the self-gen forecasting.

I had the opportunity to closely work with you over the last couple years, so I’d just congratulate you for your good work. And thank you, Kevin. We look forward to this continued relationship and benefiting the state and the country as a whole. I as well, am very much supportive of this item.

CHAIR HOCHSCHILD: Okay, thank you.

Commissioner McAllister, unless there’s other
Commissioner comments -- I don’t see any -- Commissioner McAllister, are you willing to make the motion?

BOARD MEMBER MCALLISTER: Yes, I will move Item 7.

CHAIR HOCHSCHILD: Okay. Commissioner Gunda --

BOARD MEMBER MCALLISTER: Oh, I’m sorry --

CHAIR HOCHSCHILD: Is that Item 6 or 7? That’s Item 6.

BOARD MEMBER MONAHAN: It’s 6.


CHAIR HOCHSCHILD: Thank you. Commissioner Gunda, would you be willing to second that?

BOARD MEMBER GUNDA: Yes, I second that.

CHAIR HOCHSCHILD: Commissioner Douglas, would you be willing to second?

BOARD MEMBER DOUGLAS: Yes, second.

CHAIR HOCHSCHILD: Okay. All in favor say aye, Commissioner McAllister?

BOARD MEMBER MCALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?
BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously. Congratulations to everybody.

Let’s turn now to Item 7, National Technology & Engineering Solutions of Sandia, LLC.

MR. GRAVELY: Good morning, Chair Hochschild and Commissioners, I’m Mike Gravely and Office Manager of the Energy Research and Development Division.

Today I bring for your consideration a proposed Memorandum of Understanding between the DOE Sandia National Laboratory and the CEC. The National Technology & Engineering Solutions of Sandia, LLC is the contract organization that manages Sandia for DOE.

This MOU is a zero cost MOU where each party will cover their own costs and no funding will transpire between the parties for the execution or management of this MOU.

Next slide, please.

Energy storage is a big part of the State’s conversion to a clean, carbon free future. The state currently has an estimated 2500 MWs of energy storage systems installed or approved to be installed and the future need is expected to grow substantially.

For example, the CPUC Integrated Energy Resource Plan is estimating the state will need almost 10,000 MWs of
energy storage by 2030. And the recently released SB 100
plan produced by the CEC and other state agencies is
estimating the need for between 20,000 and 35,000 MWs of
energy storage by 2045. Of the currently approved 2,500
MWs, over 90 percent of those systems are based on one
technology -- Lithium Ion.

Given this rapidly growing need for California to
have for energy storage, the research that DOE and CEC will
complete is even more important to ensure California can
meet the needs of the state with a portfolio of options
that provides the potential for higher performance,
improved safety, and lower costs. Next chart.

The CEC and DOE have a long history of supporting
and evaluating and field testing emerging energy storage
technologies. This slide illustrates the full spectrum of
energy storage technologies that both the CEC and DOE have
evaluated and supported in the past. This includes large
systems like pumped hydro and compressed air, utility scale
systems like lithium ion, advanced batteries, flow
batteries, and flywheel systems and smaller systems for
commercial and residential applications.

The variety of technology solutions will help
fill the various applications for energy storage including
at the customer site, along the distribution system, and to
support the challenges of the transmission systems. Next
In 2020, the CEC EPIC program awarded the largest number of energy storage grants in the history of the program. These are innovative technologies and concepts that offer California and the nation new solutions that are safer to operate, provide a longer life, do not degrade their performance over time and have a lower cost.

Here are a few examples based on the goals and objectives provided by these vendors in their proposals that were approved by the CEC. A new combination of materials and manufacturing processes that are expected to eliminate the challenge of thermal runaway that has seen larger energy storage systems catch fire and burn up worldwide. Advanced energy storage systems with life expectancy of 10-20-year range where today that range is in the 5-7 years. A projected price point of less than half the cost of systems today.

And finally, as another example a larger utility grade system. Several of these technology providers are projecting a performance that will be a price point that will deliver 4 days of energy storage capability in the future, for what it cost for 4 hours just a few years ago.

This MOU is coming at a very exciting time.

Under the MOU, DOE will provide the CEC access to their highly experienced technical staff who have firsthand
experience running energy storage testing and system commissioning's, overseeing field operational challenges, and a deep knowledge of the capabilities of the all-different energy storage technologies.

The CEC will provide DOE access to a wide range of technology demonstrations that can be used to educate other states as the nation develops a clean energy and zero carbon future as advertised under the new administration. Working together, DOE and the CEC can ensure the energy storage technologies that California and the nation needs in the future for our clean, zero carbon future will be available, meet the performance required, and be very cost effective. Next chart, please

I am requesting approval of Item 7 to allow these two parties to sign and execute the proposed MOU. I understand we have two speakers from DOE who would like to comment on this. The first is Dr. Imre Gyuk. He is the Director of Energy Storage Research, the DOE Headquarters Office of Electricity. The second is Daniel Borneo, an Engineering Program Lead for Energy Storage at Sandia National Lab.

I’ll turn it back to you. I’m here to answer any questions I can, sir.

CHAIR HOCHSCHILD: Thank you, Mike.

Madam Public Advisor do we have anyone in
addition to those two speakers, if not let’s begin with
those two.

MS. GALLARDO: It looks like we may have one
more, but let’s start with Imre from the Department of
Energy.

So Imre, please a reminder to spell your name and
state your affiliation. Your line is open, you may begin.

MR. GYUK: Do you patch me through on the Zoom or
do I -- exactly.

CHAIR HOCHSCHILD: Go ahead.

MS. GALLARDO: Imre, we can hear you. Speak
through the phone, Imre, on the Verizon line.

MR. GYUK: I just muted my Zoom. Okay, so my
name is Imre Gyuk, I-m-r-e G-y-u-k. And I direct the
Energy Storage Program at the Office of Electricity in the
Department of Energy. And I have done so for quite a
while. In fact, since before almost anyone realized that
storage would become an essential component of the grid.

In California, of course, they did realize this.
And one of the things we did early on, was to pass an MOU
between CEC and DOE. In fact, the first project we did
jointly was one on frequency regulation. And that DEMO
project eventually led to FERC making a regulation on
energy storage and frequency regulation becoming the first
commercially viable application for energy storage.
Since then, DOE has supported many storage projects in California. And, of course, even more projects have been funded by the California Energy Commission.

Much has happened since California, since then. California has had its famous storage mandate and projects of increasing size have been realized. Similarly, our federal program has grown very substantially.

Throughout we have maintained contact with the California Energy Commission, Mike Gravely personally, and through projects. And we would now like to formalize this relationship in the MOU.

The DOE program through Sandia has many things that it can offer California, particularly our hands-on experience in installing, commissioning and analyzing projects. It’s considerable effort in analytics to value projects. And also its experience in safety and its research on safety issues.

I should also mention that we have a considerable number of projects with tribal entities going on, and we would like to connect on that basis as well. And upcoming issues such as social equity. So we very much look forward to working, and rather to continue working with CEC through this MOU.

And now, then Borneo who will be bearing the brunt of the actual work.
MS. GALLARDO: Thank you, Imre, for keying up Daniel.

So Daniel you are next, a reminder to please spell your name and state your affiliation. We will open up your line shortly. Your line is open, Daniel, you may begin.

MR. BORNEO: Good morning, and thank you for allowing me to speak today. My name is Daniel Borneo, D-a-n-i-e-l B-o-r-n-e-o, like the “island of.”

Just I've been working with Mike for 14 years. He was probably the first person I met when I joined the Energy Storage Group here at Sandia National Labs. Much has changed since we first started off with the project that Imre mentioned with the frequency regulation flywheel.

But much is left to do. We still need to worry about the costs. We need to worry about the reliability. We need to worry about the safety, the applications that we can use energy storage for. And more so, we need to look for different technologies for energy storage other than battery.

California is the leading edge. I hate say it, but coming from the third world state of New Mexico I just sit in awe at the amount of money that California seems to come up with for renewable energy projects and energy storage projects. Without California, I do not think we
would be as far along as we are in the energy storage industry. We are out of our infancy now in heading into our adolescence, and I think a large part of that is due to the efforts of California.

This partnership with California, is a win-win situation for both. As Imre said we have technical capability with within the labs, but being in a lab and being a government sponsored entity, a lot of people are not willing to allow us to kick the tires of their projects. But working with California, on the other hand, will provide us the opportunity to see projects that California is funding up close and personal and be able to learn from them. And see how are they working and how to improve them.

So I’m looking forward, as always, to working with Mike. We've been together for 14 years and until we retire, I guess we still will be together. Thank you.

MS. GALLARDO: All right, thank you. And next up we have one more commenter, Ranji George. And Ranji, please a reminder to spell your name, indicate your affiliation, and your line is now open. You may begin.

MR. GEORGE: Hello, my name is Ranji George. I am from the new nonprofit called the Coalition for Advanced ZEV. I am as a way of background -- I was a scientist at the South Coast AQMD in the Technology Advancement Office.
And I had the privilege of being the lead scientist in the 1998 ARB ZEV regulations. And four years later under Dr. Alan Lloyd we launched the hydrogen and fuel cell technology. We were the first in the state, in the country, to demonstrate that hydrogen is safe and can be safely handled. And that's how -- and demonstrated the feasibility of hydrogen fuel cells as a very viable zero emission technology.

My comment here is I want to thank the DOE and the CEC for the work they have put on solar and wind and into energy storage and brought up broadening out from lithium ion batteries. Please, have you considered hydrogen? The whole world is now looking into hydrogen. Others, Europe Japan, Korea, they're going to spend billions embracing hydrogen technology. But I'm afraid I am disappointed that California has lagged so much behind that. And we should. Like Caltech and NREL both have pointed out that hydrogen can be very cost effective for longer days of shutdown of electricity.

So I would appreciate both CEC and DEO to fully embrace hydrogen as the alternative storage. In fact, Mitsubishi, the big company Mitsubishi, is looking at hydrogen storage for LADWP. There's a project on going online as we speak. I mean they are designing it. So I would agree, I urge you to look at hydrogen as a viable
alternative for energy storage. Thank you.

CHAIR HOCHSCHILD: Thank you.

Is that everybody, Madam Public Advisor?

MS. GALLARDO: Yes, that was the last commenter, no more. Thank you.

CHAIR HOCHSCHILD: Okay, well thank you all.

And let me just first of all say that with Vice Chair Scott moving on to the Department of the Interior, I will be taking over as the Lead on R&D. I’ve asked Commissioner McAllister to be second on that with me and he’s agreed to do that. And I’m grateful for him for stepping up, yet again on these issues.

I’ll just say that though energy storage is fundamental to our future, we're going to be doing something historic this year. We're doing a tenfold increase in utility scale energy storage for this year in 2021. And the PUC is working hard on that.

We have put in, you know in excess of $100 million in energy storage at the Energy Commission with every single chemistry you can imagine from benasium (phonetic) to iron-chromium to lithium ion and so forth. And these partnerships matter a great deal with the National Labs, with Sandia and others. And I want to recognize in particular Mike Gravely’s terrific work on this issue. And I'm in full support of this item.
Are there other Commissioners wishing to make a comment on this? If not, Commissioner McAllister, would you be willing to move Item 7?

BOARD MEMBER McALLISTER: Yes, move Item 7.

CHAIR HOCHSCHILD: Okay. Commissioner Monahan, would you be willing to second?

BOARD MEMBER MONAHAN: I second.

CHAIR HOCHSCHILD: Okay. All in favor say aye, Commissioner McAllister?

BOARD MEMBER McALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously.

Colleagues when I suggest we should do, actually I think we can get through one more item and then break for lunch. So let's move on to Item 8, Advanced Plug Load and Smart Exterior Lighting.

MR. VILLANUEVA: Greetings Chair and Commissioners. My name is Felix Villanueva and I am a utility engineer with the Energy, Research and Development
Division. Today I will provide a presentation on the two recommended awards from our Advanced Plug Load and Smart Exterior Lighting Systems solicitation. Next slide, please.

Plug loads are electric devices that are typically plugged into a building’s power outlet. These devices include TVs, computers, electronic devices, and appliances. Currently, it is estimated that a typical residential building has more than 50 devices and commercial buildings have hundreds.

Plug loads are one of the fastest growing categories of energy use. This slide shows that plug loads account for 40 percent of California’s residential electricity consumption and 27 percent of California’s commercial electricity consumption. As more and more devices are brought into and used in buildings, the total energy use for plug loads is expected to increase, because these devices are generally not monitored or controlled or covered by codes and standards. As a result, many of these are left on 24/7.

The objective of the plug load projects recommended today is to control energy use from these devices. Next slide, please.

The benefits of the recommended projects include: reduce plug load energy use and costs, which reduces
operating costs for building occupants. Integrate advanced plug load controls with existing building energy management systems to provide automated controls to maximize energy savings and provide electric load control. Inform future codes and standards by providing data on energy use, savings potential and cost effectiveness.

CEC’s past research on plug loads helped informed code changes associated with external power supplies, battery chargers, televisions and personal computers. and these are expected to save Californians an estimated $10 billion by 2025 with appliance turnover.

I will now discuss the two recommended awardees. Next slide, please.

Item 8a is this project with the Regents of the University of California, on behalf of the San Diego Campus will integrate an advanced smart plug load control called BertBrain with the campus’s existing building energy management system.

BertBrain controls will be installed in plug load equipment such as TV displays, computer workstations, large printers, water coolers, networking equipment, multifunctional devices, vending machines, monitors, copiers, and coffee makers. These controls will be integrated with the campus’s existing Johnson Controls energy management system or EMS. The EMS can control the
operating schedule, detect operation problems and reduce load as needed during grid events.

These controls will be tested in 10 campus buildings and private office buildings in San Diego. The project will be evaluated to determine performance, energy and operational savings, cost effectiveness and predictability of the reducing load during demand response events. Next slide, please.

Item 8b. This project with the California Energy Alliance will assess potential plug load devices for appliance codes and standards consideration. One of the most effective ways to reduce plug load energy use is through the adoption of device-level appliance standards at the state level.

California Energy Alliance will partner with UC Davis’s California Lighting Technology Center and UC Irvine’s Calplug Research Center to identify plug load devices that are not covered by any standards. And to determine those with the most potential for state-level codes and standards consideration based on cost-effectiveness.

Potential devices that will be tested include commercial laboratory equipment such as centrifuges, microscopes, and incubators; commercial office equipment such as printers and multifunctional devices; and
residential networking equipment such as modems, routers, and gateways.

Test procedures will be developed to quantify energy use and performance attributes for compliance purposes. The test will determine energy consumption in different operating modes.

The research team will analyze the data and determine specific codes and standards opportunities and model their impacts to determine statewide energy and cost savings and related impacts, if applicable. Next slide, please.

So staff today recommends approval of these awards with Regents of University of California, on behalf of the San Diego Campus; and California Energy Alliance as well as staff’s determination that this action is exempt from CEQA on both projects.

Thank you for your time and I am available to answer any questions you may have. Also, I believe with me today is California Energy Alliance’s Executive Director Josh Dean. I believe he would like to provide some remarks.

Thank You.

CHAIR HOCHSCHILD: Thank you.

Madam Public Advisor, how many public comments do we have on this item?

MS. GALLARDO: We have two comments for this
CHAIR HOCHSCHILD: Okay.

MS. GALLARDO: So we will -- since Felix teed up the California Energy Alliance we’ll have Josh Dean go first. Josh, a reminder to spell your name and we will open up your line. So you can begin, Josh. It is open.

MR. DEAN: Thank you.

Good morning, Commissioners, my name is Josh Dean, J-o-s-h D-e-a-n. And I’m the Executive Director for the California Energy Alliance. On behalf of the Alliance I wanted to just say thank you to the Energy Commission for funding this very important issue on plug loads.

Additionally, the Alliance would like to thank the Commissioners for considering approving this grant agreement today.

As noted in Felix’s presentation plug loads are one of the fastest growing categories of energy use in residential and commercial buildings. And, with more and more devices being brought in to and used in buildings it’s expected that the total energy use for plug loads will continue to increase.

The California Energy Alliance is excited to be partnering with UC Davis’s California Lighting Technology Center as well as UC Irvine California Plug Load Center, on this project to evaluate, test and develop a set of codes
and standards recommendations for future appliance standards rulemakings regarding commercial office equipment laboratory equipment and residential networking equipment.

So I just wanted to say thank you again, Commissioners, for considering the proposal and we look forward to working with Energy Commission on this grant opportunity. Thanks.

MS. GALLARDO: Thank you. That was -- so this is Noemi Gallardo, Public Advisor. We did have a second person, but it looks like he has disconnected. So that was the last person, Chair, that we have.

CHAIR HOCHSCHILD: Okay, let’s go to Commissioner discussion, starting with Commissioner McAllister.

BOARD MEMBER MCALLISTER: Yeah, so just very quickly, because I know we haven't kind of hard stop here at noon. But really excited about this, the plug loads are huge as Felix laid out and it's very exciting to be working with existing expertise, the nodes of expertise at UC Davis and UC Irvine. I’m really happy to be funding the California Energy Alliance as well, so thanks to Josh for that.

This is relevant, not only for the efficiency piece of our authority around appliance standards, but also the load flexibility piece. Which actually arguably is more expansive, because it doesn't have federal preemption
issues and so I'm pretty excited about laying some
groundwork for the staff’s work around SB 49 and that load
flexibility work. But really looking forward to getting
this moving, so thank you.

CHAIR HOCHSCHILD: Great. Unless there's
Commissioner discussion, Commissioner McAllister, would you
be willing to make the motion?

BOARD MEMBER MCALLISTER: Yes, I will move Item 8.

CHAIR HOCHSCHILD: Commissioner Douglas, would
you be willing to second?

BOARD MEMBER DOUGLAS: Yes, second.

CHAIR HOCHSCHILD: Okay. All in favor say aye,
Commissioner McAllister?

BOARD MEMBER MCALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously. Thank you to the staff.

Let’s break now and reconvene at 1:00 o’clock.

Thanks everybody.
MS. GALLARDO: We are in a break of the California Energy Commission’s business meeting. We’ll resume at 1:00 p.m. Again, the California Energy Commission is in a break and will resume at 1:00 p.m. for an (indiscernible) business meeting.

(Off the record at 12:01 p.m.)

(On the record at 1:01 p.m.)

CHAIR HOCHSCHILD: We’re on Item 9 now?

MS. GALLARDO: Yes, that is correct.

BOARD MEMBER GUNDA: Good afternoon, me I’m here.

MS. GALLARDO: Thank you, Commissioner Gunda.

CHAIR HOCHSCHILD: Okay, I think I’m ready when you are. I see all the Commission except for Commissioner Monahan, right?

MS. GALLARDO: That’s correct. Well, she’s coming through right now.

CHAIR HOCHSCHILD: Great, okay so whenever you’re ready Noemi.

MS. GALLARDO: All right, we’ll have Eleanor present. I’ll spotlight you in a minute. Go ahead, Eleanor.

MS. OLIVER: Okay. So good afternoon, my name is Eleanor Oliver and today I am here to request approval of 6 awards for $450,000 each, totaling $2.7 million from the EPIC’s small grant program, the CalSEED Initiative.
Since the start of this small grants program in 2017, CalSEED has so far awarded a total of 71 awards to clean energy start-ups with innovative technologies. From the completion of awarded projects, those start-ups have been able to achieve a total of $65.8 million in various types of follow-on funding. We can also see the growth of these companies over the course of the program with an increased number of career opportunities created, ownership rights, and successful small-scale validations of the unique technologies. Next slide.

In reflection of the CEC’s commitment for diversity, CalSEED actively conducts outreach to ensure that the applicant pool is representative of all Californians, including women, low-income entrepreneurs, veterans, communities of color, and other underrepresented groups. Next slide.

As you know, CalSEED provides small grants to entrepreneurs with early-stage clean energy technologies. Applicants first apply for a $150,000 Concept Award, which also comes with access to technical resources and business development expertise. Those that successfully receive a Concept Award are then eligible to compete for a $450,000 additional to further develop their innovation. The awards under consideration today are the third round of those
The Prototype Awards are evaluated through a Business Plan Competition and awarded to CalSEED Concept Awardees who have shown the greatest technical and commercial potential. After being granted a Concept Award, recipients went through a CalSEED-sponsored curriculum to complete a written business case package and prepare a technology business plan pitch. They pitched their case to a panel of judges, who then evaluated both the written portion and virtual pitch for the technical potential, environmental and social impact, business strategy, and the expertise and experience of the team.

The third Prototype Award Business Plan Competition took place in November 2020 and the companies with the top six scores are presented here for your consideration today. Next slide.

The six companies with the highest scores are Takachar, Icarus RT, Rejoule, EnZinc, SiLi-ion, and Antora Energy. Next slide.

The first company is Takachar, who is developing a low-cost mobile reactor unit that can turn small pockets of crops and forest biomass into commercial products such as fuel, fertilizer, and other high-performance filtration media for water or air. This portable system of biomass conversion can reduce normal waste transportation and
logistical costs by up to 70 percent while also allowing
the waste to be turned into viable bioproducts for
additional revenue.

During the Concept Award, Takachar validated the
performance and output of bioproducts from an initial
prototype at lab scale. With the prototype award, the
project will conduct a field-scale demonstration of the
prototype at three different biomass locations and have
partnered with some key stakeholders, PG&E and Orange
County Water District, to support independent testing of
output bioproduct samples. Next slide.

Next is Icarus RT. This team is developing a
hybrid solar thermal system that can be retrofitted on the
back of readily available or existing PV panels. This
system is designed to absorb low-grade waste heat,
improving panel cooling, and charging a thermal battery
without consuming solar power as traditional batteries do.

This low-cost dispatchable system can generate
on-demand carbon-free energy by utilizing their novel
Organic Rankine Cycle method. A cycle method that utilizes
organic fluid and nanotechnology to convert thermal waste
heat into usable power for peak demand while increasing PV
panels' performance and life span.

During the Concept Award, this team was able to
develop key prototype components for the system, which
included the heat extractors, energy storage system, and
the control and monitoring platform. If awarded, the
project will combine these newly develop prototype
components with their novel Organic Rankine Cycle method
and collect data from a real-world application. Next
slide.

Here is EnZinc. The EnZinc Team is looking to
advance their 3D zinc microstructure sponge technology that
can be used in a wide array of batteries. This innovation
uses a safe recyclable metal that inherently can achieve
high power output and energy density even with an increased
number of cycles, making it ideal for batteries. By using
alternative batteries with this core metal micro-sponge,
such as nickel batteries for transportation or grid
applications, silver batteries for military and space
application, or even magnesium for overall inexpensive
batteries, we are able to get rid of commonly used toxic
materials and provide a lightweight lower-cost battery with
equal life span and higher power.

During the Concept Award, EnZinc was able to
fabricate and define their novel zinc sponge anodes with
battery cells on a lab scale. With the Prototype Award,
the project will design and demonstrate their novel anode
within a commercial size nickel-zinc battery to validated
performance. The project team will also integrate and
field test the prototype with an e-bike manufacturer. Next slide.

Our fourth company is Rejoule. They are developing a multifaceted portable battery diagnostic platform. This technology is a fast and accurate battery management system that measures critical health and charge metrics on large-format lithium battery packs without the need for disassembly.

This innovation uses a combination of cutting-edge electrochemical measurement applications, and a collection of real-world aging data to give instant grade of health and charge. The application of this system will give a much-needed insight into how batteries degrade, improve operational efficiency, and increase life expectancy. ReJoule’s custom battery management system provides unprecedented analytics on a battery’s health to enhance the performance of second-life batteries and enable leaner, long-lasting storage systems.

During the Concept Award, the Rejoule team was able to build and test the concept of the system — validating the core grading functionality of the technology. With the Prototype Award, the project will continue the development of the battery management system by expanding the testing capabilities to include battery packs with higher voltages and capacities. Next slide.
Next is SiLi-ion. They are advancing the development of their silicon-carbon composite that can be a "drop-in" additive to replace graphite currently used in commercial Li-ion battery anodes. Since this technology is comprised of silicon and carbon, both abundant and sustainable materials, this replacement can lower the cost of batteries while enabling a boost in energy density without requiring any change to current battery manufacturing procedures.

Under the Concept Award, this team demonstrated their first functional lithium-ion battery using their novel silicon carbon additive and confirmed the increase in energy capacity. If awarded, they will transition from lab-scale to pilot-scale production of the silicon-carbon powder and will validate its performance in a high-capacity battery prototype. Next slide.

Finally, we have Antora Energy. They will be taking a solid-state approach to developing a low-cost thermal battery for grid-scale energy storage. Antora’s system uses a combination of low-cost raw materials that can be heated to high temperatures in combination with their unique high-efficiency thermo-photo-voltaic heat engine, to enable scalable long-duration energy storage at a fraction of the cost of lithium-ion batteries.

During the CalSEED Award, or the Concept Award,
sorry, the team designed and built the first fully operational prototype system. With the Prototype Award, the project will focus on improving the reliability of the thermo-PV under variable harsh environmental conditions to improve the performance of their system. Next slide.

We recommend approval of these 6 grant awards and adoption of staff’s findings that these projects are exempt from CEQA. Staff is available for questions. Thank you for your time.

CHAIR HOCHSCHILD: Thank you, Eleanor.

Madam Public Advisor, any public comment on Item 9?

MS. GALLARDO: Yes, we have five people wishing to speak on Item 5. (sic) We will begin with Joy Larson and Joy I remind you to please spell your name and state your affiliation. Your line is open. You may begin, Joy.

MS. LARSON: Thank you. My name is Joy Larson. That’s J-o-y L-a-r-s-o-n. I’m the Program Director for CalSEED at CalCEF Ventures, brand name New Energy Nexus. Thank you for the opportunity to comment today in support of the resolution for the 2020 CalSEED Prototype Awards.

For my comment, I really want to revisit the intention of these EPIC funding programs. You know, under normal circumstances this CalSEED grant can be a lifeline...
for early-stage innovations, especially for companies
working on these longer-term storage ideas. Technologies
at this early stage of development are typically too risky
for private funding, the amount of time and investment
that's needed for development and testing of some of these
clean energy ideas. And so the typical startup investors
are not generally interested.

These technologies tend to be very capital
intensive and often operate in more regulated markets. So
this funding is, under normal circumstances, very
important. And 2020 was a rough year for everyone. The
pandemic has affected all clean energy startups in a number
of ways.

For example, access to lab space has been limited
and supply chains for equipment have been disrupted. So
all the CalSEED companies that you see here, and that have
been awarded have become very lean. And have had to get
creative about how they do research and build their
businesses. We've also heard from awardees that they've
seen a slowdown in corporate investment and venture capital
is become more conservative.

So the intention of these grant programs under
EPIC is even more important. This grant money is critical
to keep the momentum going on these long-term energy goals.

This competition would not have been possible
without our partners at cleantech open and the technical advisory committee. Everyone transitioned to a virtual process in 2020, so a big shoutout to the people who brought their domain expertise in clean energy, entrepreneurship and social equity, who scored the business plans in the pitch competitions. The tech is really the group of people that is driving the rigor behind this entire program.

We’re also grateful to our colleagues at the CEC for their support of the process: Josh Croft, Eleanor Oliver, Michael Ferrera and Eric Stokes. This is a really exciting day and we look forward to continuing to work with these companies, thank you.

MS. GALLARDO: Thank you, Joy.

Next is Michael Burz. Michael, I’ll remind you to please spell your name and state your affiliation. And after him, it will be Kevin Kung. So Michael, your line is open, you may begin.

MR. BURZ: Thank you. Good afternoon, Commissioners. I’m Michael Burz, spelled M-i-c-h-a-e-l, Burz, that’s Bravo Uniform Romeo Zulu. And I’m the President and Co-Founder of EnZinc.

And I want to just reinforce what Joy said, is in both comments. One, it is a lifeline for us and the support given was terrific. So just in review we’re
developing a battery based on the common material zinc
using technology from the United States Naval Laboratory.
The battery is safe. It's recyclable. It's low cost and
high performance.

I'm speaking today from our engineering lab at
the Richmond Field Station University of California
Berkeley.

It was those CalSEED funds in Phase 1 that Joy
talked about, which helped us get here and put it in
operation. These funds allowed us to build and test our
zinc cells, such that that allowed us then to get voted
People's Choice at the Cleantech Open Global Forum. It
allowed us to get voted the technology to make the greatest
impact at the UC Berkeley Cleantech To Market Symposium,
which was hosted by former Vice Chair Scott.

And with our testing it allowed us to brief Mr.
Gravely and his staff on how this technology can help
California achieve its DER and renewable energy goals,
providing energy storage for everyone, including and
especially our low-income and disadvantaged communities.

So we're honored and excited to be nominated for
this award that will allow us to build a prototype and test
it with one of California's largest e-bike manufacturers as
a precursor to building a larger battery to meet Mr.
And we especially want to thank those people in the EPIC and CalSEED. And of course, those at New Energy Nexus: Danny Kennedy, Joy Larson, Sarah Chester and Jon Bonanno for their support during Phase 1 and we look forward to working with them in Phase 2.

We also look forward to hosting any and all of the Commissioners at our lab at the Richmond Field Station when you're available. So thank you very much for the opportunity, and we want to thank the ratepayers of California for making this all possible.

MS. GALLARDO: Thank you, Michael.

So now we will have Kevin. And a reminder to please spell your name and state your affiliation. And after Kevin will be Russell Okamura. Kevin, your line is open, you may begin.

MR. KUNG: Good afternoon, Commissioners, and everyone else, my name is Kevin Kung, K-e-v-i-n K-u-n-g, and I'm a Co-Founder of Takachar Limited where our mission is to turn crop and forest residues known as biomass into higher value products in a small scale decentralized manner for rural communities.

I went to echo what Joy, as well as Michael said. And for us, we were fortunate about two years ago to be awarded on the CalSEED Concept Award, which allowed us to initially set up our own lab scale demonstration of which
we are still testing right now. And what is more, is that
a CalSEED program through a partnership with the Cleantech
Open was able to help us develop our business
(indiscernible) market strategy through market discovery as
well as development where we were able to procure a few
letters of interest.

And for us, we are excited to be nominated for
the CalSEED Prototype Award. If granted that it would
allow us to actually act on some of these letters of
interest to actually do the next step, which is to bring
our prototype to the end users for testing. And all of
this would not have been made possible without the support
of CalSEED, which also brought on additional funding for us
and opened up many more resources and partners.

So I would like to again thank both the CalSEED
and EPIC as well as New Energy Nexus for the opportunity
and the consideration. And we hope to continue to work
with them, as well as to keep you updated our progress.
Thank you.

MS. GALLARDO: Thank you, Kevin.

So now we will have Russell and then after that
will be Ranji. Russell, a reminder to spell your name and
state your affiliation. Your line is open, you may begin.

MR. OKAMURA: All right. My name is Russell
Okamura, R-u-s-s-e-l-l O-k-a-m-u-r-a. And I’m speaking
today on behalf of ReJoule where I have been the Embedded Systems Engineer for a little over three years. And so we would just like to thank the CEC for its ongoing support and for providing the clean tech space, especially lean startups like ourselves, for such opportunities.

We're very passionate about maximizing the value of every battery as we believe they will be a major factor in facilitating our transition to a cleaner future. And this award will really support the development of a reliable and scalable battery diagnostics platform that boosts battery safety and performance without requiring specialized skill sets.

And so while wind turbine technician is the fastest growing job in the U.S. today, we want to make a battery technician the fastest growing job in California and in the U.S. in the future.

Our goal is not only to improve the safety and performance of a battery in its first life, but also open the door to the endless possibilities of second life applications for repurposing these batteries. By maximizing the value of every battery from the time it's manufactured until it must be recycled ReJoule's goal is to make clean energy accessible and affordable for everyone.

We'd like to thank the CEC once again and all of the ratepayers for this opportunity. Thank you.
MS. GALLARDO: Thank you.

We will now have our final commenter Raji George.

A reminder to please spell your name, and state your affiliation. Your line is open, you may begin.

MR. GEORGE: Good afternoon, Commissioners. My name is Ranji George, George is the last name. I have a new nonprofit Coalition for Advanced ZEV.

As I mentioned before, I was a scientist at the South Coast AQMD in the Technology Advancement Office. And before that I helped ARB set up the 1990 ZEV mandate when South Coast was a major player in that. And today the ZEV mandate is the foundation for a lot of the battery technologies and battery cars coming on the market. And we really want to thank the Commissioners for the great support for solar, wind and zero emission technologies.

In that context, if I may, I hope the Commissioners will discourage cobalt-based batteries. Coburn has performed its job very well, it is the workhouse, the showcase for battery technologies. But as we see what's happening in the world, given the serious human rights violations going on in Congo (indiscernible) of the cobalt and the other toxic materials that's going into current battery technologies. I strongly would strongly urge the Commissioners to support alternate battery technologies, more sustainable with minimum toxic
A lot of the major battery manufacturers are indeed going that way. And I hope you would limit and restrict and even outright ban cobalt-based batteries, before we get drowned in it. Because ultimately, even after reuse it has to be recycled. And guess where all these recycling facilities would be in AB 617? Disadvantaged communities. Only there will you be able to relocate these recycling facilities, so is that fair? So I urge you to become aware of these other technologies that are coming down the line and throw all your mighty weight behind that. Even Tesla has announced they are going to get away from cobalt. That's a major announcement and I hope the Commissioners will join in that effort to move us away from a battery and more sustainable world.

Thank you again, Commissioners, for allowing me to share these thoughts with you. Thank you.

MS. GALLARDO: Chair, that was the last comment. I’ll hand it over to you.

CHAIR HOCHSCHILD: Okay, thank you, everybody. And again, this program has been a remarkable piece of our strategy. And I just want to thank all the staff and the awardees for participating and for helping push the envelope forward.
Is there any other Commissioner wishing to make a comment on any of these? If not, Commissioner McAllister, would you be willing to move the item?

BOARD MEMBER MCALLISTER: Yeah. And just and by way of a tiny comment just thanks, Joy, for assembling and doing the process in bringing all these great packages forward. And it's great to see the diversity of technologies here, so really fabulous. And thanks Eleanor, for the presentation.

So I move Item 9.

CHAIR HOCHSCHILD: Commissioner Douglas, would you be willing to second?

BOARD MEMBER DOUGLAS: Yes, I will second.

CHAIR HOCHSCHILD: All in favor say aye, Commissioner McAllister?

BOARD MEMBER MCALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously. Congratulations to all the awardees.
Let's turn now to Item 10 for approval of the January 25th business meeting minutes.

Any comments, any public comments on this?

MS. GALLARDO: This is Noemi Gallardo, the Public Advisor. There are no public comments on Item Number 10.

CHAIR HOCHSCHILD: Okay. Unless there’s comments from the Commissioners, Commissioner Douglas, would you be willing to move the item?

BOARD MEMBER DOUGLAS: Yes, I move approval.

CHAIR HOCHSCHILD: Commissioner Monahan, would you mind seconding?

BOARD MEMBER MONAHAN: I second.

CHAIR HOCHSCHILD: Okay. All in favor say aye, Commissioner Douglas?

BOARD MEMBER DOUGLAS: Aye.

CHAIR HOCHSCHILD: Commissioner Monahan?

BOARD MEMBER MONAHAN: Aye.

CHAIR HOCHSCHILD: Commissioner McAllister?

BOARD MEMBER MCALLISTER: Aye.

CHAIR HOCHSCHILD: Commissioner Gunda?

BOARD MEMBER GUNDA: Aye.

CHAIR HOCHSCHILD: And I vote “aye” as well.

That item passes unanimously.

Moving now to Item 11, Lead Commissioner or Presiding Member Reports. Let’s begin with Commissioner
McAllister.

BOARD MEMBER MCALLISTER: Well, thank you very much, Chair. I’m going to have a lot that I want to report on, but just wanted to congratulate the IEPR team for that start off. Congratulate the IEPR team for the Econ and Demo workshop last week. It was so good, I think all of us -- well most of us, I think the Chair, you were otherwise occupied -- but everybody else was on including Commissioner Gunda back when we called him Siva.

This is a little weird right, because you know EAD was at this workshop, and Siva you were in the middle of it. So I want to thank you as Commissioner now, for organizing that. And the whole team really do just an incredible job. Like lots of chefs in that kitchen and I don't want to call out everybody, but there was a good start to the IEPR cycle in looking forward, however the various (indiscernible) relationships and aligning.

I’m looking forward to having a really robust IEPR development process of big-ticket items and big issues in coming up this year. And the scope is out for comment, so hopefully people will have a look at that.

And I want to just make a comment on a couple of other topics. One is the development of the 2022 Title 24 Part 6 Update. A couple of weeks ago we had a workshop on low res residential and had a lot of great interaction with
stakeholders. I want to really acknowledge that Building Standards Office: Will and Mozi and Payam, Peter, R.J., Danny and Mike Sokol in the Efficiency Division and really the whole Building Standards Office.

They are doing so much analysis. And I know those of you who've been through one of these cycles know what it's like to have to really do an amazing amount of modeling and count lots of carbon molecules and electrons and therms to figure out what the footprint of a building is. And in all 16 California climate zones and lots of different building types. And so that analysis is rigorous and ends up with a very solid result that then can go out into the world for discussion. And that's what's happening now.

And so the process, you know my assessment is that it's working. We really appreciate all the input. There's lots of creativity, stakeholders are across the spectrum. Obviously, there's a lot of interest in decarbonizing our buildings and we are headed that direction really at breakneck speed by any measure, I would say. And there's just lots of interest in figuring out ways that we can get there faster and better.

And it's a tremendous amount of creativity and organization. And so we really deeply appreciate all that across the board with stakeholders and trade allies and
staff.

And you know I think most recently at the latest workshop, we've gotten a fair amount of comments already. And are looking at the drawing the climate zone-based energy budgets as stringently as we can, while still keeping it feasible. So that's an ongoing discussion and stakeholders have been -- and remain really critical for that.

And then second, looking at how we can facilitate decarbonization in the future and sort of so we can sort of carbon proof buildings when they get built to account for new and cheaper technologies that come down the pike. So what kind of infrastructure could we plausibly require for heat pumps essentially to be installed down the road, if they're not installed at the outset. So those are ideas that have had a lot of stakeholder interest. And we're working on trying to see how feasible those are and where we can apply them.

So it's really exciting to be working with all the trade allies up and down the chain, the whole supply chain, manufacturers and installers and really across the board. So lots of activity, not only in low-rise single family, but also in multifamily and a bunch of nonresidential building types as well.

So I just kind of wanted to give my colleagues an
update of that. That there's a lot of progress and 45-day language will be coming up here in the coming weeks. And that that process will keep moving down the road. But there's a lot of really great interaction and that's our process, right? That's California's process to get to good answers. And to make sure we're paying attention to the details as we move forward in a responsible way, but also being aggressive.

I mean our state is among the states with the highest gas system coverage right, like 87 percent or so. And starting from that base, we're strengthening what's already the most aggressively decarbonizing building code in the country. So, you know, it's a series of big steps that we're taking here. And I believe the fundamentals of the path we're pursuing are quite solid, so that interaction with everyone is key. So I just wanted to give up a few thoughts on that just to update my colleagues in a public place, in the business meeting.

The last thing I wanted to mention is that tomorrow there's a role of a task force that I've been participating in, the NARUC-NASEO task force on comprehensive electric system planning. I started participating in that. Actually, Commissioner Gunda participated in a meeting or two along the way. And it's been a really interesting process.
So it started out, you know, the sort of vision for it was to incorporate distribution system planning, more integrally into overall system planning. Sort of to appreciate that the fundamental role of distribution system planning as the distributed energy world really became a full-fledged reality. And it ended up being a comprehensive approach, so from large-scale generation, transmission all the way down to sub-transmission and distribution. And to really reflect the fact that that's the way planning has to happen.

And so over a two-year process, public service commissions, public utilities commissions and state energy offices from 16 states participated in this dialogue. And came up with a whole bunch of models about how planning could take place in a responsible way. Paying attention to all the details and the timelines and the complications of how planning takes in regulatory environment. And it really, I think was very valuable for the states that were involved.

And California already does a lot of that. We already have a very articulated interagency planning process with the PUC and the CAISO. But bringing that kind of model and other models and different levels of restructured environments across the country was, I think immensely valuable. So the big reveal is tomorrow morning
with a press conference and a bunch of materials that'll be rolling out.

So hopefully California and the other states who participated will be kind of be giving assistance helping other states who didn't participate or who aren't maybe quite in the same place or as far along, to improve their planning using lots of data analytical tools, rigorous coordination across agencies. And some concepts that I think will help them be more effective.

So that's been a nice activity to be involved in for the last couple years. It's coming to fruition, so I just wanted to give people a heads up on that.

And then, finally I just wanted to say to Commissioner Gunda, thanks a lot. We're going to be working together a lot on these issues. I'm not exactly sure what the aisles that we'll be reaching across or the BK barriers (phonetic) and everything. But it's so gratifying to know that whatever topics you'll be taking on will be in good hands, first of all. But then also, in particular on these planning issues and reliability. And those sorts of things that really have been fundamental to EAD and that you've helped nurture and mature. You'll be integrally involved in those, so it's just a great thing for the state.

All right, and with that I will pass it to my
next colleague.

CHAIR HOCHSCHILD: Thank you. Thank you, Commissioner.

Let's go to Commissioner Douglas.

BOARD MEMBER DOUGLAS: All right, I just have a few very quick updates. I had a nice briefing from LADWP on their plans for hydrogen storage at the IPP plant in Utah. That was really, you know, a good brief thing. I appreciated it.

I had a chance to talk to NCPA about a number of projects and priorities that some of their members are undertaking, including floatovoltaics. Those are floating solar panels, in this case at a wastewater treatment plant in Healdsburg. Some electric bikes, some new generator that can run on more than 50 percent hydrogen in Lodi, although they are still working on the details of how to realize some carbon benefits from that. But they've got it in place. So that's all been fantastic.

I enjoyed participating in the kickoff of the IEPR. I'm looking forward to that process. And really that's all I've got today. Thank you.

CHAIR HOCHSCHILD: Okay, thank you.

Commissioner Monahan?

BOARD MEMBER MONAHAN: Yeah, so it's funny. In this round, Commissioner Gunda, usually the newest person,
the newest Commissioner gets tapped first. The first time I was on, all eyes were on me. “Well, come on, Commissioner Monahan, give your updates.” And I was like, “What?”

CHAIR HOCHSCHILD: And really you had been a Commissioner for four hours.

BOARD MEMBER MONAHAN: They’re being nice to you. (Laughing.) I want to say the Chair is being nice to you. Well, first, I just want to say there’s been a lot of follow up with the Governor’s budget proposal. And the proposal to reauthorize the Clean Transportation Program and provide a billion dollars for ZEV infrastructure.

And I just want to acknowledge Hannon Rasool and his team in the Fuels and Transportation Divisions, because they’ve been fielding a lot of questions. And putting together very long Q&A documents that are really impressive and very thorough and very thoughtful. So I just wanted to give a shout out to the team for all they’re doing to support the Governor and the budget that he has proposed.

You may have seen ACEEE gave California an award -- I see Commissioner McAllister smiling -- for being the best in the country on transportation electrification. And that comes on the heels of California winning for energy efficiency. So I was lucky enough to be the one to speak
on behalf of the State of California and all of our work to
accelerate transportation electrification. So that was
satisfying that we're getting some recognition from ACEEE.
Yay, California.

So we did publish, the staff published it’s Draft
2127 Analysis on Charging Needs to reach California targets
for 2030. And that includes both the 5 million easy
targets before Governor Newsom’s EO and Governor Newsom’s
EO survey is that they’ve estimated 8 million that in the
passenger vehicle sector will be needed by 2030. So the
team has done that evaluation. Usually, draft reports are
a little bit ho-hum. This one’s not so ho-hum. It’s
interested the Legislature and people are just like very
curious about this.

We did have a commissioner workshop on a topic
that I participated in. And the team did a really great
job, so it's a lot of folks. I'm going to just to name a
few names, because they deserve a shout out. But Matt
Alexander, Tiffany Kwong, Tom Lopez, Noel Christostero,
(phonetic) Jeffrey Lou, Roger Ramesh, Michael Wolford and
Larry Riatta. (phonetic) They've all been very deeply
involved in this 2127 Analysis, looking at it from
different points of view. So we hope to self-publish that
in the final form in the spring.

And you know at least the initial -- the current
draft has us needing 1.5 million chargers light-duty and
about 160,000 for medium and heavy-duty. The medium and
heavy-duty numbers, I would say are much rougher than the
light-duty numbers, where we have more analysis to back it
up, but more to come on that.

And I’ve mentioned in the past that we have been
part of a charging infrastructure strike force. That it
includes a lot of members of industry, NGOs and utilities,
that are all working on a zero-emission vehicle future. So
that we had a meeting of the strike force earlier this
year, talked a lot about equity. There's different work
groups. They've basically -- the goals work group that
Hannon was leading has embraced the goals that are coming
out of the 2127 Analysis. So that will really form, I
think talking points for a lot of groups that are working
in this space, especially on the charging and battery
electric side to help hopefully, you know, support the
Governor's budget request.

I think that's about it. I too met with NCPA,
but Karen stole my thunder about some of the cool things
they're doing. Actually, I was going to use -- I want to
try screen sharing in the future, because maybe we could
even show pictures on these. We need to play with Zoom,
and become more advanced. Because they did send me some
cool pictures from some of those projects, including the
floating solar.

   So yeah, and I think that that is it on my list.

CHAIR HOCHSCHILD: Thank you.

Commissioner Gunda, that you've been in office for about four hours, so is there anything you would like update on or share?

BOARD MEMBER GUNDA: Yes, Chair. I am glad that Commissioner McAllister, Commissioner Douglas, Commissioner Monahan covered a lot of things that the Division supports. So I think we’ll be focusing a lot, the next two to three weeks on helping transition the management team in EAD.

I just want to give a heads up that Alicia Gutierrez will be Acting Deputy, while the search for the new deputy begins.

Apart from that, the primary focus over the last several weeks has been interagency coordination on near and long-term electrical reliability issues and will continue to work on that and hopefully at the next business meeting I'll be able to report more on them.

CHAIR HOCHSCHILD: Thank you, Commissioner.

Well, I guess, in terms of updates from me, I would just ask everyone's patience a little bit, as we are reshuffling assignments here with the departure of the Vice Chair and the arrival of Commissioner Gunda.

There are some things I need to sort through.
Obviously we adhere strictly to the BK rules and that always gets a little complicated as we deal with issues that actually, I would like more than just two of us to touch on.

There’s a few things I can share now. One is that I’ve asked Commission Monahan to take on the ports work that Vice Chair Scott was engaged in and she's going to do that. And I thank her for that. And I’ve asked Commissioner McAllister to join me second on R&D. And also to engage with the western states. We are doing quite a lot of work engaging in various forums with western states on clean grid issues. There’ll be more to come, but it's going to take me a little while to kind of work through all the details. And I'll be sharing that in an all-staff announcement.

I did do a couple of media interviews this week with Good Morning America on some energy efficiency and clean energy stuff with CalMatters on Lithium Valley. I spoke at VerdeXchange on resilience, the L.A. Metro Energy Resilience Summit and a few other things. But I think I’ll leave it at that.

I will say you know we're going to be doing a public search obviously for the successor to Darcie as Chief Counsel. And we'll get that process launched as well, as you know, supporting Drew on finding a successor.
to coordinate.

In terms of priorities for the year looking ahead, you know, my top legislative priority is to support the success of the Governor's budget. And the full one-and-a-half billion for clean transportation, including the billion for clean transportation infrastructure. As well as working with Commissioner Douglas on offshore wind and to really try to push the envelope forward there and get momentum and get that launched in California.

As well as Lithium Valley, we're going to stand up to this Lithium Valley Commission. We have, I think, 9 of the 14 appointments. We've done our part. We're waiting for the final members of that Commission to be appointed. And that's going to be a really robust dialogue.

I will be supporting Commissioner McAllister’s terrific work on building decarbonization in this code. I just wanted to say again, you know, this is a very heated process. There's a lot of really strong views and it's complicated, but that's why we have a careful process. We do a lot of diligence and we take a lot of public comment. And I think the record has shown over the years we've done a terrific job on that. And we're going to continue to do the best that we can and to really stick to the landing with this stuff. These kinds of transitions are difficult.
And I think that's the path we're on, is really to make it a sustainable transition to decarbonization.

So those are a few of my priorities for the year. I mean, I think as well you know electric reliability is just front and center. And been continuing to be in close dialogue with the principles of PUC, CARB, CAISO, (indiscernible) on all the actions that we need to take. We did have a very fruitful discussion with all the stakeholders in Demand Response last Friday, which just going over some of the challenges there.

So that's my update. Let's turn now to the Executive Director's Report.

MR. BOHAN: Thank you, Chair. I just have a couple items I wanted to cover this morning. As was noted for me I testified in front of the Assembly Subcommittee on our items, our BCPs and our trailer bills. There were no votes set to be taken, and there were no votes taken.

The ZEV item was not on the agenda and that's going to be taken up by the Assembly on March 17th. And the Senate hearing to cover all of our issues, the ones we covered today in the Assembly plus the ZEV issue will be on February 23, so just a couple of weeks from today.

The LOA expressed some concern about some of our trailer bills, and we're going to continue to meet with them between now and the next iteration of this
conversation with the Legislature very soon.

Next, just a reminder to everybody we're moving to the new CNRA Building. The details are to be worked out. Later this month we're going to be meeting with hopefully all staff. We're going to be inviting all staff, and in separate meetings of chunks of individuals, to talk about the move and get input from everybody. But we're excited about doing it.

And we are cleaning out the building, as we speak. The Fifth Street building is almost fully vacated. Our lease is up at the end of this month. and staff over there have been great. I want to thank Laurie ten-Hope for her leadership in getting that moving very, very quickly.

The next three vacancies as we've noted here with Commissioner Gunda being elevated and Darcie being elevated, and Courtney as we discussed earlier this morning, leaving. I'll be sending those around and seeking your input.

And then, finally, I just want to give my congratulations to Commissioner Gunda as well. I love the message it sends that a staff person who is brilliant and works really hard and gets everybody every day trying his or her best can become a Commissioner. Thank you.

CHAIR HOCHSCHILD: Thank you, Drew.

Let’s move on to Chief -- sorry to the Public
Advisor’s Report.

MS. GALLARDO: Hello, there. Noemi Gallardo, Public Advisor. I do not have a report today, but I do want to comment that it is fun to say “Commissioner Gunda.” I'm getting used to it really quick and excited to say, Commissioner Houck very soon. So thank you and congratulations to you both, Commissioner Gunda and soon to be Commissioner Houck.

CHAIR HOCHSCHILD: I would like to just note, Noemi, these meetings are running really, really well. And having seen a number of other public meetings not go so well with technical issues and so I just really want to give praise to you for all the attention to detail, the preparation. You are doing a spectacular job just helping our public process go well. And I just want to note that.

I know I speak for all my colleagues in that regard, so thank you so much for getting us all organized and working so well with these remote meetings.

MS. GALLARDO: I appreciate that, Chair. And I have an awesome team working on this, so it's not just me. I just wanted to make sure that I note that and appreciate all of their hard work as well.

CHAIR HOCHSCHILD: Yes, thank you to your team, really, really grateful. Oh, by the way, do you want to share briefly about the Clean Energy Hall of Fame Awards,
just our schedule for the year? Any update on that maybe.

MS. GALLARDO: Sure, I can give a quick update.

We are planning to have the Clean Energy Hall of Fame Awards this year in December. When we did that last year in December, it worked out really well. And we're hoping that if we have it later in the year and that we can be in person. So that's what we're aiming for, to have an in-person ceremony, but we will also be planning for virtual one just in case. And we're really excited about it.

We don't concrete dates just yet. We will be posting our nomination forms in the next few months. We will also be organizing a selection committee, so I will provide more updates once I have more concrete information on that.

CHAIR HOCHSCHILD: Thank you so much.

MS. GALLARDO: But we're very excited about it.

CHAIR HOCHSCHILD: Okay. Let's move on to public comment.

MS. GALLARDO: Yes, we -- this is Noemi Gallardo, the Public Advisor. We do have several people on the line. There are about seven, and I want to give some instructions before we open up the lines.

So this is a period for any person wishing a comment on information items or reports of the meeting agenda or any other item. Each person has three minutes to
comment and comments may be limited to one representative or organization.

As a reminder, we are not accepting public comments through the Zoom system. Please call our Verizon line at 888-823-5065. There's still time to hop on. The pass code is “business meeting.” After your line is open, please spell your first and last name and state your affiliation if you're representing an organization.

Do not use the speakerphone when talking, because we won't hear you clearly. If you're also on Zoom, either mute or leave Zoom to avoid feedback.

So we will begin with Lauren Cullum, and then we'll have Robert Gould after that and Jonny Kocher after him.

So Lauren, your line is open, please go ahead.

MS. CULLUM: Thank you. Good afternoon, Commissioners. I’m Lauren Cullum. I’m a Policy Advocate with the Sierra Club of California, representing 13 local chapters in California and half a million members and supporters throughout the state.

I’m calling in today to express the Sierra Club of California’s disappointment with the current proposal for the Title 24 2022 Code Update. Over the last year, hundreds of organizations ranging from environmental to environmental justice groups, public health groups,
utilities, local governments and many others have called
into the CEC during business meetings, and the Title 24
workshops to urge the CEC to adopt an all-electric code.
We needed the CEC to listen and help move the state in the
direction we need to go for cleaner air and a cleaner
climate.

Instead, the CEC presented a disappointing
current proposal that will certainly throw our state off
course and set us back. This current proposal does not
include all-electric baseline for new residential
construction. And instead, only incorporates a single
electric appliance; either an electric heat pump space
heater or heat pump water heater. However, which of these
appliances is dependent on where the building is located.
And the proposal opts for the clients that would use the
least energy in the given climate zones.

This will certainly set us back on our air
quality goals emission reduction targets, and will end up
costing Californians more in the future.

If California intends to be a leader on climate
policies, we really need to see more aggressive action
taking on the sector that is a major contributor to climate
emissions and poor air quality. All eyes are on the
California Energy Commission right now to set the pace and
tone for reducing emissions from the building sector. And
this current proposal falls badly short of what we need to make an impact.

We urge the CEC to commit to prioritizing the health of Californians. And put the state on a determined path to achieve its climate goals by committing to an all-electric baseline for all building types and all appliance in the 2022 code.

Thank you so much.

MS. GALLARDO: Thank you, Lauren.

So next up is Robert Gould. Robert, again a reminder to spell your name and state your affiliation. Your line is open, you may begin.

DR. GOULD: Thank you. I just wanted to check if you can hear me?

CHAIR HOCHSCHILD: Yes, we can hear you.

UNKNOWN SPEAKER: Yes, we can.

DR. GOULD: Very good, thank you. Again, my name is Dr. Robert Gould, that’s spelled G-o-u-l-d. And I worked as a -- and I’m speaking for Physicians for Social Responsibility. So thank you for giving me the time to speak today.

After working as a pathologist for over 30 years of Kaiser hospital in San Jose, since 2012 I've been an Associate Adjunct Professor in the Department of Obstetrics, Gynecology and Reproductive Sciences at UCFS
School of Medicine, working as a collaborator with our program on reproductive health in the environment.

I’ve been on the National Board of Physicians for Social Responsibility since 1993, serving twice as President in 2003 and 2014. Since 1989 I've also been President of the San Francisco Bay PSR (indiscernible) speaking representing hundreds of health professionals who speak for the health of our patients and communities.

We are all increasingly impacted by the unfolding public and environmental health crisis of global warming and connected issues of air pollution. Reinforced by new research from Harvard University and other universities released yesterday, indicating that more than 8 million people died from fossil fuel pollution in 2018. Because of this, we support increase electrification of our infrastructure provided by renewable and sustainable non-nuclear sources as a replacement for natural gas, in support of climate and respiratory and cardiovascular health.

Accordingly, we strongly urge the CEC to move expeditiously towards adopting a single all-electric baseline for all building types, because all-electric buildings are cheaper to build and operate; are better for public health and a critical pathway to protect us from chronic crises.
Opposition floats on the fact that the combustion of gas inside our homes for this is harmful indoor air pollutants, specifically nitrogen and dioxide, carbon monoxide, nitric oxide, formaldehyde, (indiscernible) and ultra-fine particles. In its 2016 integrated science assessment on nitrogen dioxide, the EPA concluded that short-term exposure to nitrogen dioxide has a causal relationship to respiratory effects, including the development or exacerbation of asthma.

In this regard, we're very concerned that African American and Hispanic children with asthma are likely, the most disproportionately burdened by indoor air pollution from gas stoves. Inequity of such impacts is reinforced by housing conditions whereby factors, including smaller unit size, bigger occupant density and often inadequate stovetop ventilation contribute to elevated concentrations of ten-o-two (phonetic) lowering from multifamily buildings.

And of course we need to consider the highly impacted outdoor air pollution suffered by the same multi-burdened communities.

Underscoring this is a 2013 meta-analysis looking at the association between gas stoves and childhood asthma counts. Children in homes with gas stoves had a 43 percent increase in experiencing asthma systems, or current asthma. A 24 percent increase risk of ever being diagnosed with
asthma by a doctor or lifetime asthma. And an overall 33 percent increased risk in with both current and lifetime asthma.

In addition, a 2018 study published in the Medical Journal of Australia indicated that for 12.3 percent of asthma sufferers, age 14 and younger --

MS. GALLARDO: Robert? Robert, this is the Public Advisor. I apologize for interrupting you, but your time is up.

DR. GOULD: Can I just finish my last statement?

MS. GALLARDO: Yes.

DR. GOULD: So in conclusion the CEC can heed the advice offered by the California Air Resources Board when it unanimously passed a resolution in support of CEC and other agencies adopting standards in 2022 code cycle that could result in both stronger gas stove ventilation standards, and electrification of appliances for all-new buildings.

We call on you to use this critical opportunity to update the 2022 statewide building code, to demonstrate leadership and commitment in providing us a needed push for the pollution-free buildings we need now for the optimal public, environmental and climate health that new and future generations so deserve. Thank you.

MS. GALLARDO: All right, so next up we have
Jonny and then we have multiple new speakers on the line. We have about 15 now, so because of that we're going to reduce the time to two minutes after Jonny speaks.

So Jonny, a reminder to spell your name and state your affiliation. Your line is open and you may begin.

MR. KOCHER: Hello. My name is Johnny Kocher. That's J-o-n-n-y K-o-c-h-e-r. And I work at the Oakland Office of RMI, an independent nonprofit working to shift towards a low-carbon future.

At last month's workshop the CEC presented a very disappointing proposal for the 2022 code language that would do very little to meaningfully -- to drive meaningful market adoption, which the CEC stated they intended to do ahead of an all-electric requirement in 2025.

Instead of proposing a baseline with all electric space and water heating, the proposal instead recommended electrifying the smaller of the two loads depending on climate zones. In essence, for cold climates that are dominated by space heating loads the proposals chose to electrify water heating, while for hot climates where water heating would be the larger load, they chose to electrify space heating.

This code proposal will do very little to drive electrification areas that are heavily coin (phonetic) dominated such as Southern California. These areas also
happen to be where there are very small numbers of local jurisdictions that have required all-electric ordinances and thus further decreasing the effectiveness of the proposal.

In this era of climate leadership at the national level, California should be taking the lead. To do this we encourage that the Commission adopt rules that promote all-electric buildings in the 2022 code cycle as recommended by the California Air Resources Board in November of last year.

Thank you for the time and your consideration.

MS. GALLARDO: Thank you.

Next, we will have Karl Aldinger and then after that Sasan. Karl, a reminder to spell your name and state your affiliation. Your line is open, you may begin.

MR. ALDINGER: Thank you. My name is Karl Aldinger, K-a-r-l A-l-d-i-n-g-e-r. And I’m speaking today as the President of the North County Climate Change Alliance, an educational and advocacy volunteer nonprofit organization in San Diego.

We recognize that this body understands the magnitude of climate crisis. We observe through your meetings that this body is fully aware all-electric will be the code standard for new construction in 2025 Title 24 Part 6 code. What we cannot understand is how this body
could consider proceeding with the half measure recently described as including electrification of either hot water or space heating, but not together for the 2022 code.

It is as if there's a full understanding of the need, but some grand bargain is playing out that prevents this body from protecting our future with a logical move of executing on what you have said you will eventually do.

We respect that these changes may be disruptive to the building industry and its workers and that transition assistance will be needed. I assure you that three extra years of building additional homes with gas will affect far more in our communities and our planet. History will judge us poorly for understanding what we must do, but instead delaying our transition.

We respectfully ask that you be bold and reconsider making all-electric new construction the 2022 standard. Thank you.

MS. GALLARDO: Thank you.

Sasan, you’re next. And then after that will be Ranji. A reminder to spell your name and state your affiliation. Sasan, your line is open, you may begin.

MR. SAADAT: Yes, Sasan Saadat with Earthjustice, S-a-s-a-n S-a-a-d-a-t. I’ll start by quoting something Commissioner McAllister during a recent (indiscernible) conversation. He said, “This is the moment if we're going
to really chart the course for this low-carbon future. We can make infrastructure investment decisions now that will be with us for a while.” So why after over 100 organizations urged the Commission to end the needless practice of expanding fossil fuels in these buildings, are they declining to do so? This is after all, one of our lowest hanging fruit (indiscernible).

To justify that, “incremental approach,” Josh says that the currently low rate of electric appliance installations means builders need more time to get comfortable. So they will only electrify the smaller of the two largest appliances and worse, the proposal won't even apply itself to provide the necessary space and plumbing services to retrofits that we know need to happen.

This explanation is based on the broken logic that ramping up heat pump installations is somehow a more intractable problem then retrofitting thousands of additional new buildings. There's absolutely no comparison. The challenges that this proposal creates for future generations and a future Commission, are so much larger than asking builders to do what affordable housing developers in cities across the state have already proven is possible and cost effective.

And in fact, the state this last proposal says to avoid asking more of the builders, we will assume the debt
of a massive new pile of building retrofits and 3 million more tons of greenhouse gases, on behalf of the state.

    I mean, I’m a young climate activist, but I’m old enough to know this is the common pattern of thinking that has contributed to the state of our climate crisis. What feels like the immediate consensus of this Commission is the proposition of a powerful industry. Even though, what we're asking them to do now is a far more manageable task than what will need to be done in the future.

    But now, there is no further into the future. The date has already come, the climate crisis is here, and this is the final decade for transformation. It's time for California’s actions to match its rhetoric. Taking fossil fuels out of new construction is one of our easiest tasks.

    This Commission must decide whether it will continue procrastinating so that a future party has to make the tough calls or whether they will be the ones to work against our default initiatives and we’re just entering an era of ambitious climate actions. Thank you.

    MS. GALLARDO: Thank you. So up next is Ranji and then after will be Shiba. Ranji, please your line is open, please begin.

    MR. GEORGE: Yes, thank you. My name is Ranji George. I am with the Coalition of Advanced ZEV. And it’s a voluntary nonprofit entity. Our goal is to promote
sustainable batteries, environmentally friendly batteries and hydrogen fuel cells. Because ultimately, we have to look from cradle to grave, the emissions and impacts on all facets of environment including air quality. So that's why the advocacy for sustainable batteries.

The context I come from, and as I mentioned before I’ve been a scientist at South Coast, was working for 25 years, more than 25 years in batteries, fuel cells and natural gas technology. So I’m somewhat familiar with these technologies.

I just want to bring to your attention the GNB Exide experience. I’m not sure and I apologize, if there's any Commissioner from South Coast. If there are they may realize that company name. We had two battery recycling facilities. They were recycling lead acid batteries from each car in the South Coast. And what happened, GNB Exide was doing a very useful social function that is recycling those batteries, rather than ending up in a landfill.

But what happened was AB 617 community started litigation and they believed that the facility had emitted toxic vapors, not only lead but other emissions from the facilities.

Now I put that as context, and this is a bitter litigation been going on for years, I was not directly involved. But what it gives us a context, today we are
going through millions of new battery vehicles. We are
promoting that. And each battery pack is at least 10 times
bigger than the current lead acid one-battery pack per
week. So you have 10 times, maybe more than 10 times with
battery waste coming down the pipeline. And even though
it's going to be reused and this great, excellent
commitment to reuse it, at some point you have to recycle
it. And if you have to recycle it, you may end up if you
don't plan well, like the GNB Exide disaster.

So I urge the Commissioners to put more focus on
it and not simply dismiss it. If I may, respectively
dismiss it as a footnote or asterisk that oh somebody else
had (indiscernible) --

MS. GALLARDO: Ranji, your time is up. Sorry, to
interrupt. This is the Public Advisor, your time is up.

MR. GEORGE: I’ll be sharing more in the future,
thank you.

MS. GALLARDO: Next up is Shiba, and I apologize
if I mispronounced that. Please spell your name, state
your affiliation. After Shiba will be David Moller.

So Shiba, your line is open, please begin.

MR. BHOWMIK: Thank you, can you hear me?

MS. GALLARDO: Yes, we can.

MR. BHOWMIK: Okay, hi. I’m Shiba Bhowmik of
Sinewatts. The name is spelled as S-h-i-b-a as in apple.
The last name is B-h-o-w-m-i-k.

On behalf of everyone that is pursuing true energy sustainability of our electricity platforms, I would like to offer my heartfelt gratitude for California's leadership. And our deep respect to the Commissioners at the CEC for their dedication towards decarbonization.

As you know very well, the world is intently following all the developments in California, with respect to decarbonizing our electricity. Especially under the new paradigm of public safety power shut-off events and the rolling blackouts. It is imperative for us to recognize that we are indeed observing the very first signs of the inherent fragility of a centralized electricity platform.

And then on top of it, we are also bringing on an unprecedented amount of electricity load on the distribution network, on the same fragile system, with more and more but justified mandates of transportation electrification.

The very definition of resiliency is not having to rely on a system that is prone to its very own fragility. We request all stakeholders, automotive, OEMs, utilities, regulators, to embrace this predicament as perhaps one of the greatest opportunities of a few lifetimes. We implore the State of California to double down on research, development and demonstrations that
fundamentally strives to re-architect our electricity
platform holistically from the bottom up, to deliver deeply
embedded resiliency, inherent reliability, affordability,
sustainability and energy equity for all.

Thank you so much for your time.

MS. GALLARDO: Thank you.

Next up, we have David and then after David will
be Vanessa. David, a reminder to spell your name, state
your affiliation. Your line is open, you may begin.

MR. MOLLER: Great. Thank you, my name is David
Moller, D-a-v-i-d M-o-l-l-e-r. I’m representing the
Climate Reality Project Bay Area Chapter. And I’m calling
to urge you to adopt an all-electric baseline for all
building types in the 2022 code cycle. However, I’m not
going to go into the compelling reasons to do so. You
already know those reasons, and there are many of them.

Instead, I’m going to focus on the reasons why
not to act now. And how those reasons are not very
compelling. So let’s start with because the manufacturing
sector needs time to gear up. That’s nonsense. Most
households in the U.S. are already all-electric and a large
portion of these already use heat pump technology. With
almost two years to gear up before the January 1, ‘23
effective date there's plenty of time for manufacturers to
get ready.

CALIFORNIA REPORTING, LLC
229 Napa Street, Rodeo, California 94572 (510) 224-4476
Another reason is because the building industry needs time to prepare and train. This reasoning is even weaker than the manufacturing rationale. Builders already know how to pull wire and install two 40-volt circuit breakers. And again there's at least two years to prepare.

How about because the natural gas industry will lose future customers? Okay, a valid concern. But the gas industry is going to lose those customers tomorrow, if not today. The good news for the natural gas industry is it will likely take a decade or more to scale down gas usage in existing buildings. So there will be plenty of time to scale down the industry and transition workers to other sectors.

How about big change takes time to implement? This isn't much of a rationale when there's almost two years before the effective date and exemptions can be built into the code to handle any real-world hurdles that get encountered after the effective date.

How about because of loss of jobs? What job loss? It’s going to be the same number of buildings designed, equipped and built by the same number of workers. The buildings just will have electric infrastructure, instead of gas.

Costs? Your own studies show there isn't a cost downside.
How about because of prior commitments or expectations? Look, we all make commitments based on what we know at the time. But we know a lot more now than we did during the last code cycle. We need new commitments, based on what we know now.

So in summary, this really isn't the time for an incremental incentivized approach. It's a damn climate emergency. You're in a pivotal position to make all the difference. We need you to act now. Thank you very much.

MS. GALLARDO: Thank you.

Next is Vanessa. Vanessa, a reminder to spell your name and your affiliation, if any, and then after that will be Eric. Vanessa, your line is open, you may begin.

MS. TEO: Good afternoon, Commissioners, and thank you for your time and service. My name is Vanessa Teo, spelled V-a-n-e-s-s-a T-e-o. I'm a senior at Burlington High School and I am the President and Founder of the Bay Area Youth Climate Action Team.

I urge the CEC to adopt a single all-electric baseline for all building types, because of the long-term economic and health benefits of electrification. All-electric buildings are cheaper to build, and to operate. And that they would actually reduce construction costs and utility bills, ultimately making housing more affordable.

Additionally, avoiding the addition of new gas
lines to buildings would also reduce stranded asset risk as California begins the process to electrify its buildings (indiscernible). But also, according to the Rocky Mountain Institute for the City of Oakland, purchasing all-electric appliances result in generally a net saving of $1,350 to $1,650.

In addition, there is conclusive evidence that even just short-term exposure to nitrogen dioxide has a causal relationship to respiratory affects including the development of asthma. Moreover, smaller unit size, more people in a home, and inadequate stovetop ventilation strongly contribute to increased concentration of nitrogen dioxide in low-income multifamily building. These citizens are facing dangerous health effects when they're using gas appliances.

With climate change so rapidly approaching, and its dangerous effects increasing of the day, we do not have the time to continue delaying an all-electric performance standard. We cannot continue to let the gas from our homes and buildings pollute our air, our climate, and damage our health. Ultimately, adopting a single all-electric baseline for all building types would lower costs, improve internal air quality, and reduce climate change pollution.

Thank you very much for your time, once again.

MS. GALLARDO: Thank you, and now is Eric Arens.
After Eric will be Jenny. Eric, a reminder to spell your name and state your affiliation. Your line is open, you may begin.


The CEC should move towards adopting a single all-electric baseline for all building types, because all electric buildings are cheaper to build, cheaper to operate, better for public health, and critical to protect us from the climate crisis.

At the last workshop the CEC presented inflammation that indicated that in the 2022 Code, the baseline would require only one all-electric appliance in a residential building. The CEC said it would take an incremental approach when mandating electric appliances and may go all-electric in the 2025, 2028 code.

Last September in the middle of the historic California wildfires, Governor Newsom stated this is a damned climate emergency. Our goals are inadequate to the reality we're experiencing. The CEC should pursue goals that Governor Newsom would find adequate.

The state agencies, like the California Air Resources Board and the Bay Area Air Quality Management District have submitted letters and made oral arguments that the CEC should move to all-electric buildings in 2022.
The CEC is a national player as evidenced by Commissioner Scott being pulled into the Biden Administration. We set the tone for national action.

Heat pumps are all over the country and California has a lot to catch up on this. The technology is there and we can do it. So anyway, thank you.

MS. GALLARDO: Thank you, Eric.

Next is Jenny Green, after her will be Laura.

Jenny, a reminder to spell your name, state your affiliation. And we will open your line in just a second.

Your line is open, Jenny, go ahead.

MS. GREEN: Good afternoon, Commissioners. My name is Jenny Green, J-e-n-n-y G-r-e-e-n. I’m a resident of San Jose and a volunteer with Mothers Out Front, a national movement of mothers and fathers mobilizing for a livable climate for all children. We have a rapidly growing California base of over 7,500 supporters stretching from the Capital Region and Bay Area to the Central Valley and the southern border.

I’m speaking to you today, because as a mother and deeply concerned that California is failing our children. Last fall, as the previous speaker said, when wildfires were sweeping the state, Governor Newsom declared we’re in a climate emergency and that our current goals are inadequate.
Despite these last few words, we see that you, one of the most important agencies in the state, may be on the brink of adopting a wholly inadequate goal. During last month’s CEC workshop your Building Decarbonization Lead declared that the state should take an incremental approach when mandating electric appliances. On behalf of mothers across our state, let me make it clear, an incremental approach will doom our children to a rapidly stabilizing climate and extremely compromised futures.

Delaying the inevitable switch to all electric appliances until the 2025 code update would allow new buildings to be dealt with gas equipment and plumbing. And new gas infrastructure could be deployed for those buildings until 2029, because of the lag between permitting and end up construction, particularly on large projects.

This is incompatible with the science and with the climate reality we are now experiencing. As you know, the IPCC says we have massive cuts in carbon emissions during this decade to avoid a climate disaster, so we must act now.

We also must back now to protect our children’s health. Children living in homes with gas stoves are 42 percent more likely to have asthma symptoms. And those are disproportionately children of color.

For the sake of our children and grandchildren,
please. You must adopt an all-electric building code, starting in 2022. There's no good reason to continue to build with outdated dangerous and climate destabilizing fossil gas when all-electric buildings are safer, healthier, and more cost effective and climate protected.

Please listen to the scientists, the doctors and nurses and 7,500 mothers. Please move forward to require that new construction in California be all-electric as of 2022.

As you know, 42 local California jurisdictions have already adopted local codes for electric new construction. It's time for the state to follow suit and to blaze the trail for other states. Our children will be living and working in these buildings --

MS. GALLARDO: Laura? (sic) Your time is up, apologies for interrupting. Can you please wrap up?

MS. GREEN: I’m finished.

MS. GALLARDO: Okay, sorry about that, Laura. Thank you. Next -- sorry, I actually called you Laura, I meant Jenny. So Laura, you're up next. And then after that will be a Sonja. A reminder to spell your name and your state affiliation. Laura, your line is open.

MS. DEEHAN: Thank you, this is Laura Deehan. And I’m the State Director at Environment California.

Thank you Chairman Hochschild, and Commissioners, for the
chance to comment. And I’m also joining my colleagues here, urging you to really strengthen this proposal and instead of adopting the current proposal adopting an all-electric baseline for the 2022 building codes.

As we’ve already seen in this meeting today California, and you know all of you have been real leaders when it comes to how we respond to the climate crisis. On solar, on renewables, with electric vehicles California has been such a leader and that leadership really matters. Other states, other industries, other nations follow our lead.

And unfortunately, in this instance, with this proposal, it would really hold California back. We still have the opportunity to be leaders. And so I really wanted to urge all of you to ensure that homes that are built in 2022 are the most energy efficient that they can be, that are using the best available technology, so that Californians can save money and save energy. And, you know, no longer be exposed to the dangerous air that gas can lead to in the home.

We've already seen this leadership with the 40 cities that have already taken action. And around the country nearly 60 percent of new homes are already being built all-electric. And the majority are using heat pumps.

We are really lagging behind, with only 5 percent
of new single-family homes built with heat pumps. And this is just completely at odds with the climate leadership that we've long had and so it's time to take bold action. I really want to urge you to adopt a stronger proposal and an all-electric baseline. Thank you.

MS. GALLARDO: Thank you.

Next up we have Sonja. After Sonja, will be Ronni. A reminder to spell your name, state your affiliation. Your line is open, you may begin.

MS. ROBINSON: Thank you. My name is Sonja Robinson, and that's S-o-n-j-a R-o-b-i-n-s-o-n. And I am calling on behalf of Public Power San Diego. And I'm calling in reference -- and I want to say greetings to the Commissioners and its own staff for this meeting today.

And I am suggesting that we move forward in a very strong and aggressive way to make sure that our buildings are electric. Globally, we know that our energy is renewable, is the future. Globally they’re looking at (indiscernible) either and I believe that California can really set the pace here in our country, and definitely meet the needs for our residents here.

I also believe that aligning our standards and codes to make sure that we meet an all-electric building by 2022 will also be aligned with our California climate policy equity framework. As well as we are leading on the
clean energy future. And coupling that with our California air resources.

So we know that our respiratory pandemic is very frightening for many of us. We've all been impacted somehow. And so getting away from fossil fuels and natural gas is another way in addressing our health, which is also in a state of being an emergency, as well as our climate is in a state of emergency. And as well as for many Californians cost and affordability is in the state of emergency.

And so moving into all electric is a way that we're able to address all of these areas. And reduce our emissions significantly, so we can have healthier air that can improve our respiratory for those that may suffer. As well as just a moving forward in our future with our energy and keeping our health in consideration as well, thank you.

MS. GALLARDO: Thank you.

Next up we Ronni, and then after that will be Christy. Ronni, a reminder to spell your name, state your affiliation. Your line is open, you may begin.

MS. SOLMAN: Good afternoon. My name is Ronni Solman, R-o-n-n-i S-a-m-o-l-m-a-n. I’m a retired LAUS teacher and a member of SoCal 350 Climate Action in Southern California.

The CEC should move towards adopting a single
all-electric baseline for all building types, because all
electric buildings are cheaper to build and operate, better
for public health and critical to protect us from the
climate crisis. As others have said, moving to all
electric will not increase construction costs, in fact, it
will reduce them. Building all electric is less expensive
than building with gas for every single housing type,
according to data from SF Environment.

Frankly it's the gas industry that is an obstacle
in the way of progress, and our world’s need for
electrification. An industry-led opposition campaign has
been spreading false information on the costs and public
support of electrification. It was mentioned how recently
at a workshop the CEC said the state should take an
incremental approach when mandating electric appliances.
Why? We’re in a climate emergency.

It’s time to tell the gas industry and other
fossil fuel companies the time is now, to either reinvest
in renewable energy and electrification or get out of the
way. Like the horse-drawn carriage of yesteryear.

Finally, we have leadership in the White House
that will support a radical and quick approach to
electrification nationwide, which is what our planet needs.
California has been a leader in the past, let us lead now.
Please, vote against this proposition and adapt a single
all-electric baseline for all building types, we need this.

Civilization depends on you, thank you.

MS. GALLARDO: Thank you.

Next up is Christy and then after that will be Bret. Christy, a reminder to spell your name and state your affiliation. Your line is open, you may begin.

MS. ZAMANI: Good afternoon, Commissioners. My name is Christy Zamani, C-h-r-i-s-t-y, last name Z-a-m-a-n-i. I am the Executive Director for Day One, a local nonprofit that has been committed to advancing public health for over 30 years.

I'm here today to express my support for moving towards adopting a single all-electric baseline for all building types. All-electric buildings are better for public health and critical to protecting us from the climate crisis.

As a lead agency that works with low-income communities of color, I can vouch that this pandemic has only highlighted the systemic racism and disparities that have impacted low-income communities of color for decades. Crammed families in single-unit apartments don't have the luxury to quarantine, be socially distant, or have access to clean fresh air. As leaders, we have the responsibility to improve the environmental and economic injustices, we know to be true, by adopting policies that protect the
people and our planet.

Children living in areas with high levels of outdoor air pollution and low lower-income African American and Hispanic children with asthma have been disproportionately burdened by indoor air pollution from gas stoves. In the quest to advance public health, we see moving to all electric buildings as a golden opportunity to reduce utility bills, increase affordable housing, and advance clean energy while improving indoor air quality.

There is no doubt that this is the right time and that this is the California thing to do. Thank you for your leadership and time in advance.

MS. GALLARDO: Thank you.

Now we have Bret, and after that will be Ann. Bret, a reminder to spell your name and state your affiliation, please begin.

MR. ANDERSON: Yes, hello. This is Bret Anderson. I’m a member of Carbon Free Palo Alto and act as a Bay Area advocate for building decarbonization. I’m here to add our support for an all-electric baseline for all building types in 2022.

And in the case of going all electric in the next two years, I think there's really no doubt here that it's a feasible high-impact way to address the climate crisis. And that it's a much better alternative to the gas business
as usual that we're doing today. If you look at economy, health, safety, reliability, resiliency, community benefits you just can't be an all-electric approach. Granted California has a legacy of gas and oil production and service to the buildings here, but despite that this is a common practice around the world.

And California is behind on this, so we've got to deal with this legacy. But the first thing to do in this legacy situation is to stop digging the hole deeper, stop adding to that legacy, and creating that resistance one, from customers who would have invested in stranded assets that they know, that we all know, will be stranded or are stranded already in our gas network. But also we to create an environment that helps people make long-term investments in the right energy sources for their buildings.

I participated in some of the REACH code efforts across our region. Most of the resistance faded away when the Council and the staff were supported by efforts from CCAs, utilities, local builders and advocates to convince them of the all-electric story. It's much better looking than the gas alternative to most people. And that's why they mostly all gone for aggressive REACH codes. So it kind of proves that the case is there and that the community desires that wants have been formed.

So here is really a perfect opportunity for this
CEC to stand out and fulfill its mission in the interests of all Californians, by taking this extremely well justified step to establish an all-electric REACH code in 2022. Thank you for your attention.

MS. GALLARDO: Thank you.

It is now Ann’s turn, and Ann I’d remind you to spell your name, state your affiliation. After Ann will be Aaron and your line is open, please begin.

MS. FEENEY: Hi, my name is Ann Feeney, A-n-n F-e-e-n-e-y. I’m from San Diego 350, a volunteer organization working to prevent the worst impacts of climate change.

I urge you to include total building electrification in the 2022 building codes. And an all-electric baseline for both residential and commercial should be adopted, because all-electric homes are cheaper to build and operate. And importantly they're far better for health reasons.

Of the highest importance is the climate crisis, which demands bold aggressive action now. Some of the reasons we're giving it the workshop that was about two weeks ago for the phased approach of introducing building electrification over two code cycles included the thought that builders were worried about supply chain availability and expertise, and limited builder and consumer experience.
However, over 40 (sic) homes across the United States are being built with heat pumps whereas only 5 percent of California homes are. The supply chain is clearly there and limited experiences, because they're not encouraged or required by the building codes. California will be rapidly phasing out natural gas and fossil fuels, so why let new homes be built with what will be antiquated technology?

The climate crisis and public health concerns would be best served by aggressive bold steps in this next 2022 building code. Thank you very much for your attention.

MS. GALLARDO: Thank you.

Next we have Aaron. Aaron, a reminder to spell your name state your affiliation. Your line is open, you may begin. Aaron Harvey, your line is open. Would you like to speak?

MS. HARVEY: Oh, are you saying Ann Harvey?

MS. GALLARDO: Aaron?

MS. HARVEY: My name is Ann Harvey. I don’t know if the person misunderstood me or --


MS. HARVEY: Oh, okay. Thank you, sorry. Yeah, my name is Ann Harvey, A-n-n H-a-r-v-e-y. And I’m with
Climate Health Now. We're a group of approximately 500 California health professionals who call for a rapid and just transition to a clean energy economy in order to promote our patients’ health today and of the global climate tomorrow.

We applaud the CEC’s position, as stated by Bill Pennington in the October session. And I quote, “The energy Commission has a strong policy to pursue decarbonization as its highest priority goal.” I would strongly urge you to follow through with that highest priority by establishing an all-electric baseline for the 2022 code.

Together, carbon dioxide and methane are driving climate change. And climate change is a health emergency, especially for our kids. Warming temperature themselves and increasing extreme weather events threaten our health, our air, water, food, shelter and economic security. And pose an existential threat to humanity. The rising temperatures themselves affect every aspect of our health, including causing heat-related illnesses and deaths such as from heatstroke. Which particularly kill farm workers and other outdoor physical laborers as well as the elderly. And also the poor who more often live in poorly weatherized homes without air conditioning.

The higher temperatures also accelerate the
formation of smog, which in turn promotes lung disease and cardiovascular disease and death.

More severe and prolonged droughts, quicker melting of the yearly Sierra snowpack and sea-level rise all threaten our fresh water supply, which is already precarious in California.

Higher temperatures have also been found to decrease the nutrient density in foods.

Physical and psychological quality of extreme weather events are also severe, like from floods, wildfires heatwaves, emergency evacuations.

And in order to protect ourselves, and our kids in particular from the worst effects of climate change, we really must drastically cut our greenhouse gas emissions, now. That means leaving the gas in the ground and instead using clean sources with energy.

And apart from global warming, the indoor and outdoor air pollution from burning gas is disabling and killing too many Californians. Fine particulate matter impacts our health from before birth to old age. The increase in well-known and frequently cited, but their problems from before birth and into old age and just about every organ system.

Days with higher particulate matter measured are followed by increased hospitalizations and deaths due heart
attacks, strokes and exacerbations of chronic lung disease. But the fine particulates are also being linked more and more to diabetes, obesity, all the chronic diseases that are killing people more than anything else.

MS. GALLARDO: Sorry, your time is up. Do you mind finishing up?

MS. HARVEY: Thank you. All right, well I just encourage you to please go with the baseline of all electric. It really doesn’t make sense those less than halfway measures, thank you.

MS. GALLARDO: Thank you.

Next, we will have Robert. After that will be Elaine. Robert, a reminder to spell your name and state your affiliation. Your line is open, you may begin.

MR. WHITEHAIR: Good afternoon, this is Robert Whitehair, R-o-b-e-r-t, Whitehair, W-h-i-t-e-h-i-r. To the Chair and Members of the Commission, thank you for the opportunity to speak today. And thank you for paying attention to all of us speaking during this public comment period, even after a very long meeting.

The CEC should move towards adopting a single all-electric 2022 baseline code for all building types, because the utilities and appliances of new all-electric buildings are cheaper to build and operate, better for public health, and critical to protect us from the climate
crisis. There are countless groups and agencies looking to
the CEC to take the lead. I am the Vice Chair of
Sustainable San Mateo County and this is a mission
important to us.

As an example, where your leadership would be
helpful, please consider that many affordable housing
developers and others are proposing to eliminate many of
the sustainability issues, including all-electric. This is
leading to the unfortunate situation where some
organizations or companies would want to eliminate all of
that, including as I said all-electric. Your leadership
will go a long way.

For affordable housing, natural gas will be more
expensive than electricity. Residents of affordable
housing will suffer the most, because of the higher utility
bills. And because of the health impacts of gas.

In my own case I'm dealing with a 70-year-old
house that I'm trying to make all electric, because when it
was built it was not outfitted with electricity that would
support furnaces, gas water heaters, and all the rest of
things that would be better for the environment. I'm in
the process of doing that right now.

Last week with Bay Ran and PEC (phonetic) I was
able to install a heat pump water heater. It's very
effective in the cost is running just about where we
thought it would and we're very pleased for the installation. But retrofitting is very expensive. So I say, please act now and take time to get rid of natural gas. I thank you for the opportunity to speak today.

MS. GALLARDO: Thank you. Next, we'll have Elaine. After that will be Mark. A reminder to spell your name and state your affiliation. Elaine, your line is open. Please begin.

MS. SALINGER: Hi, my name is Elaine Salinger, E-l-a-i-n-e S-a-l-i-n-g-e-r. Thank you so much for allowing me to speak with you and I really want to thank you so much for your service. I'm here today, because I believe the CEC should move towards adopting a single all-electric baseline for all building types. Because all-electric buildings are cheaper to build and operate, better for public health, and critical to protect us from the climate crisis.

So I'm going to focus on something different from what the other speakers have spoken about. They've done a great job explaining the many reasons that I agree with for why we need to stop using carbon-based energy. But I want to share -- they've done a great job, so I'm not going to go there. I want to share something with you, that is really important. And it may be new information for you.

Oh, and I forgot to tell you I'm with an
organization called Citizens Climate Lobby.

So the single most effective way to stop climate change is putting a price on carbon-based energy and why is this? Why is it the single most effective way to stop using oil and gas? It's because it requires no infrastructure to be built, no new technology needs to be invented, and money changes people's behavior faster than anything else. So as climate change becomes worse lawmakers in California and in Washington will eventually pass legislation putting a gradually increasing price on carbon-based energy. And when they do this oil and gas prices will increase much more than you might imagine.

If people are locked into using oil and gas their costs will go way up until they switch to green energy. So you would help people save money, a lot of money. And again more money than you might imagine by requiring all new building and appliances to be electric.

I know you are leaders, I am asking you to lead us and to drive the car by looking forward, instead of just through the rearview mirror. Thank you so much.

MS. GALLARDO: Elaine, your time is up, thank you.

All right, next we have Mark. After that will be Lauren. Mark, a reminder to spell your name and state your affiliation. Your line is open, please begin.
MR. ROEST: Thank you. My name is Mark Roest, M-a-r-k R-o-e-s-t. And I am with Sustainable Energy Inc and I volunteered in the past with 350.org and I am speaking as a public and as an individual citizen.

Thank you for affording the public the opportunity to speak. The CEC should immediately adopt a single all-electric baseline for all building types. Because all-electric buildings are cheaper to build and operate, better for public health, and critical to avoid making the climate crisis worse.

We can address the stress on the grid as an opportunity to relieve load on it, by both putting as much solar on rooftops as is feasible and as much more on solar canopies as is necessary to support both the building and all the vehicles associated with it.

The technologies to do this affordably already exist and it creates substantial financial benefits on a well distributed basis, once the financing has been paid off. You know, probably 25 percent of a family's budget goes to energy and fuel for their car, and maintenance on it, on an internal combustion engine.

As a marketer in a battery and solar technology startup, I know that the solar and battery capacity can grow far faster than California demand. By instituting a single all-electric standard for all building types in the
2022 code, the market will increase. The manufacturers and contractors will gear up to fill the mandate with the effect of achieving economies of scale, which will increase the savings in capital and operating costs. Which other commenters have already identified for using electricity in place of gas.

I’d like to salute the CEC's pioneering role after Enron and other corruption market players manipulated the energy market two decades ago, causing an energy crisis across the state, which the CEC found ways to put control over. The gas industry is being just a selfish and greedy as Enron was then. And so it really is time to not listen to them anymore and to listen to the people who are saying we must save the planet. We must save each other. And save ourselves.

We do that by going to a full electric standard immediately, thank you very much.

MS. GALLARDO: Thank you.

Next is Lauren. After Lauren will be Diane.

Lauren, a reminder to spell your name and state your affiliation. Your line is open, please begin.

MS. WESTON: Hi everyone, I’m Lauren Weston, Executive Director of Acterra Action for a Healthy Planet, L-a-u-r-e-n W-e-s-t-o-n. Thank you so much for this opportunity. I’m also a resident of San Francisco and I am
the mom of a toddler who deserves a healthy fossil free future.

And I am calling on behalf of Acterra today in urging the CEC to move California further towards decarbonization by setting an all-electric baseline for new construction in the 2022 building code. The CEC should adopt a single all-electric baseline for all building types. Because all electric buildings are cheaper to build and operate, better for public health and critical to protect us from the climate crisis.

We have to rapidly decrease our greenhouse gas emissions. Allowing the development of new gas dependent infrastructure will only make it harder and more costly for us to fully decarbonize in the future. And science tells us that we need to fully decarbonize in order to protect our future and to keep things from getting worse than they already are.

As per NRDC data shows that on average a baseline code compliant gas furnace and AC system unit is 14 percent more expensive than a baseline heat pump. Cost data for ultra-low NOx furnaces, which are required in key California markets including the South Coast and San Joaquin Valley air districts show that the average cost of the furnace/AC unit is 29 percent higher.

On the health side, the EPA made the conclusive
finding that short-term exposure to nitrogen dioxide has a causal relationship to respiratory effects, including the development of asthma. Additionally, factors including smaller unit size, high occupancy density, and inadequate stovetop ventilation contributes to an elevated concentrations of NO2 in lower-income multifamily buildings.

All-electric homes are more economical and better for public health than gas-powered homes. Acterra urges the CEC to adopt an all-electric baseline for new construction in the 2022 building code.

Do it for us. Do it for our kids. Thank you for your time.

MS. GALLARDO: Thank you.

Next, we have Diane. After that will be Bronwyn. Diane, a reminder to spell your name and state your affiliation, if any. And your line is open, please begin.

MS. BAILEY: Good afternoon to talk show them Commissioners, my name is Diane Bailey. That’s spelled D-i-a-n-e B-a-i-l-e-y. I’m Director of Menlo Spark, a community climate group working towards a carbon-free and climate safe future.

I’m commenting today to urge you to move towards adopting a single all-electric baseline for all building types. Because all-electric buildings are cheaper to build
and operate, better for public health, and critical to
protect us from the climate crisis.

Many other commenters have discussed the climate
crisis that we're in, the urgency to phase out phase out
fossil fuels, the serious health and safety hazards of
using gas. And the favorable economics of all-electric new
construction, so I'll keep this brief.

Waiting three more years would not only miss an
opportunity to save a lot of money on new construction and
build much needed housing faster since all-electric
construction is cheaper and saves time avoiding gas
infrastructure. Delaying an electric requirement would
cost Californians $1 billion in unnecessary gas
infrastructure. And it would lock them into 3 million tons
of additional carbon emissions by 2030.

We know that we need to transition off of fossil
fuels, including gas rapidly within 10 years. And if we
want to meet our state's goals and stabilize the climate
California will need to electrify and retrofit 14 million
homes and over 8 billion square feet of commercial
buildings. Why would we even consider allowing new
construction with gas that will make this electrification
challenge even more difficult.

Last September in the midst of another
devastating wildfire season, which we know was far worse as
a direct result of climate change Governor Newsom vowed to accelerate the state's efforts to tackle climate change. Following this direction from the Governor, the CEC should ensure a single all-electric baseline for all building types in 2022 building code.

Thank you so much for the opportunity to comment.

MS. GALLARDO: Thank you.

So next we have Bronwyn and then after that we will have Matthew. Bronwyn, a reminder to spell your name and state your affiliation, if any. Your line is open, please begin.

MS. BARRY: Thank you, can you hear me?

MS. GALLARDO: Yes.

MS. BARRY: Hello, great. Thank you, my name is Bronwyn Barry, spelled B-r-o-n-w-y-n, my last name is Barry, B-a-r-r-y. And I am speaking on behalf of the North American Passive House Network and Passive House California. I’m also a long-term resident of California and an architect based here, working directly here in California on all-electric buildings.

I’m calling to add our voice to the many others on this call who have been urging the CEC to make the leap to an all-electric baseline code for all building type and make it this year.

We already know that the costs are lower. I have
been seeing this in my own projects here since 2013 when I first switched to during all-electric buildings. And we've seen that the hybrid code that the CEC is currently proposing actually costs more, because it requires not just the cost of the appliances themselves, but the actual line service on top of the electric service actually costs a lot more than just an all-electric building.

In terms of urgency, nobody needs to iterate this point. We know that we have no time to lose in addressing our climate emergency. And so locking buildings into another three years of being dependent on fossil fuels cannot be justified on either an economic, social, or moral level. So I remain a little perturbed that the CEC is proposing this incremental approach.

Lastly, in terms of transparency, we cannot call ourselves leaders. At the last workshop the staff for the CEC revealed that our energy code is still based on a 2006 benchmark building. Now that's a 15-year-old building and it would be the equivalent of saying that your cell phone is a Nokia flip phone with an old text type. This is not leadership. This is just an old baseline and if the California Energy Commission does want to play in the mantle of leadership, switching to an all-electric baseline code would be a way to actually finally justify that leadership.

CALIFORNIA REPORTING, LLC
229 Napa Street, Rodeo, California 94572 (510) 224-4476
So I thank the CEC for the consideration. I thank you for the opportunity to do this. And I urge you, in fact I implore you, this is no time to be incremental. Please switch to an all-electric baseline community. Our children and the future will thank you. Thank you very much.

MS. GALLARDO: All right, next is Matthew. And after that will be Coleen. Matthew, a reminder to spell your name and state your affiliation, if any. Your line is open, please begin.

MR. VASILAKIS: Thank you. Good afternoon, Commissioners. This is Matthew Vasilakis, M-a-t-t-h-e-w V as in Victor-a-s-i-l-a-k-i-s. I’m the Co-Director of Policy at Climate Action Campaign, dialing in to urge the Commission to move towards adopting a single all-electric baseline for all building types. Because all-electric buildings are better for public health and critical to protecting us from climate change.

We are in a dire climate crisis and the state must start taking corrective steps to decarbonize our homes and businesses. Not only to reduce emissions and stop climate change, but to improve the health and quality of life for all California.

As countless studies have shown, piping in dangerous methane gas into our homes increases the rates of
asthma, cardiovascular disease and other disorders.

Methane gas is as much a public health crisis as it is a
ccontributor to our climate crisis. I will also highlight
that all-electric homes and buildings are cheaper to build,
operate, and maintain, offering significant savings to
Californians during our prolonged housing affordability
crisis.

Given the many benefits and the dire consequences
of an action, we urge the Commission to adopt a single all-
electric baseline for all building types, thank you.

MS. GALLARDO: Thank you. Next is Colleen, after
that is Bruce. Colleen, a reminder to spell your name, and
state your affiliation if any. Your line is open, please
begin.

MS. FITZSIMONS: Thank you. Hi, my name is
Colleen, spelled C-o-l-l-e-e-n, and Fitzsimons, spelled F-
i-t-z-s-i-m-o-n-s. I’m calling from the San Diego Green
Building Council and I want to thank you for the
opportunity to comment today. And to wish you a good
afternoon and thank you for sitting through all of our
comments.

The CEC should move towards adopting a single
all-electric baseline for all building types. Because all
electric buildings are cheaper to build and operate, better
for public health and critical to protecting us from the
climate crisis. Waiting three more years would not only
miss an opportunity to unleash a faster, cheaper way to
build as already mentioned in this meeting, it would also
cost Californians $1 billion in unnecessary gas
infrastructure. And lock us into 3 million tons of
additional carbon emissions by 2030.

This is a decade where we need to be making great
strides in the other direction. We need to be moving
towards decarbonization instead of locking in more
greenhouse gas emissions. And that's not to mention the
untold impacts to our healthcare system and the costs that
will be incurred addressing the increased rates of asthma,
susceptibility to diseases like COVID and others caused by
burning fossil fuels in the home, as we have been warned by
no less than CARB.

So please get us to an all-electric baseline now,
when we can have the most impact. Thank you so much.

MS. GALLARDO: Thank you. Next, we have Bruce.
After that will be Paul. Bruce, a reminder to spell your
name and state your affiliation, if any. Your line is
open, please begin.

MR. NAEGEL: Hi, can you hear me?

MS. GALLARDO: Yes, we can.

MR. NAEGEL: Okay. Yes, my name is Bruce Naegel,
B-r-u-c-e, last name N-a-e-g-e-l. I’m part of a number of
different sustainability organizations including the fossil
free buildings effort to move the San Jose, Santa Clara and
San Mateo to all buildings being fossil free and moving to
all-electric.

We need this in our portfolio, to move all of the
cities in California to this. One of the more dramatic
cases of this was during the Council meeting at Mountain
View however, which I live in. And the mayor stated she
was voting for an enhanced REACH code, because of this
specific thing that her children were telling her. They
wondered whether they had a place to live in the future.

And we've heard this from a number of people.
That that you know, this is a real concern and we have a
very motivated younger generation, because they're
concerned that there won't be a place. You know, we're
handing them the keys to a planet that has failed at that
point.

One of other things that’s kind of interesting is
we need to deal with the equity issue. As was mentioned
before gas stoves emit all kinds of poisonous things. One
of the challenges is that in low-income housing the
kitchens smaller, which concentrates the -- be even more so
it makes it more of an issue. So we really need to do
that.

If we leave -- we only have the rich people get
the all-electric houses then as the number of people that
are buying gas goes down, what will happen is the price per
unit of gas will go up and the people that are left behind
will be the poor ones who are not going to be able to
afford the increase in gas pricing.

We’re in a unique position at this point, after
four years of leadership that would prefer that climate
change was a figment of his imagination. We now have one
who believes in the fact that it is something that needs to
be done. He is doing things to accelerate that. We need
to start raising these kinds of issues in leadership in
California, because this is a time we have when we can
actually move something forward.

We've also had some nasty explosions along the
way. Gas is not the most favorite of things. There was a
massive fire 10 or 11 years ago in San Bruno and a massive
set of leaks in Aliso Canyon. So there are some definite
safety issues beyond just health issues that we should be
concerned about.

I witnessed something that could have been a
really nasty explosion. Thank goodness, it wasn't.
Somebody ran into a pipe where I was working, and there was
gas leaking out of a pipe (indiscernible) --

MS. GALLARDO: Bruce, your time is up.

MR. NAEGEL: Okay, thank you.
MS. GALLARDO: Sorry, this is the Public Advisor.

Thank you, Bruce.

MR. NAEGEL: Thank you.

MS. GALLARDO: Thank you.

Next is Paul, after that will be Tom. Paul, a reminder to spell your name and indicate your affiliation, if any. Your line is open, please begin.

MR. WERMER: Yes, hello. My name is Paul, P-a-u-l, Wermer, W-e-r-m-e-r. And I'm with the San Francisco Climate Emergency Coalition. It's difficult (indiscernible) in a comment section to offer some different insights. But what I will say is I started paying attention to climate change back about 1993 as I was I was working in the semiconductor industry managing projects in the supply chain.

As I've been following it closely since 1993 and impacts has happened faster and toward greater extent, than have been predicted. For every prediction that has been made. We're seeing this now, when the 2050 or 2045 goals that have been set clearly are inadequate.

California, the leadership of California in energy efficiency goes back a long ways. And California is to be commended. They even had the wisdom to prohibit electric heating in the days when power plants were very, very dirty. And it was actually more carbon efficient to
use gas heat in the home. That has changed.

It is really a critical issue in terms of conversion to recognize that the cost of ownership of the house is more than just the price of the new house. It's also the cost of any capital changes that will have to be made. And by building a mixed-fuel house in 2023 or 2024, people will be incurring significant costs for the conversion to electricity in 2030 or 2035. So that needs to be factored in.

It’s important to send a clear message to the supply chain, so they can be ready to support the need. Yes, the supply chain might not quite be where it needs to be today. But if it is clear that California will be mandating all-electric in the code that means buildings coming into place in late 2022 or 2023. That gives them two years notice, which is ample time to figure out how to ramp up production, provide training schedules, and build up a skilled workforce, both with contractors (indiscernible) --

MS. GALLARDO: Paul? Paul, I hate to interrupt, but your time is up. Sorry, our timer froze, but we --

MR. WERMER: Okay, thank you.

MS. GALLARDO: Thank you. I just want to be fair to everybody.

All right, next up is Tom and then after that...
will be Wesley. Tom, a reminder to spell your name,
indicate your affiliation if any. Your line is open,
please begin.

MR. KABAT: Hello, my name is Tom Kabat, spelled
T-o-m K-a-b-a-t. I’m a retired gas and electric utility
resource planner, now rising to the challenge of
volunteering in various climate preservation efforts.

What I’ve noticed in my long career in energy is
that as California starts to make the important progress
towards climate preservation, we need to look carefully at
the difference between the climate crisis that we face now
and the energy crisis we faced in the 1970s through the
2000s. And that was the crisis that led to the formation
of the Energy Commission.

That earlier crisis was essentially just an
energy gap problem when we look at it from a large view.
It was a gap problem, because the US had about 15 percent
less domestic energy than its energy consumption. And that
led to the Charter of the CEC.

The US was importing about 15 percent of its
energy and this energy gap problem was solvable with
incremental improvements in efficiency. So we did small
and slowly phased in efficiency improvements, because we
saw it was the solution to the old problems back then.

We did not know about the climate problem back
then either. We were prevented from knowing. But also there's a downside to going to slow. And, you know, if we went a little too slow back then, the downside was just a little more energy cost. Now we're up against the climate crisis. And the downside of going to slow is losing and it getting out of control and going around the bend.

So the climate crisis requires that we move fully away from the netting (phonetic) technologies and that we have little time to make mistakes that we have to undo later. We need your bold leadership now to rise to this different kind of challenge presented by the climate crisis.

The idea of making incremental change for this problem is similar to driving towards a 90-degree turn in the road and deciding to compromise and turn your steering wheel, as though it's only 45 degrees. We can see the error of compromise when full action is what's really required. So Californians are depending on your ability to turn the wheel as far as needed to keep us on the road.

And that prudent navigation means adopting an all-electric baseline for all building types in the 2022 code. Any lessons illustrate (indiscernible) --

MS. GALLARDO: Tom, your time is up. Apologies for interrupting. Okay, thank you, Tom.

Next is Wesley, after that is Ellyn. Wesley,
reminder to spell your name, state your affiliation if you have one. And then your line is open, you may begin.

MR. REUTIMANN: Hi, good afternoon Commissioners and staff. My name is Wes Reutimann, W-e-s R-e-u-t-i-m-a-n-n. And I’m calling to comment on behalf of Active San Gabriel Valley. We’re a play-based nonprofit organization committed to promoting sustainability, equity and livability in the San Gabriel Valley and East Los Angeles County.

Our region of California includes over 2.3 million residents and it's one of the most diverse places in the United States. It also includes some of the most pollution burdened cities in California and lies within the most polluted air basin in the U.S.

Our organization also recently worked with UCLA to conduct an indoor air quality study in older homes and apartments, in two of the most pollution burdened communities in our region and state in the unincorporated communities of Avocado Heights and Bassett.

That study found that homes with gas appliances experienced indoor air quality that was worse than outdoors, despite us living in one of the most polluted outdoor air bases in the country. And this is especially the case during the colder months of the year.

A number of speakers have already outlined the
many significant long-term health impacts of pollutants from gas appliances, particularly gas stoves. And these chronic illnesses are incredibly costly for our region and our communities. In L.A. County alone its associated with billions in health care costs and lost productivity annually.

And, in particular, this is impacting lower-income families who are older, are more likely to live in older homes with smaller unit sizes, leaky gas appliances and inadequate stovetop ventilation.

However, if we can move expeditiously to adopt an all-electric code standard, we will benefit from immediate long-term health improvement in so far as indoor air quality is concerned. And there, of course, are all the other associated benefits to climate and cost that would be paired with the adoption of that type of a standard.

As a community-based organization that’s dedicated to improving the public health and well-being of residents in the East Los Angeles County, we encourage the Commission to prioritize the health of all California residents and develop more affordable sustainable and healthy housing.

We strongly urge the Commission to update the 2022 code and establish 100 percent electric baseline for all homes and buildings. Thanks for your time and
MS. GALLARDO: Thank you.

Next up is Ellyn, after that will be Alice.

Ellyn, a reminder to spell your name and state your affiliation, if any. Your line is open and you may begin.

MS. DOOLEY: Thank you. Thank you to the Commissioners. My name is Ellyn Dooley, spelled E-l-l-y-n, Dooley is D-o-o-l-e-y. And I am appreciative of the opportunity to speak on behalf of the Citizens Climate Lobby San Mateo County Chapter. But, more importantly as an individual, homeowner and grandmother of two small children whom I dedicated my retirement years to working on the climate, to ensure them a healthy future.

I have a real time example. I just came from a local appliance store, because like others I'm starting to transition out of my gas appliances. And this store did not have one inductions range on the floor. It was loaded with gas.

And when I mentioned the REACH codes that are being passed and that the CEC is right now -- actually while I was in the store talking about this issue and planning to update the codes for 2022, he had no idea. And he said, “Oh, I think people can get grandfathered in if they have a gas range.” And I told him that was about to change and that they really might want to start considering
at least displaying some ranges on the floor.

So I think the CEC has a responsibility also to small business to prepare them for what's to come. Because this transition is coming and rather than having them lag behind and invest in outdated appliances for their stores, this does them in a great disservice.

So I really encourage you, like everybody else who said to now and for 2022 pass and all-electric single baseline code. Because there is really no good reason why we can't do that or shouldn't do that. We need to be ahead of the game not lagging behind.

So that's my comment. I appreciate your taking the time to hear me. Thank you.

MS. GALLARDO: Thank you. And next is Alice.

After that will be Carlos. Alice, a reminder to spell your name, state your affiliation if any. Your line is open, you may begin.

MS. SUNG: Yes, thank you for listening. My name is Alice Sung, A-l-i-c-e S-u-n-g. I am a recovering schools architect, and now principal of Greenbank Associates. I'm speaking as a mother and a member of the AIA East Bay Committee on the Environment. And I'm here to speak again in support of the CEC adopting a single all-electric baseline for all building types, in particular public buildings and in specific public schools.
For all of the reasons that everyone here speaking today has enumerated upon, for the savings both of electricity and greenhouse gas, as well as importantly for public health and for the social equity aspects.

I'm here to also say that opponents may say, how can we afford to do this? And I say how can we afford not to. Since I’ve last spoken to you, it's been a couple of months, a new federal administration has actually moved forward with a bold climate action plan. And I urge you to align ourselves, align the CEC as well as with the state in actually making this adoption to all-electric baseline code.

The federal administration will be considering a landmark infrastructure bill, I believe it's HR 2, that could possibly send $5 billion to the State of California for the rebuilding of America’s schools, including all of our lower-income and disadvantaged communities’ schools in the State of California.

So on behalf of the 6.3 million public school children in California I urge the CEC to prepare, to prevent the $5 billion of new investments over the next five years to be invest in stranded gas assets, by adopting an all-electric baseline code. In particular for public school buildings and preventing further harm to our already distressed public schools.
And lastly, I'd like to leave this by reminding you of the words of Greta Thunberg, since school kids are probably just now getting offline from their school classes, and quote something from her “Our houses on fire,” speech at the World Economic Forum almost well over two years ago today.

MS. GALLARDO: Alice, your time is up. As long as it's quick. Your time is up, Alice.

MS. SUNG: Yes. “I don't want your hope, I want you to be hopeful. I want you to act as if you would in a crisis. I want you to act as if our house is on fire, because it is.” Thank you.

MS. GALLARDO: Thank you.

Next is Carlos. After that will be Melissa. She'll be the last commenter on the Verizon line. So Carlos, a reminder to spell your name and state your affiliation, if any. Your line is open, please begin.

MR. DAVIDSON: Thank you for taking public comments today. My name is Carlos Davidson, C-a-r-l-o-s D-a-v-i-d-s-o-n. And I’m with the Pacifica Climate Committee, a citizens group working on climate change issues in the City of Pacifica, San Mateo County. I’m also a professor of environmental studies at San Francisco State where I teach on climate change and sustainability. But I’m speaking today is a private citizen for the Climate
Committee.

All-electric buildings will save homeowners money on building costs, and then save residents on energy costs. But even though there are savings that doesn't mean we can just count on the market to bring about the changes that we need. There are all kinds of market failures and public benefits in housing construction, that mean we need government regulation. Just as with earthquake and fire safety we need you to act and we need strong government regulation. So I urge the CEC to adopt an all-electric baseline for all buildings for 2022. For the financial savings, for improved public health. And most importantly, at the moment for the critical need to reduce greenhouse gas emissions, to address the climate crisis.

Thank you very much.

MS. GALLARDO: Thank you.

Last, we have Melissa. And Melissa, a reminder to spell your name, state your affiliation if any. Your line is open, you may begin.

MS. ELDER: Good afternoon, Commissioners. My name is Melissa Elder, M-e-l-i-s-s-a E-l-d-e-r. And I’m a volunteer with the Sunrise Movement San Diego and a part of the San Diego Building Electrification Coalition. And we know we have a very short window to act in order to protect a livable future for the youth, and for the most vulnerable
populations. We should be moving towards adopting a single all-electric baseline for all building types. Because they're cheaper to build, they're better for public health, and critical to protect us from the climate crisis.

Growing up in rural Missouri, I’d always looked up to California as being a leader for social and environmental issues. This is an opportunity to take appropriate steps to preserve our future for our children and our youth.

As Governor Newson mentioned last year that this is a damn climate emergency and we need to treat it as such. We don't have time to take an incremental approach when mandating electric appliances. The people are suffering right now with the immediate effects from gas stoves, giving children like my little nephew asthma.

Researchers found that gas stoves without properly vented exhaust hoods are common in inner-city households. And they’re already experiencing environmental racism, increased rates of asthma, and other health concerns. So we need to make sure that we're taking all the necessary steps to protect our most vulnerable populations, and the children who are born into situations, they had no choice.

The youth have contributed the least to the climate disaster. And the least we can do is make sure
that policies like the all-electric building closed starting 2020 will start to slow this upcoming train wreck to our futures. Thank you.

MS. GALLARDO: Thank you.

That was the last on the Verizon line. Again, this Noemi Gallardo, Public Advisor. I will read one comment that we received. I’ll start now.

This is from Helena Birecki, H-e-l-e-n-a B-i-r-e-c-k-i, a member of Climate Reality Project Bay Area.

“As a California resident, I am extremely concerned by the staff proposal for 2022 building code standards. The proposal incorporates into the standard design for new construction only a single electric appliance, either a heat pump water heater or heat pumps space heater. And the incorporated appliance is the one that is expected to use less energy in its climate zone.

“This proposal is insufficient and dangerous. It sets us up for failure to protect our climate and failure to protect public health and safety.

“Gas lines rupture, explode and kill people. An ever-present danger, which is heightened by the wildfires and earthquakes endemic to California.

“The use of natural gas appliances indoors creates dangerous levels of indoor air pollution, which harms people’s health in an inequitable way due to the fact
that low-income people of color in particular tend to live
in smaller apartments, which leads to worse ventilation
than a large space, even in a new building natural gas
leaks. And because methane is 84 to 86 times more potent
greenhouse gas and carbon dioxide over a 20-year period.
even at the low estimate of 3 percent leakage between
construction site and home use, the global warming effect
of the leaked methane is an additional 250 percent on top
of the effects of the carbon dioxide produced by combusted
gas.

“We cannot afford this climate disaster. All-
electric construction has been shown to be more affordable
than gas for both builder and residents. All-electric
construction is safer than gas for both workers and
residents. All-electric construction is healthier for
present and future Californians.

“I strongly urge the CEC to substantially
strengthen the staff proposal prior to its adoption. The
standard design for new construction should be all-
electric. Thank you.”

That ends the public comment, Chair, I’ll turn
it back to you.

CHAIR HOCHSCHILD: Thank you.

Let’s go to Chief Counsel’s Report. Darcie, are
you there?
MS. HOUCK: Thank you, Chair. Yes, I’m here. It looks like the video doesn’t let me take it off, so I’ll just make my comments.

Given this is my last meeting in my role as Chief Counsel, I want to thank you for bearing with me to make some additional comments.

Oh, now there is it. There we go, thank you.

So again, I just want to state that it's been a real honor to be able to serve as the Energy Commission's Chief Counsel. This place really is very special to me. And I want to thank each of you for all of your dedication for California, and meeting California or pursuing California clean energy goals.

And the support that you've not just shown me as Chief Counsel, but all of the staff here at the Commission. This is just such an amazing place to be.

I want to particularly also thank Drew Bohan. I know he wasn't here earlier for the comments, but he has just been a tremendous colleague, partner and friend to work with. And, you know Commissioner Siva Gunda and Assistant Chief Counsel Allan Ward, Assistant Chief Counsel Linda Barrera and retired annuitant Caryn Holmes. Without them, I don't think we could have transitioned so seamlessly during all of the chaos we dealt with last year. And there's just so many amazing people here that I am
really going to miss.

And I just want to also note that Noemi, Carousel and I all came on board at the CEC at roughly the same time. And I've had the pleasure of being able to work with and through a number of things with both of them over the last year. And I just have a tremendous amount of respect for these women and consider them not just colleagues, but friends.

I am really going to miss everybody here at the Energy Commission, while at the same time I really look forward to being able to work with you in my new role over at the Public Utilities Commission. So thank you for giving me this opportunity to serve the state as the Energy Commission’s Chief Counsel.

And I'm going to end with that, before I start crying so thank you.

CHAIR HOCHSCHILD: Thank you, Darcie. That was beautiful.

Okay, everybody we're adjourned, thank you.

(The Business Meeting adjourned at 3:22 p.m.)
CERTIFICATE OF REPORTER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 22nd day of February, 2021.

[Signature]

MARTHA L. NELSON, CERT**367
TRANSCRIBER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 22nd day of February, 2021.

Myra Severtson
Certified Transcriber
AAERT No. CET**D-852