

DOCKETED

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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) March 17, 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, MARCH 17, 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
Linda Barrera, Chief Counsel
Lisa DeCarlo, Staff Counsel
Aleecia Gutierrez, Assistant Deputy Director
Noemi Gallardo, Public Advisor
Cody Goldthrite, Secretariat

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1 P R O C E E D I N G S

2 MARCH 17, 2021

10:02 a.m.

3 CHAIR HOCHSCHILD: Welcome, good morning. And
4 everyone, MS. GALLARDO: Chair, we're going to play the
5 video first. Apologies.

6 CHAIR HOCHSCHILD: Sure, yeah. Go ahead.

7 (Start of Introductory Video)

8 MS. MURIMI: The California Energy Commission's
9 Business Meeting will begin shortly. Thank you for your
10 patience.

11 Today's Business Meeting is being held remotely.
12 To make public comments please call the Verizon line at
13 888-823-5065. Again, that's 888-823-5065. The pass code
14 is "Business Meeting." Provide the operator your name, the
15 organization you are affiliated with, if any, and the item
16 number or numbers on which you seek to make a comment.
17 Also tell the operator if you represent the federal or
18 state legislature, a tribal nation or a California tribal
19 government, state agency or county or city government.

20 The lines for each person seeking to make a
21 comment will be opened one at a time. After the meeting
22 facilitator calls your name your line will be opened.
23 Please restate your first and last name and spell your
24 names. Also indicate your affiliation, if any.

25 Finally, to help ensure you're heard clearly do
26 not use the speakerphone feature when talking. Talk

1 closely into the phone. And to avoid an echo or feedback
2 loop leave Zoom or mute Zoom while making your public
3 comment.

4 Welcome to the California Energy Commission's
5 Business Meeting. The meeting will now begin.

6 (End of Introductory Video)

7 CHAIR HOCHSCHILD: Thank you, Dorothy. I feel
8 like our introductory video has gotten flashier and
9 flashier. Thank you for that.

10 And good morning to everybody. Welcome to our
11 March Business Meeting and happy St. Patrick's Day. My
12 thanks to our Public Advisor Noemi Gallardo who reminded me
13 of that, so I ran down and quickly got my one green tie on.

14 Commissioner Monahan will be a little late in
15 joining us this morning. She's presenting to the
16 Legislature, but should be on soon. I think Commissioner
17 Douglas, I'm hoping is on now, she was having a technical
18 issue. But we'll go ahead and get underway with the Pledge
19 of Allegiance, led by Commissioner McCallister.

20 (Whereupon the Pledge of Allegiance is recited.)

21 CHAIR HOCHSCHILD: Thank you, Commissioner.

22 Again, with COVID obviously vaccinations are
23 rolling out at a good healthy clip now, about 2 million a
24 day. But we are not through this thing yet so please
25 everyone continue to exercise diligence, wear a mask, wash
26 your hands, keep your distance and visit [covid19.ca.gov](https://www.covid19.ca.gov) for

1 more information.

2 Another development in helping our community
3 overcome this pandemic is a website created by the
4 Governor's Office called "My Turn," where you can sign up
5 to be notified when you're eligible to get vaccinated. And
6 to schedule vaccination appointments you can go to
7 MyTurn.ca.gov.

8 Today's Business Meeting being is being held
9 remotely without a physical location for any participant
10 consistent with Executive Orders N-25-20 and N-29-20 and
11 the recommendations from the California Department of
12 Public Health to encourage social distancing in order to
13 slow the spread of COVID-19.

14 The public may participate and/or observe the
15 meeting consistent with the direction of these executive
16 orders. Instructions for remote participation can be found
17 in the notice for this meeting, and as set forth on the
18 agenda posted on the Commission's website link for the
19 Business Meeting.

20 We're using a combination of Zoom and Verizon for
21 remote access. If Zoom shuts down today we'll continue our
22 meeting on our Verizon phone line. Call Verizon at 888-
23 823-5065. The pass code is "Business Meeting."

24 The Commission values public participation and
25 stakeholder engagement pursuant to California Code of
26 Regulations Title 20, Section 1104(e). Any person may make

1 oral comments on any agenda item. And to ensure the
2 orderly conduct of business such comments will be limited
3 to three minutes or less per person as to each item listed
4 on the agenda that is voted on today.

5 Any person wishing to comment on information
6 items or reports, which are non-voting items, shall reserve
7 their comment for the general public comment portion of the
8 meeting agenda and shall have three minutes or less total
9 to state all remaining comments. Again, to provide public
10 comment please call our Verizon phone line at 888-823-5065.

11 Now before turning to the agenda items I'd like
12 to share with everyone today Commissioner Monahan is
13 presenting at the Assembly Budget Committee Subcommittee,
14 and will join as that concludes.

15 And I'm also happy to share, which we're going to
16 do with every meeting going forward, the total amount of
17 money that if everything's voted out today will be that's
18 \$83 million from today's meeting. All of which is going to
19 help with California's economic recovery and advance our
20 innovation sector.

21 So moving on to Item 1 the Consent Calendar,
22 Madam Public Advisor, do we have any public comments on
23 Item 1?

24 MS. GALLARDO: This is Noemi Gallardo the Public
25 Advisor. There are no public comments for Item 1.

26 CHAIR HOCHSCHILD: Okay, unless there's any

1 Commissioner discussion can we have a motion? Commissioner
2 Gunda, would you be willing to move Item 1?

3 BOARD MEMBER GUNDA: Good morning, Chair. Yes, I
4 would like to move Item 1.

5 CHAIR HOCHSCHILD: Good. Commissioner
6 McAllister, would you be willing to second?

7 BOARD MEMBER MCALLISTER: I'll second Item 1.

8 CHAIR HOCHSCHILD: Okay. All in favor say aye.
9 Commissioner Gunda?

10 BOARD MEMBER GUNDA: Aye.

11 CHAIR HOCHSCHILD: Commissioner McAllister?

12 BOARD MEMBER MCALLISTER: Aye.

13 CHAIR HOCHSCHILD: Commissioner Douglas?

14 BOARD MEMBER DOUGLAS: Aye.

15 CHAIR HOCHSCHILD: And I vote "aye" as well.

16 Commissioner Monahan is absent.

17 Let's move now to Item 2, SB 100 Joint Agency
18 Report. Let's welcome Terra Weeks.

19 MS. WEEKS: Good morning Chair and Commissioners.

20 I'm Tara Weeks, Senior Advisor to Chair Hochschild and

21 Project Manager for the 2021 SB 100 Joint Agency Report.

22 And I'm very excited to announce that the final report,

23 along with a 12-page summary document were released earlier

24 this week. And today we'll provide a quick overview of the

25 report. And I encourage everyone to review the full

26 documents on the Energy Commission's website. Next slide,

1 please.

2 So first a refresher that SB 100 establishes a
3 policy that eligible, renewable and zero-carbon resources
4 to buy 100 percent of all retail sales and electricity
5 procured to serve state loads by 2045.

6 It also expands the RPS to 60 percent by 2030 and
7 requires the Energy Commission, Public Utilities Commission
8 and Air Resources Board to use existing programs to achieve
9 a policy and issue a joint SB 100 report every four years.
10 Next slide, please.

11 SB 100 is central to achieving the state's goal
12 of an economy-wide carbon neutrality, using clean
13 electricity to increasingly power transportation, buildings
14 and industrial operations, helps decarbonize these sectors
15 which, along with electricity generation account for 92
16 percent of the state's total carbon emissions. Next slide,
17 please.

18 In addition to serving as a key pillar in the
19 state's efforts to mitigate climate change SB 100 can
20 benefit residents across the state by improving public
21 health, primarily through reductions in criteria air
22 pollution as clean resources to replace fossil fuel in
23 generating electricity, advancing energy equity by moving
24 towards the 100 percent target in ways that help ensure
25 equitable outcomes such as alleviating the public health
26 burden in disadvantaged communities where a

1 disproportionate number of the state's fossil gas plants
2 are located. And it can support a clean energy economy by
3 helping to restore thousands of clean energy jobs lost
4 during the pandemic and create many more high-quality jobs
5 and career pathways.

6 And in a moment we'll talk about the magnitude of
7 resources that we're projecting that we'll need. And while
8 it will certainly be a challenge to meet this goal it also
9 presents a huge economic and workforce opportunity. Next
10 slide, please.

11 So now on to the report itself. As mentioned,
12 this report is the first step to evaluate the challenges
13 and opportunities in achieving 100 percent clean
14 electricity by 2045. It includes an initial assessment of
15 the additional energy resources and the resource building
16 rates needed to achieve the goal, along with an initial
17 assessment of associated costs. So I want to point out
18 that the estimates in this report are intended to serve as
19 a foundation for future work and will change over time as
20 additional factors such as system reliability, land use,
21 energy equity and workforce needs are more closely
22 examined. Next slide, please.

23 This report was informed by a diverse array of
24 interests through over a year of public workshops,
25 including scoping workshops held across the state.

26 The agencies also consulted with the California

1 Balancing Authorities as required by the statute, and the
2 Disadvantaged Communities Advisory Group, which advises the
3 CEC and CPUC on energy equity issues. And so we really
4 appreciate the engagement from both of these groups, as
5 well as the public and other stakeholders throughout the
6 process. Next slide, please.

7 And so now I'll hand it over to Dr. Liz Gill, who
8 served as the Technical Lead for this report, and will run
9 through our initial findings.

10 MS. GILL: All right, thank you, Terra.

11 So getting into the technical work we modeled
12 renewable and zero-carbon resources to meet our clean
13 electricity needs. In order to qualify these resources
14 must be either RPS eligible or have zero on-site greenhouse
15 gas emissions.

16 For our core scenarios we only included
17 commercialized technologies with publicly available and
18 vetted cost and performance data. Specifically, these
19 resources included new and existing solar photovoltaic,
20 existing solar thermal, new and existing onshore wind and
21 new offshore wind, new and existing geothermal, new and
22 existing bioenergy, new green hydrogen fuel cells, existing
23 small and large hydro facilities, and existing nuclear
24 power plants. And then this list will continue to be
25 updated in the future as emerging technologies mature and
26 come to market. Next slide, please.

1 So what our modeling results told us was that in
2 order to meet our SB 100 goals while electrifying large
3 portions of the rest of the economy, California will need
4 to roughly triple its current electric grid capacity.

5 On this slide we see the projected new clean
6 energy resources in comparison to the clean energy
7 resources already on the California grid today. So looking
8 at 2045 the SB 100 modeling projected that we'll need
9 nearly 70 gigawatts of new utility scale solar, nearly 30
10 gigawatts of new customer solar, nearly 50 gigawatts of
11 battery storage, 4 gigawatts of long-duration storage, 12.6
12 gigawatts of onshore wind, 10 gigawatts of offshore wind,
13 and about 100 megawatts of geothermal.

14 All of this in order to meet our 100 percent
15 renewable and zero-carbon electricity target in 2045. And
16 then these resources are projected to increase annual costs
17 by about 6 percent over the 60 percent RPS baseline
18 scenario in 2045. Next slide, please.

19 So in order to achieve this massive build-out of
20 renewable energy and storage resources, this will require
21 sustained record-setting build rates through 2045,
22 including a tripling of solar and wind build rates from our
23 ten-year historic average, and an eight-fold increase in
24 battery build rates from 2020. Next slide, please.

25 In addition to modeling meeting our core SB 100
26 scenario, the joint agencies explored sensitivities, as

1 well as several scenarios outside the scope of SB 100. One
2 of these sensitivities was a high-demand flexibility
3 scenario that included six gigawatts of load flexibility.
4 This additional flexibility resulted in less batteries,
5 increased gas plant retirements, and lower overall costs
6 compared to the SB 100 core scenario.

7 The joint agencies also modeled several study
8 scenarios outside the scope of SB 100 that are intended to
9 inform broader state planning efforts on energy, climate
10 and public health. So these included a no-combustion
11 scenario where all combustion resources, including gas-
12 fired power plants, will retire by 2045. The initial
13 results indicated that this scenario would increase annual
14 costs by about 12 percent in 2045 compared to that SB 100
15 core scenario.

16 Next, zero-carbon firm resource scenarios were
17 included and have the option of a generic zero-carbon firm
18 resource that represented the commercialization of emerging
19 technologies such as green hydrogen combustion or natural
20 gas with 100 percent carbon capture, or a reduction in the
21 costs of existing firm resources such as geothermal. When
22 these resources were included it decreased annual
23 electricity costs by about \$2 billion, or about 3 percent
24 in 2045.

25 And then finally the joint agencies also modeled
26 several scenarios that accelerated the SB 100 target to

1 2040, 2035 and 2030. These results indicated that while
2 these targets may be achievable they may also increase
3 overall costs.

4 And again, all these findings are preliminary and
5 do require further analysis. Next slide, please.

6 So here are the key takeaways from the SB 100
7 modeling. First, this initial analysis suggests that SB
8 100 is technically achievable through multiple pathways.

9 Second, in order to meet SB 100 construction of
10 clean electricity generation and storage facilities must be
11 sustained at record-setting rates.

12 Third, modeling showed that diversity in energy
13 resources and technologies lowers overall costs, but also
14 showed that retaining some natural gas power capacity may
15 minimize costs while ensuring uninterrupted power supply
16 during the transition to 100 percent clean energy.

17 However, increased energy storage and advancements in zero-
18 carbon technologies may reduce those natural gas capacity
19 needs.

20 And finally, further analysis is needed as this
21 is just the initial assessment of the 2045 SB 100 policy.
22 Next slide, please.

23 So specifically the recommended future analysis
24 includes first verifying that scenario results satisfy the
25 grid's electric reliability requirements across a range of
26 conditions.

1 Second, continuing to evaluate the potential
2 effects of cost-saving emerging resources such as offshore
3 wind, long-duration storage, green hydrogen technologies,
4 and demand flexibility.

5 Third, assessing environmental, social and
6 economic costs and benefits of the additional clean
7 electricity generation and storage needed to implement SB
8 100.

9 And finally holding annual workshops to support
10 alignment among the joint agencies and continuity between
11 SB 100 reports.

12 And with that I will hand it back to Terra.

13 MS. WEEKS: Thanks, Liz.

14 So this report was a big lift and required
15 ongoing coordination between all three agencies, so I just
16 want to take a couple minutes to recognize the team behind
17 it. And you can go to the next slide, please. Thanks.

18 So first, of course, I'd like to thank our joint
19 agency principals Chair Hochschild, Chair Randolph, Chair
20 Nichols and Commissioner McAllister for your leadership
21 moving us to a 100 percent clean energy future. And prior
22 to his appointment, Commissioner Gunda was also down in the
23 trenches with us on this report. So thank you,
24 Commissioner, for really getting this effort started,
25 working out the initial scope and roles for each of the
26 agencies and for all your tireless cat herding to keep us

1 all aligned.

2 And I won't list everyone due to time, but I
3 thank you to our counterparts at the CPUC and CARB,
4 including Simon Baker and Rajinder Sahota, who initiated
5 the scoping process, coordinated between related efforts,
6 including IRP and the Scoping Plan and provided support
7 throughout the process. It's been really great getting to
8 know our colleagues across the agencies a little bit
9 better. And we look forward to replicating this type of
10 coordination on other efforts.

11 And, of course, a big thank you to our terrific
12 core SB 100 team at the Energy Commission. And again I
13 won't be able to list everyone who had a hand in this
14 report, but I want to recognize a couple people in
15 particular.

16 First, Judy Grau and Jim Bartridge who were the
17 first ones to really put pen to paper, fleshing out the
18 outline, providing the early foundation for the report, and
19 then supporting report development throughout. And
20 congratulations to Judy, who also just retired.

21 And to Mark Kootstra for overseeing the scope and
22 execution of the analysis. And for teaching me capacity
23 expansion modeling 101, which was very much appreciated
24 when I was first getting started on this project.

25 And a thank you to Noemi Gallardo and Dorothy
26 Murimi for all their help capturing equity considerations

1 in their report and coordinating with DACAG and other
2 stakeholders.

3 And to the media team, of course, for making the
4 report look like it wasn't just made by a bunch of energy
5 wonks. And again, they really had a hand in the summary
6 documents. So I encourage folks to check that out on our
7 website.

8 And I just want to close with a particular
9 recognition of Aleecia Gutierrez and Liz Gill. Aleecia
10 really just has an amazing ability to fill gaps and do
11 whatever is needed. She wrote large sections of the report
12 over much of our engagement with stakeholders, and just
13 always kept a really positive kind of can-do attitude. So
14 it's really just a pleasure working with her.

15 And to Liz, I remember on what I think was Liz's
16 first day at the Energy Commission, a little over a year-
17 and-a-half ago. And she joined us first thing for a 9:00
18 a.m. SB 100 meeting and just really jumped right in. And
19 she's been such an asset to the team. She really has the
20 ability to understand technical analyses, and then parse
21 out key findings and communicate them clearly. So I'm just
22 really grateful to have had her on the team.

23 And with that I will close out and pass it back
24 to you Chair Hochschild for any comments or discussion.

25 CHAIR HOCHSCHILD: Well, thank you so much for
26 your incredible dedication and leadership, and Liz as well.

1 I know I speak for all my colleagues, not just at the
2 Energy Commission but at the PUC and CARB as well, in
3 thanking the whole team.

4 You know, the analogy of a report like this it's
5 somewhere between a massive construction project and
6 childbirth or something like that, just the amount of work
7 that goes into it and all of the team effort. And I want
8 to say it's hard enough to do something like this just
9 within one agency, but coordinating across multiple
10 agencies and doing all the public outreach as well. Eight
11 workshops all over the state, taking input from all kinds
12 of stakeholders really contributed to this. I'm really,
13 really proud of you guys and the results in this report.

14 And I know at the risk of repeating myself, I
15 think we're in a moment where what was previously
16 considered mythology, the vision of getting to 100 percent
17 clean energy just a couple years ago, I was in a lot of
18 those meetings where it was just being widely dismissed.
19 It's now law in 17 states and it's President Biden's energy
20 goal for the United States. And I think California can
21 take great credit for being a part of driving that vision
22 forward. And this report, I think, will be a really
23 important milestone as well that I hope gets a lot of
24 attention. It certainly deserves it.

25 I wanted to also thank my colleagues, starting
26 with Commission McAllister, who's really provided

1 substantial input and attention to detail and just
2 throughout the whole process has been a terrific partner.

3 Commissioner Gunda, you were involved in this in
4 your previous role overseeing the EAD, and just phenomenal.

5 And Commissioner Douglas, who continues to do
6 incredible work around renewable energy planning. And so
7 much of your early work on the DRCP has proven so
8 prescient, getting ahead of this whole process. And I just
9 want to thank all of you and then all the staff.

10 And so with that I open it up to any comments or
11 questions or discussion from my colleagues.

12 BOARD MEMBER MCALLISTER: Did we want to take
13 public comment on this at all?

14 CHAIR HOCHSCHILD: No, we're not taking public
15 comments on (indiscernible).

16 BOARD MEMBER MCALLISTER: Okay. Okay, great.
17 I'm happy to start, I guess at risk of repeating a little
18 bit, but hopefully not too much. Really, thanks to the
19 whole team. I mean Terra and Aleecia, Liz and the former
20 Siva. Really, just the amount of teamwork and collaboration
21 and communication, I mean just the density of the
22 communication sustained over the whole period of the
23 development of this report was just impressive. And I
24 think the collateral benefits of that are just going to
25 become more and more apparent over time in all sorts of
26 arenas, not just in the follow-up to SB 100, but really

1 across the agencies as we collaborate on more and more
2 things.

3 So I think that is kind of the model that this
4 presents for inter-agency collaboration I think is really
5 kind of a meta-benefit of this report. And so I think just
6 watching that evolve has been really, really terrific to
7 see. And I think you know we've created a really good
8 relationship across the agencies.

9 And we do have big challenges. We have other
10 large infrastructure conversations that we need to have
11 going forward, as in the transition. So I think it bodes
12 well for those conversations, which there aren't easy
13 solutions. And this report really lays out kind of
14 different pathways that the state could take.

15 So I really see this report as foundational. You
16 know, the cleaning up of the electricity grid is
17 foundational for our whole energy transition to zero
18 carbon. And we see that up and down, all the way down to
19 individual electrification, individual loads, and the way
20 that we plan our distribution sub-transmission,
21 transmission grid. And so this really is a backbone of an
22 overall strategy for the state, and certainly the energy
23 sector, it's central. So really I think it's hard to
24 overstate that the support really puts a great marker in
25 the ground.

26 And just a couple of other things. I think the

1 way we approached it with the scenarios, and the way we
2 sort of determined which scenarios we were going to put as
3 core scenarios and which were study scenarios, how we ended
4 up kind of defining the different buckets of resources, the
5 sort of generic zero carbon. It really does lay a nice
6 platform or good foundation for having those individual,
7 those specific conversations going forward. There's a lot
8 of discussion about hydrogen these days, so we have this
9 path forward. We can have a specific hydrogen conversation
10 that's all into that piece of the market with those
11 stakeholders. But then has a really clear way to loop back
12 to the update of SB 100. And so the foundational -- just
13 the platform is there for us all to dwell in over a fairly
14 long period of time, which is what it's going to take to
15 get there.

16 I particularly appreciate -- this won't be a
17 surprise to anyone, but I really appreciate the load
18 flexibility scenario. I think we have a lot of work to do
19 to enable load flexibility as a core strategy, both -- well
20 really for three things. And then they're confirmed by the
21 report sort of preliminarily, but I think they will be
22 proved out. To lower costs overall for the grid, which
23 obviously for us today is a key need in California as we're
24 seeing rates start to go up over time.

25 And decarbonization in the near term, load
26 flexibility does enable us to utilize decarbonized energy

1 when it's available and avoid using more carbon-intensive
2 energy when that's all there is on the grid.

3 And then, reliability. And I think maybe that's
4 the most important of the three. Load flexibility really
5 does enhance our reliability. And I think that the
6 scenario really starts to lay out the value proposition for
7 that in a way that's relevant to the whole grid. And that
8 really has been a challenge for distributed energy
9 resources as to really get that macro view of what they
10 mean when you roll it all out.

11 And so having this report sort of lay out that
12 case really puts some wind in our sails to be able to
13 develop the various flavors of load flexibility going
14 forward. So with that we can put our Load Management
15 Standards and our Building Code and our SB 49 appliance
16 flexibility, all of that stuff really helps develop that
17 resource and contributes to this greater whole.

18 So with that I think I'll relinquish the mic, but
19 I just wanted to say again just thanks to the whole
20 collaborative effort. And certainly to the Chair as well
21 for your leadership and vision on this and really kind of
22 understanding early on how foundational this work could be.
23 It's not all legislation that sort of gets really taken up
24 and done in a complete and serious way. And this was just
25 such a central effort, and I think that's a large measure
26 due to the way you framed it initially. So thanks to you

1 and the rest of my Commission colleagues.

2 CHAIR HOCHSCHILD: Well thank you, Commissioner.
3 And I would just second your last point on the role of
4 buildings, and all of this. And another way to say it is
5 that for SB 100 to be successful, I mean everything that
6 touches the electric grid needs to be a good citizen of the
7 grid. And the Load Management Standards in particular, I
8 think, are going to really help accelerate that. So thank
9 you for that and for everything else you're doing on the
10 Building Code and so much else.

11 Let's move on. Commissioner Gunda, did you want
12 to share a few thoughts?

13 BOARD MEMBER GUNDA: Sure, Chair. I don't know
14 if Commissioner Douglas wanted to go first. Commissioner?

15 BOARD MEMBER DOUGLAS: It's up to you. I was
16 wondering the same thing, why don't you go ahead.

17 BOARD MEMBER GUNDA: Okay, thank you Chair. I
18 think I'm going to use up all my minutes for today on this
19 item as I'm going to take a couple of minutes here. I
20 think I just want to begin with just saying a big
21 congratulations to the entire team of what a tremendous
22 effort.

23 And ideally over the last 18 months I was
24 tracking this closely, at times not so closely at times,
25 but just looking, just watching the team grow into this
26 project. And kind of landing this humongous plane safely

1 was just a tremendous effort. And it just goes to the
2 fortitude, clarity, the collaborative spirit, and the
3 passion that this team has.

4 And I think it's a -- I cannot overstate this --
5 the incredible champion that Terra has been on this from
6 the front, leading it from the front. Being able to
7 coordinate between the Agency, outside the Agency, bringing
8 everybody together.

9 I think most of all, I think, a couple of things
10 that Terra was able to bring into this, into the spirit, is
11 kind of first in connecting the Chair's Office to the team
12 which was incredible. But also developing this
13 relationship across the Agency principals and the trust
14 that she built with the Agency principals was tremendously
15 helpful for this work. So Terra congratulations. And I'm
16 so glad that you thanked every one of the team members, so
17 I'm not going to repeat it. I had a long list of people,
18 so thank you for doing that.

19 But I do want to call out a couple of people,
20 because moments like this, just reports like this,
21 opportunities like this just allow for some of the
22 experienced staff to kind of have an opportunity to mentor
23 some staff that are kind of going into it. So I just want
24 to thank Alvarado, who also retired. Judy Grau, as Terra
25 mentioned, and Jim Bartridge. And the three of you have
26 been incredible mentoring kind of what I think of as the

1 new crop of -- a new wave of leadership at the CEC. And
2 that includes Liz, Chris McLean, Mark Kootstra, Angela,
3 everybody. I mean there's so many people behind the
4 curtains. But you guys all kind of showed how much of a
5 leadership role you can take, so thank you so much for your
6 efforts.

7 A special callout for Noemi for making sure
8 equity was not lost in the conversation or diluted. So
9 Noemi thank you for your courage inserting the
10 conversation, no matter how uncomfortable it was sometimes
11 to just get through the process. So really, thank you to
12 you.

13 And as Terra mentioned a big thanks to Aleecia
14 for just the ability to bring people together and move us
15 all forward.

16 It's as Commissioner McAllister mentioned, it is
17 one of those projects that really provided an opportunity
18 and a blueprint for future collaborations between the
19 agencies. Again, it wouldn't happen without the likes of
20 Rajinder Sahota, Simon Baker and the middle-level
21 management that are really trying to bring the
22 collaborative spirit together. So thanks to them for
23 bringing that spirit and the openness to the conversation.

24 Also, I just want to note a few more people from
25 CPUC and CARB, which were essential for the completion of
26 this project. So James McGarry and Jason Ortego and

1 Stephanie Kato, Carrie Biolin, (phonetic) and Mary Jane
2 Coombs. All of them have been meeting on a weekly basis to
3 ensure this all happened.

4 Terra said thanks to me to like kind of being at
5 the beginning of this, but I really want to give a note of
6 thanks to the role Drew, Courtney and Eli Harland played in
7 this. Very early on just as the bill passed in September
8 of 2018, Drew, Courtney Smith the Chief Deputy back then,
9 and Eli kind of pulled together a team to really think
10 through how this could be a foundational policy that could
11 bring CEC together and the rest of the agencies together.
12 And so I just want to note that there.

13 And as we now move forward, between we have four
14 years to write the next report again, but it is a lot of
15 work that that got teed up in this report. And I want to
16 just acknowledge that two top leaders. Commissioner
17 Douglas your leadership in land use and transmission
18 planning will be essential. You're thinking through a
19 multitude of very complex issues and stakeholders on how to
20 make this happen. And I just want to commend your
21 leadership and thank you for everything that you're doing
22 to make this happen.

23 And Commissioner McAllister, your leadership on
24 load flexibility and data. I don't think we can make this
25 happen without the load demand side management and the
26 opportunities with the DR. So again, thank you to your

1 leadership in kind of keeping us moving forward and you're
2 kind of calm demeanor no matter what happens to kind of
3 move this incrementally. So thank you to both of your
4 leadership.

5 Thanks to all the principals, starting with Chair
6 Hochschild, who really saw the need for making this a joint
7 project very early on. Ensuring that the other principals
8 had kind of a safe space to voice their concerns and as CEC
9 was taking the pen on this. So I just want to -- just some
10 of those things are not visible, so I want to just thank
11 Chair -- Commissioner Randolph, now Chair Randolph -- and
12 President Batjer for really making this happen, and Chair
13 Nichols, so thank you all.

14 Finally, I think as a closing of this, a big
15 thank you to all the core team, inter-agency core team, the
16 comms teams, the writing teams and the admin team. Without
17 the collaborative spirit, professionalism, inclusiveness
18 and a spirit of intellectual rigor that you all brought to
19 the table this would not have been possible.

20 There are a lot of things we need to improve
21 moving forward on this, especially how we think of
22 reliability, how we ensure that this comes to fruition.
23 But I think this is an incredible start and a real feather
24 in our quiver (phonetic), so thank you everybody for all
25 your work. Thank you so much.

26 BOARD MEMBER DOUGLAS: Well thank you,

1 Commissioner Gunda. And I will try to not repeat
2 everything that's just been said by all of you. But I do,
3 I think, want to emphasize some of it. Because I think
4 this report was a significant achievement and I think it's
5 going to be really important to us as we chart our course
6 forward from here.

7 So I do want to thank Terra, again for your hard
8 work and leadership on this team and on this project. And
9 as has been said before, the inter-agency staff and
10 principals, to Chair Hochschild, Commissioner McAllister
11 and, of course, Commissioner Gunda.

12 I did not have the hands-on role that everyone
13 else on this virtual dais here did, but I did pay close
14 attention to this report and this issue as it moved
15 forward. And I attended many of the workshops, closely
16 followed the process, closely looked at the drafts. And
17 I'm really excited about the work that's been done. And I
18 was super happy to see the level of participation in this
19 work by stakeholders, as well by the DACAG, by many other
20 voices that helps contribute to it.

21 And I am really excited about the prospect now of
22 just all of us kind of rolling up our sleeves and working
23 with partner agencies. Including the ones who helped put
24 the report together with us, and many that didn't, but that
25 are going to be instrumental to our achieving these goals
26 to really make this happen on the, as you said, on the

1 land-use side, on the transmission side, on the permitting.
2 Just understanding options, understanding technology
3 options, understanding what needs to happen when to really
4 operationalize and manage. And adaptively manage our move
5 forward towards meeting these zero- carbon goals.

6 So it's a really exciting opportunity that we
7 have before us, and that has been framed up. And I think
8 the SB 100 report by giving us this long-term vision, it
9 gives us an opportunity to really take the next steps in
10 how we move forward to meet this vision. And to step up at
11 this particular moment in time. And so I'm really pleased
12 with the report and again want to thank all the people from
13 the Energy Commission and our partner agencies, who put so
14 much time and effort into it.

15 CHAIR HOCHSCHILD: Thank you so much,
16 Commissioner.

17 And let me just add as well as we're meeting here
18 I've been texting with the author of SB 100, Kevin de Leon,
19 who extends his personal gratitude to all of you and the
20 staff. And he wants to relay his thanks.

21 And let me just say I really do hope that all the
22 staff who were involved in the crafting of this report
23 really soak it in that this is done incredibly well. We're
24 really proud of you. I think our pace of work is extremely
25 fast here. We're doing so many things and spinning so many
26 plates I sometimes worry we don't pause and actually take

1 in the significance of a big project like this getting done
2 really well. So I just want to ask every member of staff,
3 if we were in person we'd be meeting to click glasses after
4 work somewhere. But since we can't do that just please
5 know we're all incredibly proud of you, grateful to you and
6 really thank you for a job well done.

7 So with that let's --

8 MS. GALLARDO: Chair before we move forward --

9 CHAIR HOCHSCHILD: Yes?

10 MS. GUTIERREZ: Sorry, I apologize for going out
11 of turn, I just wanted to pile on the gratitude fest at the
12 end and thank our Commission leadership, also CPUC and CARB
13 leadership and the inter-agency teams.

14 A few times it's been mentioned that this is a
15 roadmap for collaboration, and Commissioner Gunda you have
16 paved the road, I think, early on. You really seized the
17 opportunity to bring the SB 100 report leadership into the
18 Energy Commission when it could have landed anywhere, so
19 thank you for your leadership.

20 Also Terra and Liz especially, I want to
21 recognize both of you. Terra, you have been an exceptional
22 leader throughout this process. I think, then Siva started
23 it off and really forged those relationships with our
24 inter-agency teams, but you really took the reins about
25 mid-term in the process. And really led and shaped the
26 report, made sure key discussion items were kept front and

1 center. And you never let it slide, so thank you for your
2 leadership.

3 Liz, you have also been a huge, huge -- you
4 played this huge role in making sure that the technical
5 information and the modeling stood firm and that we really
6 ended up with a solid report, solid scenarios. I don't
7 think people, unless they were involved in it, recognize or
8 realize what an effort it was to just settle on the study
9 scenarios. And all of the inputs and assumptions that went
10 into those, so thank you very much.

11 And I just thank Steph, at CARB, and of course
12 our team in EAD for really pulling this all together.
13 Thank you.

14 CHAIR HOCHSCHILD: Thank you, Aleecia. And let
15 me also just offer again our congratulations to you on your
16 new role. For those of you not aware, Aleecia was just
17 appointed to succeed Commissioner Gunda in his former role
18 as Deputy in Charge of the EAD Division, our Energy
19 Assessments Division. And she's going to do a terrific
20 job, so congratulations to you again.

21 MS. GUTIERREZ: Thank you, Chair.

22 CHAIR HOCHSCHILD: Yeah.

23 Okay, thank you everybody. Let's move on, if we
24 could, to Item 3, Antelope Valley Water Storage.

25 MR. SIT: Good morning Commissioners, my name is
26 Joseph Sit and I'm from the R&D Division.

1 This is a long-duration project that came out of
2 our solicitation where most of the projects were presented
3 at our July 2020 Business Meeting. Just as a refresher the
4 purpose of this solicitation was to demonstrate the value
5 of non-lithium ion energy storage technologies that had
6 durations of 10 hours or longer. Next slide, please.

7 Speaking of benefits this project from Antelope
8 Valley and their aquifer pumped hydro-technology has a few
9 key technological advantages over lithium-ion technologies.
10 These include things like longer life cycles, thermal
11 runaway and also no electronic waste.

12 Speaking to the long-duration storage
13 solicitation and also just the technology more broadly,
14 some of the key advantages is the ability to capture excess
15 renewable energy generation and then use during high-
16 priority times of the grid.

17 And then lastly, just thinking about the fires
18 that we experienced in the heat wave last summer, and also
19 the outages that we saw in Texas during the recent winter
20 storm, we see this need for a grid resiliency. And by
21 being able to support long-duration storage as a technology
22 we'll be able to pursue grid resiliency with cleaner -- and
23 that it's lower carbon emissions, and also do it with lower
24 costs. Next slide, please.

25 Speaking to technological innovations, this
26 aquifer pumped hydro technology is beneficial in that it's

1 scalable and has rapid implementation. And this is because
2 it's able to build off of existing infrastructure. And
3 this is what contrasted to large-scale hydro, which is very
4 capital and resource intensive.

5 Another unique feature about aquifer pumped hydro
6 is its seasonal storage. In other words, aquifer pumped
7 hydro is able to store energy on time periods of not just
8 hours, but we think weeks and months. Next slide, please.

9 Speaking to, or going over the actual agreement,
10 this project is partnering with Antelope Valley Water
11 Storage LLC, where they'll be receiving \$6.4 million of CEC
12 funds. They'll be demonstrating their aquifer pumped hydro
13 technology, which retrofits existing wells and is able to
14 extract power from water flow. They'll be demonstrating at
15 least 10 hours of duration and be rated with at least 200
16 kilowatts of power.

17 Lastly, in terms of the purpose, this project
18 will be supplying power to critical facilities in low-
19 income communities. Next slide, please.

20 Just as an overview of briefly how the project
21 works, starting with the left side, the image to the right
22 side, water flows into or flows back through the piping
23 back into the aquifer and that's what generates power out
24 of the system. This power can work in conjunction with the
25 grid or can be isolated from the grid. And then the idea
26 is that this energy will be powering, again critical

1 facilities such as disadvantaged and community hospitals,
2 community centers and also emergency operations centers in
3 these low-income communities. Next slide, please.

4 Lastly, in terms of staff recommendations, we
5 recommend adoption of the CEQA findings and also approval
6 of this grant agreement. And I'm ready for any questions
7 the Commissioners might have, and also Mike Gravely from
8 Research and Development and Bill Dietrich from CEC's Legal
9 are also available on the line as well.

10 CHAIR HOCHSCHILD: Well thank you so much,
11 Joseph, for this. Obviously it builds beautifully on what
12 we were just discussing with SB 100. As you're seeing
13 increasingly great progress on renewables including solar
14 and wind, you know my own view is we will get to one-cent-
15 to-kilowatt-hour solar and one-cent-to-kilowatt-hour wind
16 just based on technology improvements and scale and so
17 forth.

18 And we need to do, obviously a portfolio of other
19 renewable projects. And we are doing that including
20 offshore wind and biomass and geothermal and others. But
21 storage is a really, really key part of the equation. And
22 I think we've now funded 58 different energy storage
23 projects in California through the EPIC program. I'm
24 incredibly proud of the team for supporting that fleet.
25 And in fact Commissioner Gunda and I, during the August and
26 September threats to the grid, worked very closely on

1 pulling every possible lever. And Laurie and Mike Gravely
2 and others were really helpful just making use of the fleet
3 that we have, so this will add to that.

4 I did have one question, which is this is kind of
5 to a unique feature, right? Like what is the potential
6 universe of similar projects that you can see? And I don't
7 know how replicable this is, I don't know if you have any
8 insight on that, Joseph.

9 MR. SIT: In terms of replication, this is the
10 first time I've personally seen this this technology in
11 demonstration. But there's I think that what I heard is
12 that there's roughly 100,000 existing wells throughout
13 California that are kind of just sitting there. And so
14 they're ripe for the being built off of and used, but in
15 terms of replication trends in other companies that's
16 something that is to be seen.

17 CHAIR HOCHSCHILD: Yeah, yeah. Well that's the
18 purpose of this research.

19 So other comments or questions from my -- oh
20 sorry, let me see if there's public comment on this first.
21 I apologize. Madam Public Advisor, do we have any public
22 comment on Item 3?

23 MS. GALLARDO: This is Noemi, the Public Advisor.
24 There are no public comments on Item 3.

25 CHAIR HOCHSCHILD: Okay, thank you.

26 Colleagues, any other comments or observations

1 anyone would like to share on this?

2 BOARD MEMBER DOUGLAS: You know, I would just
3 speak up and say I agree with your comments. Storage and
4 long-duration storage is a really critical component of our
5 future here. And I'm really excited to see these projects
6 move forward.

7 CHAIR HOCHSCHILD: Okay, thank you.

8 BOARD MEMBER GUNDA: Yes --

9 CHAIR HOCHSCHILD: I'm sorry, Commissioner Gunda,
10 were you going to say something?

11 BOARD MEMBER GUNDA: Yeah, Chair, thank you.
12 Just thank you so much for the presentation, this is very
13 exciting, same thing what Chair and Commissioner Douglas
14 said. The specific question/comment, I guess, is kind of
15 thinking through this universe question that the Chair
16 asked and you just mentioned there are about 100,000 wells
17 out there. And then this project is about 200 kilowatts,
18 so we're looking at a potential of about 20 gigawatts,
19 right? And so that's an incredible amount of storage
20 opportunity.

21 So just want to understand as a follow-up
22 separately, the universe and possibly the challenges as to
23 scaling this kind of technology. And also how big this
24 could be. What is the range that we're talking about from
25 200 megawatts to 500 megawatts -- or I meant 500 kilowatts,
26 for example? So it'll be really great to follow up and I

1 would love to keep track of this project. And thank you
2 for the presentation.

3 CHAIR HOCHSCHILD: Thank you.

4 Commissioner McAllister would you be willing to
5 make the motion?

6 BOARD MEMBER MCALLISTER: Yes, I will move Item
7 3.

8 CHAIR HOCHSCHILD: Okay.

9 Commissioner Douglas, would you be willing to
10 second?

11 BOARD MEMBER DOUGLAS: Second.

12 CHAIR HOCHSCHILD: Okay. All in favor say,
13 "Aye." Commissioner McAllister?

14 BOARD MEMBER MCALLISTER: Aye.

15 CHAIR HOCHSCHILD: Commissioner Douglas?

16 BOARD MEMBER DOUGLAS: Aye.

17 CHAIR HOCHSCHILD: Commissioner Gunda?

18 BOARD MEMBER GUNDA: Aye.

19 CHAIR HOCHSCHILD: And I vote "aye" as well.

20 This item passes 4-0.

21 Let's turn now to Item 4.

22 MR. MORI: Good morning, Commissioners. I am
23 Kevin Mori from the Energy Efficiency Research Office in
24 the Energy Research and Development Division.

25 In California, data centers consume over 2
26 percent of the state's electricity usage and is rapidly

1 growing. It is expected to double in energy consumption
2 within the next eight years. This is due to the
3 significant amount of electrical cooling requirements and
4 data processing inefficiencies. Data center cooling makes
5 up for about 40 percent of data center electricity usage
6 and is caused by the heat produced by electrical
7 transistors. Next slide, please.

8 In the Internet world, fiberoptics and light
9 signaling are becoming more commonplace and produce faster
10 Internet speeds. However, the switchboard from end user to
11 data center servers still use electrical transistors, and
12 is the current bottleneck for data processing. Instead of
13 using electrical transistor switches this project will use
14 optical switches that use light to transmit data. The
15 benefits of this technology include doubling data
16 processing energy efficiency, reducing cooling requirements
17 for data centers, and increased Internet speeds. Next
18 slide, please.

19 In a prior Department of Energy and CEC federal
20 cost share grant, UC San Diego developed a pilot scale
21 optical rotor switch that can achieve cooler temperatures
22 and faster data processing by directing server traffic with
23 light signaling. With the idea of light traveling 100
24 times faster than electricity, this switch has the
25 potential to double data processing speeds. Due to this
26 potential UC San Diego was recently awarded additional

1 funding to further test the light wave technology and
2 simulated real-world workloads. And to improve it for
3 scalability and commercialization. The simulation will use
4 Opera protocols to simulate the real-world web browser
5 traffic. Next slide, please.

6 As shown in the Phase 1 column, the Department of
7 Energy previously awarded \$3.8 million to UC San Diego with
8 a CEC cost share of \$475,000 to develop a proof-of-concept
9 model of the technology.

10 As shown in the Phase 2 column, the Department of
11 Energy has now awarded \$5 million to test the technology in
12 real-world workloads and improve commercialization. As a
13 result, the project that I'm presenting today will be
14 providing UC San Diego with an additional \$425,000 as cost
15 share to the latest federal grants. If this award is
16 approved the project would have leveraged Department of
17 Energy investment of \$8.8 million versus CEC investment of
18 \$900,000, thus leveraging the state funds by nearly 10
19 times. UC San Diego has summarized their activities to
20 date in the article at the shown link. Next slide, please.

21 And with that I would like to finish up by
22 recommending approval of this agreement with UC San Diego
23 and staff's determination that the project is exempt from
24 CEQA.

25 I am available to answer any questions. And I
26 believe George Papen might be on the line for comment.

1 Thank you.

2 CHAIR HOCHSCHILD: Thank you, Kevin, for that.

3 And there's so much to love about this. I love the
4 leveraging of federal funds, love the partnership with UC
5 San Diego and the area of focus. Data centers are one of
6 the top loads in California.

7 I also want to just thank again the Siting
8 Division and everyone else who collaborated on the workshop
9 we had some weeks ago on cleaning up data center backup
10 generation. But I think this is a really good project to
11 help reduce the load. And I just wanted to thank everybody
12 involved.

13 I wonder if Commissioner McAllister had anything
14 to add on this? Oh sorry, let me just see if --

15 BOARD MEMBER MCALLISTER: Do we want to get
16 public comment, yeah.

17 CHAIR HOCHSCHILD: Yeah, we might have public
18 comment on this. Is there public comment, Noemi, for this
19 item?

20 MS. GALLARDO: Yeah, this is Noemi Gallardo,
21 Public Advisor. And I do not see any public comment on
22 this Item Number 4.

23 CHAIR HOCHSCHILD: Thank you. Let's go to
24 Commissioner McAllister.

25 BOARD MEMBER MCALLISTER: Okay yeah, I just would
26 emphasize what you said already, Chair. Data centers, I

1 mean they use a massive amount of energy. And we've been
2 funding this, various generations of energy efficiency in
3 data centers for a good long while now and it's paid off in
4 spades. It is a big -- 2 percent Kevin said -- it would
5 have been much bigger than that if we hadn't been working
6 on this for the last 15 years or so.

7 And data centers have only grown. And as our
8 lives more and more depend on it, it's just vital really
9 that we move into it and construct new data centers.
10 Constructing really cutting-edge, efficient data centers.
11 Not generate heat in the first place, and then be very
12 efficient about the cooling of the heat that is generated.

13 And then we really need to continue to work on
14 figuring out how to reduce the energy consumption of
15 existing data centers of which there are many, many. So
16 there's a lot of frontier, there are a lot of frontiers
17 here to keep investing in.

18 I want to just express optimism that this Match
19 Program that we have had periodically at the Commission,
20 it's had a great impact. And just hopeful that as ARPA-E,
21 as the sort of new federal landscape for investment in R&D
22 ramps up and gets funding, we can have more opportunities
23 to do this and partner with California entities that are
24 getting federal funds and really, really leverage our own
25 dollars that way. So I think this is a really great
26 project.

1 CHAIR HOCHSCHILD: Thank you, Commissioner. Any
2 other comments from my colleagues? Seeing none,
3 Commissioner McAllister, would you be willing to make the
4 motion?

5 BOARD MEMBER MCALLISTER: I will move Item 4.

6 CHAIR HOCHSCHILD: Okay.

7 Commissioner Gunda, would you be willing to
8 second?

9 BOARD MEMBER GUNDA: I second the motion.

10 CHAIR HOCHSCHILD: Okay. All in favor say ayes.
11 Commissioner McAllister?

12 BOARD MEMBER MCALLISTER: Aye.

13 CHAIR HOCHSCHILD: Commissioner Gunda?

14 BOARD MEMBER GUNDA: Aye.

15 CHAIR HOCHSCHILD: Commissioner Douglas?

16 BOARD MEMBER DOUGLAS: Aye.

17 CHAIR HOCHSCHILD: And I vote "aye" as well.

18 That item passes 4-0. Let's move on to Item 5.

19 MR. FERREIRA: Slide 1:

20 Hello, my name is Michael Ferreira and I work in
21 the Energy, Research and Development Division. I'm here
22 seeking approval for eight new grant agreements that
23 resulted from our 2020 BRIDGE solicitation. Next slide,
24 please.

25 One of our primary goals within the R&D Division
26 is to support and enable clean energy start-ups across the

1 state. And over the past couple years we have scaled some
2 of these programs to support (indiscernible) from early-
3 stage prototypes under CalSEED to lower emission production
4 under RAMP. (phonetic). These stated agreements come from
5 our BRIDGE Program, which (indiscernible) and to help clean
6 energy startups avoid the funding gap between the time a
7 successful project ends and funding for a new project is
8 awarded. Next slide, please.

9 The first agreement from this BRIDGE is with
10 Packetized Energy Technologies, which will demonstrate the
11 potential of flexible electrical devices to provide
12 benefits to the electric grid.

13 Smart devices used for demand response have
14 enormous potential to mitigate problems like the shortage
15 of capacity, which leads to blackouts. However, existing
16 demand response solutions are not flexible enough to
17 respond to grid conditions and do not provide enough value
18 to consumers needed for scale.

19 Packetized Energy's platform aggregates smart
20 devices such as thermostats, water heaters, and air
21 conditioners into resources that respond in real time to
22 changing grid conditions and enables expansion of demand
23 response through customer friendly features that are easy
24 to choose, install and operate. Next slide, please.

25 The next agreement is with Noon Energy, who will
26 continue to advance their carbon-oxygen long-duration

1 storage battery. With solar and wind power expanding
2 rapidly, long duration storage is urgently needed to
3 balance their intermittent supplies against demand, with
4 existing storage technologies being too expensive or
5 geographically limited to offer a viable solution.

6 Noon's battery can match the energy efficiency of
7 lithium-ion technology, while using low-cost storage media,
8 which enables system level costs much lower than existing
9 technologies.

10 This funding will enable scale-up, development
11 and field-testing demonstration of a storage system coupled
12 to solar power, to provide dispatchable renewable
13 electricity. Next slide.

14 The next agreement is with Next Energy
15 Technologies, who will continue development of their
16 transparent solar cells. Considerable progress has been
17 made making commercial buildings more energy efficient, but
18 there remains a lack of options for onsite energy
19 generation as these buildings often don't have enough
20 rooftop space for conventional solar panels.

21

22 Next Energy is solving this problem by developing
23 windows that generate energy, while maintaining customer
24 expectations for aesthetics. Additionally, their windows
25 also improve energy efficiency by converting infrared,
26 which otherwise would contribute to building heat load,

1 into electricity.

2 Their organic semiconductor coating can be
3 directly integrated into dual-pane windows, eliminating
4 encapsulation costs and allowing their technology to target
5 a 1-year payback. Next slide, please.

6 Next is Sepion Technologies, who will continue
7 R&D of their hybrid lithium-metal battery cell from a lab-
8 scale validation to a pre-prototype.

9 Lithium metal batteries have great advantages
10 over state-of-the-art lithium ion batteries in terms of
11 energy density and cost, which present huge opportunities
12 for long-range and low-cost electric vehicles in the
13 future. However, current lithium-metal technologies use
14 lithium foil anodes, which are incredibly expensive and
15 pose a significant safety risk.

16 To solve these challenges, Sepion is developing a
17 safe, anode free current collector, where all the lithium
18 comes from the cathode, to achieve higher energy density at
19 less than \$100/kWh. The price point identified by the DOE
20 where EV, electric vehicles, reach upfront cost parity with
21 combustion engine vehicles.

22 This project will continue development of their
23 "anode-free" current collector. And use machine learning
24 to optimize the electrolyte formula to enable the battery
25 to endure aggressive fast-charging conditions. Next slide,
26 please.

1 Next is South8 Technologies, who has developed a
2 novel and patented liquefied gas electrolyte chemistry for
3 advanced Lithium ion batteries. Conventional Lithium-ion
4 technology is limited by poor performance at temperatures
5 below 20 Celsius and can be hazardous if they're damaged.
6 South8 is working to overcome these barriers with their
7 liquid gas electrolyte, which has high conductivity at low
8 temperatures, opening up opportunities for a wider range of
9 applications.

10 Their liquid gas electrolyte is also much safer,
11 because if the cell structure is compromised, it can vent
12 the non-toxic electrolyte and eliminate any possibility of
13 explosion. Next slide, please.

14 The next agreement is with Treau, who will make
15 improvements to their patented, low-cost, user-installable
16 electric heat pump heater and air conditioning unit.

17 Currently, heat pumps and air conditioners must
18 be installed through a wall by a professional HVAC
19 technician, which is costly and time consuming. Treau's
20 room heat pump can be installed by two people with no tools
21 in about 15 minutes and can be plugged directly into a
22 typical 120 volt outlet.

23 In this project Treau proposes upgrades, which
24 will expand the efficiency and thermal range of their
25 product. These upgrades will provide energy savings of an
26 estimated 33 percent for cooling and 70 percent for heating

1 when compared to mini-splits. Next slide, please.

2 Next is Skyven Technologies, who is developing an
3 innovative approach to industrial decarbonization.

4 Industrial plant operators lack the resources, both in
5 terms of time and finances, to hire energy experts to
6 perform a detailed assessment, scope, and concept for
7 greenhouse gas reducing projects.

8 Due to the large variety and uniqueness of plant
9 types, decarbonization efforts require significant up-front
10 analysis and consultant payments, with no guarantee of
11 greenhouse gas or cost savings.

12 Sykven will develop an artificial intelligence
13 platform that reduces front-end engineering costs by a
14 factor of 10 and timeline by a factor of 4. It generates a
15 customer-worthy engineering report justifying the selection
16 and measuring and presenting costs, risks, and expected
17 energy and carbon savings, ultimately making the process of
18 decarbonizing easy, impactful, and lucrative. Next slide,
19 please.

20 And the last agreement is with Feasible, who will
21 demonstrate their platform's capability to detect battery
22 manufacturing issues earlier and with more sensitivity than
23 state-of-the-art methods.

24 As battery cells have grown in size and density,
25 standard electrical methods are limited in their ability to
26 detect small inconsistencies that have a big impact on

1 performance quality, and are a major source of cost and
2 inefficiency in battery manufacturing. Feasible seeks to
3 overcome these issues by commercializing an inspection
4 method using ultrasound and data analytics to improve
5 productivity and throughput in battery cell manufacturing.

6 This new process aims to accelerate yield ramps
7 by 2 times and adds 5 percent steady state yield by 5
8 percent yield. Next slide, please.

9 Staff recommends approval of these eight grant
10 agreements and staff's findings that these projects are
11 exempt from CEQA. This concludes my presentation. I'm
12 here to answer any questions and I believe Vince Romanin is
13 also on the line to give his support. Thank you.

14 CHAIR HOCHSCHILD: Thank you so much.

15 Well, I feel at times I repeat myself in just
16 saying how proud I am of the team, but this is an
17 incredible, incredible portfolio. And some of these
18 companies I have had the opportunity to visit. I love the
19 focus on lithium-ion batteries from Sepion and others, but
20 really every single one of these is timely and necessary.

21 And I would say this kind of funding is important
22 in normal times, but especially important in a time like
23 this where we're still in the middle of an economic
24 recovery to help these companies make it to the next stage.
25 I really think it can be the difference between succeeding
26 or folding as a company, and so I'm so proud of this

1 portfolio and very pleased to support it.

2 Let's see if we have any public comments on this
3 item, Madam Public Advisor.

4 MS. GALLARDO: Yes, this is Noemi Gallardo,
5 Public Advisor. We do have someone on the Verizon line,
6 Vince Romanin it looks like, from Treau. So if we could
7 open up his line. Vince, your line is open. Please spell
8 your name before speaking and indicate your affiliation.
9 You may begin.

10 MR. ROMANIN: Yes, hello. My name is Vince
11 Romanin, that's V-i-n-c-e R-o-m-a-n-i-n and I'm the CEO of
12 Treau. Good morning, Chair Hochschild and Commissioners.
13 As I said my name is Vince and I'm here to say that the
14 entire Treau team is thrilled to have the Energy Commission
15 continue to support us in this important work. We started
16 this company almost exactly four years ago now, with two
17 employees. And today we're at twenty.

18 Our mission was and continues to be to expand
19 access to comfortable buildings and homes in a way that
20 doesn't compromise our environment. And the CEC's support
21 up to now has been instrumental in us building our initial
22 manufacturing capacity of our first cooling and heating
23 product. And now your support of expanding the
24 capabilities of our future products to colder climates, and
25 as a standalone heating system, aligns directly with our
26 company mission.

1 Our easy-to-install electric heat pump with low
2 global-warming potential refrigerant helps remove two of
3 the largest sources of carbon emissions from buildings: one
4 being fossil fuels for heating and the other HFC
5 refrigerants. And, more importantly, our system is also
6 designed to be a beautiful, sleek and efficient product
7 that people will be excited to bring into their homes.

8 And so the CEC funding alone would have been
9 transformational for our startup, but your support and
10 endorsement has also been catalytic in bringing in other
11 sources of capital from other agencies and private venture
12 capital. And we're confident that this is going to
13 continue to be the case for BRIDGE.

14 Also I'd like to express my gratitude to Laurie
15 ten Hope and her staff for their dedication in their day-
16 to-day administration of our current grant. And lastly, I
17 just wanted to thank you again for your support and helping
18 us bring compromise-free comfort to all Californians.
19 Thank you.

20 CHAIR HOCHSCHILD: Thank you so much.

21 Let's go to Commissioner discussion, maybe
22 starting with Commissioner McAllister.

23 BOARD MEMBER MCALLISTER: Yeah, I wholeheartedly
24 agree with your assessment that this is a great, really
25 impressively diverse group of projects. I mean, everything
26 industrial -- really happy to see some industrial

1 efficiency in here -- storage and even small-scale
2 generation.

3 And particularly buildings, obviously I think I
4 tend to focus on the innovation in buildings. And I want
5 to thank Vance from Treau for his presence and comments. I
6 mean cooling is one of the challenges of our time, cooling
7 and heating both, avoiding fossil fuels and the HFC issue.
8 We're really looking for ways to push the marketplace on
9 that and create solutions that are low-cost and accessible.

10 And we're talking about that actively in the
11 Building Code right now. And I think having the Energy
12 Commission really take the leadership role in developing
13 that marketplace can be transformational for our sake, but
14 actually globally. And cooling is not just a California
15 problem. It's cooling and heating both. But cooling, in
16 particular, is a global problem and demand is going up
17 tremendously across the globe on that. So I think I'm
18 obviously supportive of this portfolio and really happy to
19 see these technologies. And will be paying attention to
20 how they develop over time, and would reiterate the thanks
21 to Laurie and her team.

22 CHAIR HOCHSCHILD: Great, thank you. Any other
23 comments from Commissioners?

24 BOARD MEMBER GUNDA: Yeah, Chair, this is Siva. I
25 just wanted to just pile on the thanks and I just want to
26 thank Michael for taking the time to brief me on this. And

1 I'm really excited about the portfolio of generation and
2 the grid services in there. And it'll be very beneficial
3 with the focus on reliability and the long-term
4 opportunities we go through.

5 I also want to recognize what Vince just said,
6 Mr. Vince from Treau, is I think CEC has been doing a
7 tremendous job in really filtering out and then thinking
8 through and identifying opportunities for emerging
9 technologies. And I think as CEC puts in the time to vet
10 these RFPs and then highlight some of the technologies that
11 really helps those technologies to get more funding. So I
12 think that's a really important step that we serve.

13 I just want to thank Laurie for her leadership
14 and the entire R&D team for their work on this. I'm very,
15 very excited about this group of technologies.

16 CHAIR HOCHSCHILD: Thank you so much,
17 Commissioner.

18 Unless there's other comments Commissioner
19 McAllister, would you be willing to move the item?

20 BOARD MEMBER MCALLISTER: I will move Item 5.

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

23 BOARD MEMBER DOUGLAS: Yes, second.

24 CHAIR HOCHSCHILD: All in favor say aye.
25 Commissioner McAllister?

26 BOARD MEMBER MCALLISTER: Aye.

1 CHAIR HOCHSCHILD: Commissioner Douglas?

2 BOARD MEMBER DOUGLAS: Aye.

3 CHAIR HOCHSCHILD: Commissioner Gunda?

4 BOARD MEMBER GUNDA: Aye.

5 CHAIR HOCHSCHILD: And I vote aye as well. That
6 item passes 4-0. Let's turn now to Item 6.

7 MR. CHEN: Good morning, Chair and Commissioners,
8 my name is Peter Chen. I work in the Energy, Research and
9 Development Division. Today I am presenting three
10 recommended awards from the hydrogen fuel cell
11 demonstrations in rail and marine applications at ports or
12 H2RAM solicitations. Next slide, please.

13 So this graph shows diesel particulate matter or
14 DPM emissions at four major California ports categorized by
15 emission source. The Air Resources Board identifies DPM as
16 a toxic air contaminant linked to increased cancer risk and
17 other adverse health impacts. As you can see in the
18 segments outlined in red, diesel power locomotives and
19 harbor crafts contribute to around 17 to 56 percent of DPM
20 emissions at these ports, impacting under-resourced
21 communities that are located nearby. Unlike on-road
22 vehicles, locomotives and harbor crafts have few clean
23 alternatives to diesel available today. Next slide,
24 please.

25 So the objective of the H2RAM solicitation and
26 the projects recommended today, is to reduce emissions from

1 locomotives and harbor crafts by advancing the use of zero-
2 emission hydrogen fuel cell technology. Introducing
3 renewable hydrogen for these high fuel usage applications
4 can also help realize economies of scale at the ports and
5 reduce the cost of hydrogen for other applications.

6 The projects will inform future regulations and
7 deployment strategies by providing data on fuel use,
8 performance and cost-effectiveness. Next slide, please.

9 The first project with Gas Technology Institute
10 would integrate a hydrogen fuel cell module, onboard
11 hydrogen storage, and a battery module to collectively
12 provide a zero-emission alternative to diesel switcher
13 locomotives. Sierra Northern Railway, a short-line
14 railroad that serves the Port of West Sacramento, will
15 demonstrate the hydrogen locomotive in real-world
16 operation. Their project will inform expanded hydrogen use
17 in the rail sector by analyzing performance data and
18 evaluating other suitable rail applications in California.

19 The hydrogen locomotive will enable Sierra
20 Northern Railway to retire an older diesel locomotive,
21 which will displace around 4,200 pounds of NOx, 150 pounds
22 of PM and 100 metric tons of CO2 emissions annually. Next
23 slide, please.

24 The second project with CALSTART will conduct a
25 design and feasibility study of a hydrogen fuel cell
26 tugboat for implementation at the Port of Los Angeles. Due

1 to space constraints on tugboats and their high fuel usage
2 requirements liquid hydrogen maybe a more feasible onboard
3 storage solution, compared to compressed gaseous hydrogen,
4 which is more typically used for on-road vehicles.

5 The project will address safety and technical
6 challenges related to using liquid hydrogen onboard a
7 marine vessel, including tank integration, production and
8 delivery to ports and refueling. Deploying a single
9 hydrogen tugboat in the future can result in around 2,200
10 metric tons of avoided CO2 emissions annually. Next slide.

11 The third project's with Golden Gate Zero
12 Emission Marine will modify a small multi-use
13 passenger/patrol vessel to incorporate a compact hydrogen
14 fuel cell power train with 50 to 80 percent lower capital
15 costs compared to current industrial style marine fuel
16 cells.

17 The project will also develop a mobile refueling
18 system that can source hydrogen from existing retail
19 stations to refuel the vessel. This avoids relying on
20 shoreside hydrogen infrastructure, which may be more
21 difficult to site for the segment of the marine sector.
22 The technology will be validated through a demonstration
23 split between the Port of San Francisco and Port of Long
24 Beach. Converting a single commercial vessel of this type
25 can result in around 270 metric tons of CO2 emissions
26 annually. Next slide, please.

1 Staff recommends approval of these three grants
2 awards and adoption of staff's determination that the
3 projects are exempt from CEQA. Thank you, and I'm
4 available for any questions.

5 I also believe Ted Barnes from Gas Technology
6 Institute, Fred Silver from CALSTART, and Ricky Elder from
7 Golden Gate Zero Emission Marine are on the line to provide
8 some comments. Thanks.

9 CHAIR HOCHSCHILD: Thank you. Let's go first to
10 public comment.

11 MS. GALLARDO: This is Noemi Gallardo, the Public
12 Advisor. We do have three people on the Verizon line.
13 First will be William from California Hydrogen Business
14 Council. William, I remind you to please spell your name
15 before you begin speaking. After William will be Ricky,
16 and then we will have Tim. So William, your line is open.
17 Please feel free to begin. (Silence on the line.)
18 William, again your line is open if you'd like to make your
19 public comment.

20 MR. ZOBEL: There we go. Can you hear me?

21 MS. GALLARDO: Yes, we can. Sorry, you have
22 three minutes.

23 MR. ZOBEL: Thank you. William Zobel, I'm the
24 Executive Director of the California Hydrogen Business
25 Council. Commissioners, staff and members of the public
26 thank you for giving us the opportunity to comment today.

1 The California Hydrogen Business Council
2 appreciates the Commission's leadership on these off-road
3 pilot hydrogen fuel cell demonstration programs. We
4 believe these pilots establish a foundation for further
5 commercialization of hydrogen and fuel cells in the off-
6 road transportation market. And will inform future work
7 done by the Commission on hydrogen and fuel cells across
8 all segments of our economy.

9 As we know, and based on other work done at the
10 Commission such as the SB 100 joint agency report that was
11 presented earlier in the program, zero-carbon hydrogen is
12 leveraged by scale. Peter even mentioned it in his
13 overview of this particular item. Scales we know reduces
14 costs, it will spur innovation and opens up other
15 opportunities for this zero-carbon fuel across the economy,
16 which include not only on the off-road segment, but also
17 on-road transportation and the energy sector.

18 The Business Council is here to support the
19 Commission's efforts in this area and other areas. We have
20 a broad and diverse membership that has tremendous
21 technical depth. Our members are willing, ready and able
22 to assist this Commission in its efforts to meet the
23 state's decarbonization goals in these areas. Thank you
24 very much.

25 MS. GALLARDO: Thank you.

26 Next up we have Ricky from Golden Gate. Ricky, a

1 reminder to please spell your name and state your
2 affiliation. You may begin.

3 MR. ELDER: Thank you. Good morning,
4 Commissioners. My name is Ricky Elder spelled, R-i-c-k-y
5 E-l-d-e-r. I'm a Project Manager at Golden Gate Zero
6 Emission Marine, a team committed to developing
7 technological innovations leading to a future of clean,
8 safe and accessible hydrogen across the globe.

9 As a brief review our project plans to design,
10 build and demonstrate a fuel cell power train on a small,
11 fast harbor craft as well as create technology that will
12 improve the safety and cost effectiveness of hydrogen
13 fueling. With over 98 percent of vessels in California
14 being under 40-feet long it is Golden Gate Zero's belief
15 that developing the boundary-pushing technology of a
16 powerful and compact system like this will be instrumental
17 in the transition from traditional to a zero-emission
18 hydrogen fuel cell power train.

19 The funds that CEC provides for developing
20 hydrogen technology projects is the foundation, which
21 enables companies like us to actualize a future of
22 accessible zero-emission power, including and especially in
23 our low-income and disadvantaged communities. Golden Gate
24 Zero Emission Marine is honored to be nominated for this
25 award, which will enable the development and testing of
26 novel technology we hope to use in making hydrogen

1 accessible for all.

2 I'd like to complete my comments by saying thank
3 you to the CEC for providing the platform for making zero-
4 emission dreams a reality, thank you to Peter Chen for his
5 constant communication and support, thank you to our
6 project partners Ocean5, UC Irvine and SoCal Gas. And I
7 would like to thank the Commissioners for their time today
8 in crafting the future of hydrogen power in California.
9 And, ultimately, our clients. Thank you.

10 MS. GALLARDO: Thank you. This is Noemi. Again,
11 we have several other speakers who have joined. Let me
12 give them a reminder too. So folks if you are on the Zoom
13 platform you will need to call into our Verizon line to
14 make a public comment. That phone number is 888-823-5065
15 and the pass code is "Business Meeting." We've also shared
16 that through the chat in Zoom.

17 All right, so next up we will have Tim Carmichael
18 from SDG&E. If we could open up Tim's line. Tim your line
19 is open, please spell your name, please state your
20 affiliation. And you may begin.

21 MR. CARMICHAEL: Good morning, can you hear me?

22 MS. GALLARDO: Yes, we can.

23 CHAIR HOCHSCHILD: Yes, we hear you.

24 MR. CARMICHAEL: Good morning, Commissioners, Tim
25 Carmichael. Today I'm actually representing Southern
26 California Gas Company though on other occasions I do

1 represent SDG&E as well. It's Tim Carmichael, T-i-m C-a-r-
2 m-i-c-h-a-e-l.

3 SoCalGas is bullish on hydrogen and we are very
4 excited to support these important hydrogen technology
5 projects. Projects like these have the potential to create
6 more zero-emission transportation and reduce the cost of
7 hydrogen fueling infrastructure consistent with California
8 climate goals. SoCalGas remains committed to helping
9 California reach these goals and supporting innovative
10 clean fuel projects like these.

11 We commend the CEC for creating this unique grant
12 funding opportunity from two different programs within the
13 CEC. SoCalGas is also providing significant matching funds
14 for these projects.

15 Finally, we would like to recognize Ray Gonzalez
16 (phonetic) for his vision and hard work to make these types
17 of projects a reality. And we urge your approval for
18 funding for these important projects. Thank you.

19 MS. GALLARDO: Thank you.

20 All right, this is Noemi, Public Advisor again.
21 So next up is Fred Silver from CALSTART. Fred, a reminder
22 to please spell your name and state your affiliation again.
23 Fred, your line is open, you may begin.

24 MR. SILVER: Okay this is Fred Silver, S-i-l-v-e-
25 r. I am Vice President of CALSTART. And thank you to the
26 Commissioners for allowing me to speak today, and thank you

1 to Peter Chen and his staff for selecting our H2RAM
2 proposal for consideration.

3 CALSTART put together an outstanding team that is
4 able to take this project forward within future in the
5 hopes of commercializing the technology. We have ABB,
6 Ballard, SoCal Gas, DNV and the Port of Los Angeles. Our
7 team is ready to go after this project towards an actual
8 drive train and go to the next step. But the big takeaway
9 from this project is should we succeed we are looking at
10 reducing the use of diesel as much as 15,000 gallons per
11 month per tugboat and that's a fairly significant amount of
12 fuel consumption.

13 So thank you for consideration for our project
14 today.

15 MS. GALLARDO: Thank you.

16 Next up we have Ted Barnes it looks like, from
17 the Gas Technology Institute. Ted, a reminder to spell
18 your name, please state your affiliation. Your line is
19 open and you may begin.

20 MR. BARNES: Thank you very much. Good morning.
21 Can you hear me?

22 CHAIR HOCHSCHILD: Yes.

23 MR. BARNES: That's fine, thank you. My name is
24 Ted Barnes, B-a-r-n-e-s, and I'm the Director of the
25 Transportation Group at GTI. I would like to very briefly
26 just thank all of the Commissioners for selecting GTI on

1 this project in allowing projects and programs such as this
2 that fund the clean energy in especially difficult to
3 decarbonize sectors.

4 These projects are very important to GTI's
5 mission, as well as to reaching California's climate goals.
6 We are very eager move forward with the technical project
7 team, as well as (indiscernible) like SoCalGas support and
8 the Energy Commission's support.

9 We also thank the Commissioners for their funding
10 of clean energy across some wide variety of sectors
11 (indiscernible - audio cuts out.) So thank you very much
12 for that. And we truly look forward to this exciting
13 projects (indiscernible). Thank you.

14 MS. GALLARDO: Thank you.

15 This is Noemi the Public Advisor. It looks like,
16 but we're unclear, if there is one more speaker. So let me
17 check with the Verizon line. So Les Mood from SineWatts,
18 if we could open up his line and see if Les wants to speak
19 on this item. Les, your line is open. If you would like
20 to speak on this item please feel free to begin. Restate
21 your name, please spell your name and indicate your
22 affiliation.

23 MR. MOOD: Yes, so my name is Les Mood, L-e-s M-
24 o-o-d. I'm an advisor to a power electronics firm,
25 SineWatts, Incorporated based out of North Carolina.

26 And yeah, the reason I want to speak today is to

1 thank the CPUC and the CEC for encouraging innovation in
2 the State of California. I believe leadership of
3 California tends to result in great progress for the
4 nation.

5 And in the context of companies that are moving
6 out of California like I believe Tesla and some others, and
7 in the context of the incentives from states like Arizona
8 for Lucid, and the incentives that are provided. And for
9 instance, Arrival announced that the headquarter location
10 of SineWatts in Charlotte, North Carolina, would be
11 incentivizing Arrival to open up a micromanufacturing
12 facility.

13 So I'm curious what -- and I hope this is
14 appropriate to ask here today -- but I'm curious what this
15 state can do to incentivize much like Nevada and Arizona
16 and cities, the relocation of companies who aim to achieve
17 the goals, the grand goals of California, namely.

18 And I would like to add that there's a quote from
19 one of the Commissioners at the CPUC that was on the VGI
20 Workshop meeting yesterday, which was that, "We have big,
21 bold goals centrally in California. And in order to
22 achieve them we're going to need innovation and new ideas."
23 So I'm very thankful for the leadership of the CPUC and the
24 CEC to provide the kind of environment necessary to nurture
25 innovation.

26 And I guess my question would be if there's any

1 resources or where it would be recommended if a company is
2 considering to move to California or Nevada or Arizona, or
3 to seek city funding, what kind of options are out there to
4 encourage businesses to move to California and to help with
5 the problem? Thank you very much.

6 MS. GALLARDO: Thank you. And, Les, we usually
7 do not do dialogue and during public comment periods, I
8 just want to clarify that. Unless the one of the
9 Commissioners wants to respond. Otherwise, that was the
10 last comment and Chair, we could move forward.

11 CHAIR HOCHSCHILD: Thank you so much to all the
12 stakeholders and the members of public who commented there.
13 I would just observe that obviously pollution from ports
14 remains a big issue in our state impacting disadvantaged
15 communities the most. And this will help us address that
16 as well as push innovation in this sector, so I'm really
17 pleased to see all these projects and happy to support
18 this. Are there any other Commissioners wishing to
19 comment? Commissioner Douglas.

20 BOARD MEMBER DOUGLAS: Yeah, I just wanted to say
21 that I think this is an area where we definitely want to
22 kind of push the envelope a bit, and encourage some
23 innovation and deployment. So I'm excited to see these and
24 support these as well.

25 CHAIR HOCHSCHILD: Okay, thank you.

26 Commissioner McAllister?

1 BOARD MEMBER MCALLISTER: Yeah, I want to just
2 thank Peter for the briefing I got. I think this is hugely
3 important actually. I mean, ports and the shipping lanes
4 that connect them are just a massive source of all sorts of
5 different pollutants, sulfur and particulates and all the
6 rest of it. and so that's a sector I agree with
7 Commissioner Douglas, we need to do much more work on it I
8 think.

9 And this is really creative, just the way -- I
10 want to give kudos to Peter and Laurie and Virginia and the
11 whole crew in the RDD for this. Because the way they went
12 out and sort of gathered ideas and came up with the idea to
13 target this solicitation in the first place, I think, was
14 really demonstrative of their creativity. And their sort
15 of can-do mentality and approach on this in targeting these
16 particular sectors in ports. And really getting pragmatic
17 and really ground-truthing our investments, really focusing
18 on where the best bang for buck is. So I want to thank
19 them for that. I'm very supportive of these.

20 CHAIR HOCHSCHILD: Thank you. Unless there's
21 other Commissioner comments --

22 BOARD MEMBER GUNDA: Yeah Chair, I just wanted to
23 note really quick again I think everything said, thanks to
24 Peter for the excellent presentation. I think the emphasis
25 that Peter kind of mentioned in terms of air quality
26 implications and the equity implications of this work is

1 something that I want to highlight. And that's something
2 that we ought to be doing. And taking every opportunity
3 that we have to advance equity and the clean energy and
4 clean air quality and then clean California opportunities
5 for the entire state. So thank you, Peter, for your
6 presentation.

7 CHAIR HOCHSCHILD: Great. Thank you everybody.

8 Commissioner McAllister, would you be willing to
9 move the item?

10 BOARD MEMBER MCALLISTER: Yes. I will move Item
11 6.

12 CHAIR HOCHSCHILD: Commissioner Gunda, would you
13 be willing to second?

14 BOARD MEMBER GUNDA: Absolutely. I second the
15 item.

16 CHAIR HOCHSCHILD: All in favor say aye.
17 Commissioner McAllister?

18 BOARD MEMBER MCALLISTER: Aye.

19 CHAIR HOCHSCHILD: Commissioner Gunda?

20 BOARD MEMBER GUNDA: Aye.

21 CHAIR HOCHSCHILD: Commissioner Douglas?

22 BOARD MEMBER DOUGLAS: Aye.

23 CHAIR HOCHSCHILD: Okay, what I'd like to do now
24 is actually skip ahead and let's knock out Items 14 through
25 18 and then we'll come back to the agenda. Commissioner
26 Monahan should be joining us shortly. So with that if we

1 can move ahead, Madam Public Advisor, to Item 14 which is
2 approval of the business meeting minutes.

3 Are there any public comments on Item 14?

4 MS. GALLARDO: This is Noemi Gallardo, Public
5 Advisor. There are no public comments on Item 14, the
6 minutes.

7 CHAIR HOCHSCHILD: Commissioner McAllister, would
8 you be willing to move Item 14?

9 BOARD MEMBER MCALLISTER: Yes, I will move this
10 item.

11 CHAIR HOCHSCHILD: Commissioner Douglas, would
12 you mind seconding?

13 BOARD MEMBER DOUGLAS: Second.

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

16 BOARD MEMBER MCALLISTER: Aye.

17 CHAIR HOCHSCHILD: Commissioner Douglas?

18 BOARD MEMBER DOUGLAS: Aye.

19 CHAIR HOCHSCHILD: Commissioner Gunda?

20 BOARD MEMBER GUNDA: Aye.

21 CHAIR HOCHSCHILD: And I vote aye as well. That
22 item passes 4-0.

23 Item 15, Lead Commissioner, Presiding Member
24 Reports. Commissioner Gunda?

25 BOARD MEMBER GUNDA: Yeah, thank you, Chair. I
26 just wanted to start off with some kind of thank yous at

1 the top. It's been exactly a month and a little bit since
2 the appointment. My first Business Meeting was on the day
3 I swore in thanks to you, Chair, for pulling me into that
4 meeting.

5 And as I start kind of getting into this role I
6 just want to really thank my colleagues, each one of you,
7 for your kindness and mentorship and guidance as I took on
8 this role. So thank you for helping me understand the
9 various aspects of this role, the nuances and developing
10 the necessary partnership to move the conversation forward.

11 And there are a few elements that I've been doing
12 over the last month I just wanted to note, one is trying to
13 meet one-on-one with all the DACAG members and trying to
14 understand some of their priorities. And I want to thank
15 our Public Advisor, Noemi Gallardo, for joining me on all
16 those calls and helping me set up those meetings.

17 There have been some incredible conversations.
18 And I'm hoping to do some community informational visits
19 later in the year when the COVID impacts reduce as well as
20 some site visits, to really kind of develop a tangible
21 action plan on some key priorities on what we can do to
22 ensure the SB 100 transition, as well as other major goals,
23 clean energy goals, that the state has.

24 I also want to thank the EAD staff for the work
25 that they have been doing to prepare for summer 2021.

26 There has been a number of analyses that have been

1 conducted to look at a variety of scenarios for reliability
2 under circumstances that we have seen last year. Last year
3 in August and September, we have experienced an extreme
4 heat wave situation. Kind of for those of you who were
5 following it was the August month we had the temperatures
6 that are 1-in-30 weather events. And September was a 1-in-
7 70. And it was also regional, complete west-wide, so we
8 are looking at a variety of analyses.

9 I want to call out specifically Lana Wong from
10 EAD for developing a simple but elegant hourly tool, stack
11 analysis tool, that helps us look at a variety of
12 scenarios. And we are looking through under what scenarios
13 there might be shortages, what hours, and how do we
14 mitigate them and contingencies.

15 I want to thank Commissioner Douglas for her
16 leadership on and working together on the contingencies for
17 this summer, as well as the future if some extreme
18 situations were to present.

19 Also, in vain of trying to figure out the
20 contingencies we have developed some conversations with
21 DWR. I want to thank the leadership from the CNRA, Matt
22 Baker; Carla from DWR, really working on at how best DWR
23 can support reliability. And then in the future with the
24 grid of California.

25 Also want to call out Reiko Kerr from LADWP for
26 some of the work that Reiko has been doing from neighboring

1 balancing authorities to support CAISO and then the product
2 system and emergency needs. So I just want to thank a lot
3 of work that has been happening between CAISO and CPUC.
4 Oftentimes this is not visible, but there is a lot of
5 personnel hours trying to work out the kinks. And then
6 making sure we have a clear plan going into this summer.

7 So those are the main activities that I have been
8 up to with Commissioner McAllister working on some data
9 issues and thinking about the future of data. And NDR,
10 (phonetic) there's another element. I think Commissioner
11 McAllister will cover that in his report, so I will leave
12 it to Commissioner McAllister.

13 And finally, as I build the office, I have my job
14 postings for the advisors. And really, for those of you
15 who are on the call who would love to join the CEC it would
16 be great to have talented, committed people join CEC and
17 help us move the mission and the vision of CEC as well as
18 the state forward.

19 And Chair, thank you for your leadership and
20 reliability. And so with that I'll close my comments.

21 CHAIR HOCHSCHLD: Thank you. Let's move on to
22 Commission McAllister.

23 BOARD MEMBER MCALLISTER: Okay, well great. I'll
24 keep it brief, but I wanted to welcome Commissioner Gunda I
25 think for the first full month. Congratulations on
26 surviving. And it sounds like you're set up well to

1 thrive. I didn't have any doubt. But it's actually as our
2 arrangements and committees and the key relationships kind
3 of evolve, it's actually a little bit bittersweet for me,
4 because there's some really great topics that I won't be
5 working on directly with Commissioner Gunda now.

6 But there also is a sort of an upside to that in
7 that I think my portfolio is readjusting kind of at a good
8 time, to focus on the Building Standards and some big
9 issues that are really now upon us. Like the IEPR, which
10 I'll be leading this year, and the building decarbonization
11 discussion within that alongside the standards and Load
12 Management Standards and some very complimentary sort of
13 universal things related to buildings and flexibility. So
14 I'm excited to be able to sort of focus on that and still
15 have bridges over into the demand response and data worlds
16 as Commissioner Gunda said.

17 So I'll just highlight kind of a little bit of an
18 update on data, I guess. And I want to give some kudos
19 here to Jason Harville and to Drew in the Executive Office
20 for keeping the trains running on that.

21 As you all know we, more than a couple of years
22 ago now we updated our data regulations to get more
23 complete information about consumption and other types of
24 data from the utilities and begin to integrate those into
25 sort of a central platform. And that has really moved
26 forward and it's getting -- I think not quite mature, but

1 it's really moved forward in a way that sets us up for just
2 structurally having a huge impact going forward into the
3 next year.

4 CHAIR HOCHSCHILD: Commissioner McAllister, would
5 you mind saying a little bit more on that? Like where are
6 we now in terms of what we have in-house and what is still
7 outstanding, and from a data perspective?

8 BOARD MEMBER MCALLISTER: Yeah. So as any of you
9 who've worked absolutely -- thanks for the question, Chair.
10 As anybody who has worked in this sector knows, sort of
11 data sharing and access in a sort of regulated environment
12 like this, can be pretty complicated. And there are
13 historical practices and there are hardware and software
14 kind of legacies that have to be overcome. There are
15 certainly legal and procedural issues with utilities sort
16 of within that regulated environment. So lots of layers to
17 that onion. And Jason has been really dogged in peeling
18 back those layers and working, establishing collaborative
19 relationships at the PUC and at the utilities.

20 And as you know, the big IOUs have smart meters,
21 the electricity IOUs have smart meters. And so getting
22 much of the consumption data from them has started. And
23 we've tested and sort of gotten the infrastructure ready to
24 bring that or the infrastructure up and running to bring
25 that data in, to clean it up and get it settled in a
26 repository. And so in beginning to get automated data

1 tools so that we can start to analyze that data and get
2 load-shaping and trending, and all that is the eventual
3 goal.

4 So what we're doing, what the team is doing is
5 that we've got the data from some of the utilities, not all
6 of them. So it's sort of a step-wise process to start to
7 do that. And obviously there's we treat the data with care
8 and we want to just make sure we get all those bases
9 covered as we move forward. So I'll sort of leave it at
10 that high level for now, but I think the infrastructure is
11 in place, which is really a huge milestone.

12 And as the data starts flowing and gets automated
13 that will really start to present staff with the ability
14 to, through Tableau and other tools, to do really heavy-
15 hitting analysis in a much more facile way than the
16 Commission and staff generally at the Commission is used to
17 having. So I think that it really will be a game changer
18 to be able to access large data sets, integrate them, and
19 ask creative questions. And not take months to do an
20 analysis, but take an afternoon potentially, right? So I
21 think that's going to be a transformational resource.

22 I'm really looking forward to applying that in
23 many, many different realms certainly on the building side.
24 That'll be on those management standards, on even impact
25 assessment for different initiatives and programs, working
26 with local governments to roll up information for them in

1 ways that makes sense for their climate and energy
2 planning.

3 I think there are many, many applications
4 including the demand response work that Commissioner Gunda
5 and I will be working on. You know, trying to see what the
6 Commission's role can be in terms of more rigorous analysis
7 about what actually happens in demand response events. And
8 then helping with the baseline issue that we've been
9 discussing and kind of understanding really what demand
10 response as a reliability resource can actually look like.
11 And certainly the role of buildings and customer behavior
12 and automation in that can be and how big that resource
13 really can be.

14 So I think our collective efforts to really
15 create the information landscape that we need to do that
16 work is coming along nicely. So I just wanted to highlight
17 that and give kudos to staff on that.

18 The last thing I'll say is the Title 24, Part 6
19 Building Standards are a big enterprise, a huge ship and
20 we're steaming ahead. Maybe steam is not the right energy
21 metaphor here. But it's where as I had a talk with you
22 about, and you said the other day I think in the all-hands
23 meeting, the proposal that we've got is a solid proposal.
24 It helps move us toward decarbonizing our buildings in a
25 really muscular way. But also leaves flexibility to help
26 the marketplace move along in a way that's cost-effective

1 for customers. And that all the trade (indiscernible) can
2 actually do, the builders and everyone else can actually
3 do.

4 So the trajectory really is just one that's
5 extremely positive for our buildings, so a lot to do there.
6 We're anticipating we have to go through the formal
7 regulatory process and 45-day language, 15-day language,
8 lots of administrative processes to go through with that
9 and lots of stakeholder feedback. I can't emphasize enough
10 we've gotten hundreds of comments with very meaty content.
11 And that's the lifeblood of the process.

12 So to get to really the Environment and the
13 Building Code, that it's doable and enforceable and also
14 helps us meet our climate and carbon goals. I think we're
15 on a good track there. So anyway, I wanted to just thank
16 all the staff, Will and well really the Building Standards
17 Office and the Compliance Office, there are pieces that are
18 theirs as well, for the whole regulatory package.

19 And certainly Linda Barrera and her team that
20 really stepped up and helped along the way. And lots of
21 big, big team effort, really literally dozens of people
22 that are working hard every day to make that happen. So I
23 want to just thank all of them. And Mike and Christine,
24 Will, Lorraine and their teams, I want to just say thanks.
25 And I'm looking forward to chugging ahead and getting this
26 across the finish line hopefully in mid-year July or so.

1 So presumably, Chair, you'll probably talk about
2 the rates en banc that we had?

3 CHAIR HOCHSCHILD: Yeah.

4 BOARD MEMBER MCALLISTER: But I think all of us
5 were there, so that's a really helpful resource. The CEC
6 staff to get a great report, and to take all of our
7 different policies and project them forward and try to
8 gauge impacts. I think that's a vision of the likely
9 coming rates environment, or at least some idea of where
10 that's likely to go is really helpful.

11 It's very helpful, and in not only in the context
12 of the building code, but really in lots of things we do
13 across the Commission, so I really appreciated that. And
14 with that I think I'll wrap up.

15 CHAIR HOCHSCHILD: Thank you, Commissioner.

16 Let's give a welcome to Commissioner Monahan back
17 from your hearing. Commissioner Monahan, what we're doing
18 is I think knock at this point Items 15 through 17. And
19 then we'll go back and pick up where we were on Item 7.

20 Commissioner Douglas, do you want to go next?

21 BOARD MEMBER DOUGLAS: Yes, and I just have a few
22 brief updates. I also participated in the CPUC en Banc on
23 rates and costs, so I won't speak more about that now.

24 We kicked off the Lithium Valley Commission on
25 February 25th. And so that was really exciting, yes. And
26 the Chair and I were there. We, the Lithium Valley

1 Commission met. It was just a great introductory session.
2 We covered a lot of ground. They elected a Chair and
3 they're really prepared to move forward and hit the ground
4 running. I think we've got such great opportunities there.
5 And I just --

6 CHAIR HOCHSCHILD: Maybe just share who the Chair
7 is for the benefit.

8 BOARD MEMBER DOUGLAS: Yeah so Silvia Paz, who's
9 the Governor's Office appointee on to the Commission. And
10 we've already been talking to her about how to move forward
11 and frame up the next meeting. They'd like to meet
12 monthly, which I think is a great, great trajectory given
13 how quickly this item can be moving.

14 And the last thing I'll raise is that yesterday
15 one of our international partners, Denmark, made a really
16 great presentation to the Marine Working Group, which is a
17 group that the Energy Commission has stepped up to help
18 convene. It involves a number of agencies active and
19 working together in the marine space, particularly at this
20 point on offshore wind, although the group touches on other
21 topics as well.

22 The presentation from Denmark was extremely
23 helpful. And despite the different physical environment in
24 the North Sea compared to California the experience that
25 they've had and some of the ways that they've overcome
26 challenges and framed and scoped environmental documents,

1 for example, is pretty instructive to us. So that was very
2 helpful. And I think I'll stop there.

3 CHAIR HOCHSCHILD: Thank you.

4 Commissioner Monahan, any updates on your end?

5 BOARD MEMBER MONAHAN: Well, it's centered a lot
6 around the Governor's Budget proposal. There's been a lot
7 of activities just trying to support the proposal.
8 Testifying up there, I'm sure you all heard, that's why I
9 was late today. Sorry about that. So testifying in the
10 Assembly Budget Subcommittee, already testified at the
11 Senate Budget Subcommittee. And I'm broadly representing
12 both ARB and the CEC'S perspective on this although thank
13 God we had a hand there with answering questions today. So
14 it was Sydney Vergis from the Air Resources Board and
15 different folks from the Department of Finance. It really
16 takes a village to respond to the questions that come up
17 and the learning process for me about how to communicate
18 more effectively with our legislative partners in this.

19 So yeah, I also want to acknowledge Anna Ferrera
20 who has just stepped in and is wonderful to work with and
21 really amazing. So she, together with Hannon (phonetic)
22 and the Chair, lots of folks have all been in this, trying
23 to support the Governor's proposal and get to the finish
24 line with the billion dollars on ZEV infrastructure and
25 reauthorization of the Clean Transportation Program.

26 So just quickly on the EV Charging Infrastructure

1 Strike Force, I'm just going to keep getting short updates
2 on that because I do think it's a really important forum,
3 especially given the reauthorization and the focus on ZEVs.
4 This EV Charging Infrastructure Strike Force is, I think,
5 that it'll be just helpful partners. And I mentioned
6 before we have moved away from -- I was the Co-Chair. Now
7 I'm the Chair of the Public Policy Advisory Committee.
8 Angelo Logan, who is a longtime advocate on reducing
9 (indiscernible) pollution comes from East Yard Communities
10 for Environmental Justice. Like he just has a lot of years
11 of experience and I really admire him as a person. So he's
12 going to be co-chairing it together with Cathy Zoi from
13 EVgo.

14 And you might recall we wanted equity to be part
15 of this from the get-go, not an add-on, but actually like a
16 part of it. And we thought overall the work groups would
17 just include equity. But what we found is that we need to
18 have a more focused discussion on equity and we formed an
19 equity work group that Larry Rillera is going to be co-
20 chairing or co-facilitating. I think we're doing Chair
21 language for that.

22 And really trying to see if we can come up with
23 language, specific language on what it means to be
24 equitable when it comes to EV charging infrastructure. And
25 I'm hopeful. I know that even the conversation is
26 important, that we will reach consensus? I hope so. That's

1 as far as I can go.

2 But these are complicated issues. They're worth
3 wrestling with, and we are going to get dirty in that
4 process.

5 So the membership is growing. It's going to go
6 more public. It's going to be for the first time we're
7 going to hold a near BK-compliant (phonetic) meeting at the
8 end of this month, so it will be public. And you can
9 access it if you want. The public can make comments,
10 there's going to be a website. It's just kind of
11 professionalizing, I would say.

12 And I think as we see the federal government get
13 invested more and more in this and the potential for a big
14 infrastructure bond, there's I think a lot of opportunities
15 for us to share lessons learned with the federal
16 government. And maybe even for them to join at some point
17 as part of the Public Policy Advisory Committee.

18 A staffing update, it may be in the email, but
19 Mona Badie, who was part of Vice-Chair Scott's office, has
20 joined my office as Second Advisor. And we're also happy
21 to announce that Scott Cox who works with Laurie ten Hope's
22 team and ERDD, and helped a lot with the reauthorization of
23 the EPIC program is going to be helping us 50 percent time
24 for the next couple of months on some communications-
25 related pieces related to the reauthorization.

26 I've been on the number of speaking panels. I

1 feel like actually with Chair Randolph, she and I are like
2 -- I don't know why, but we're on a lot of panels together
3 and it's been wonderful. She seems just wonderful, really
4 great, really collaborative, really smart. So I'm just
5 very much looking forward to working more with her.

6 We were just on this Women Leading California
7 Climate -- or something like that -- Panel. And it was
8 super-fun. So yeah, great to have. You know, we'll miss
9 Mary Nichols, but really great to have Liane in that role.
10 I think that's about it.

11 CHAIR HOCHSCHILD: Great update. Thank you,
12 Commissioner, and so grateful. Yeah, I just have to say
13 our team is incredible. I just love hearing from all my
14 colleagues, just the breadth and depth and expertise every
15 time.

16 On my side just a few highlights I wanted to
17 share. I met yesterday with the military. I want to thank
18 my Military Advisor Mike Gravely, who has continued to do
19 extraordinary work.

20 We have now funded almost \$50 million in R&D
21 projects on military bases in California. And that bears a
22 lot of fruit, not only because many of these projects
23 assisted us during this stress to the grid in August and
24 September, but because when we get things to scale,
25 including EV charging at L.A. Air Force Base and elsewhere,
26 these become models for bases around the country.

1 I thank Admiral Bolivar and General Connolly
2 (phonetic) for their service. They're both moving on in
3 June. We got some new talent coming in there. And we're
4 continuing to push out new projects, so it was a terrific
5 meeting.

6 Also I met with the new CEO of PG&E, Patti Poppe,
7 who I was very impressed by. She actually comes from the
8 Midwest, worked at GM for 15 years. And, I think is very,
9 very focused on climate solutions, particularly
10 transportation electrification. I think we'll be able to
11 work on a bunch of solutions with her in her new capacity.

12 We did have, as Commissioner McAllister
13 mentioned, an en banc with PUC on rates. That's obviously
14 something we're all mindful of. I think a lot of this is
15 being driven by climate, the wildfire liability costs and
16 other grid hardening that we have to do. And we have to be
17 very, very mindful of that, because we've got to keep
18 electric rates low.

19 I am very, very excited about the chance for
20 electrification to reduce electric rates when you look at
21 the fact that almost a billion dollars has been contributed
22 by electric vehicle owners in California today, to the rate
23 base for charging and more on the way. But that was a very
24 fruitful discussion.

25 And then just a little bit about Texas. I think
26 some of you saw that there was a report came out from the

1 International Energy Agency showing the blackout in Texas
2 was 500 times worse in terms of the impact than the
3 blackout we had in California. That should be a cautionary
4 tale for all of us. And I really want to thank
5 Commissioner Gunda especially for leaning in so heavily on
6 the reliability and resiliency work; Commission McAllister,
7 on a lot of the seed planting and the load management
8 standards. You know, we all need to own that and ensure
9 that we do everything possible to strengthen and build up
10 our resilience as a state as we approach August and
11 September months again.

12 I will stop there, I think. And what I'd like to
13 do now is just let's see if we can quickly get through
14 items 16 and 17. Then we'll go back to the regular agenda.
15 So does the Executive Director have a report, Item 16?

16 (Silence on the line.) Drew are you on mute? There we go.

17 MR. BOHAN: Can you hear me?

18 CHAIR HOCHSCHILD: Yeah, I can hear you. Do you
19 have a report?

20 MR. BOHAN: Yeah, I do. I'm having trouble
21 getting auto-muted by mistake here. But anyway, yeah I
22 just wanted to acknowledge a few of our colleagues.
23 Yesterday at our town hall we acknowledged Linda Spiegel
24 who will be the Energy Commission's new Chief Deputy. She
25 measures her tenure with our organization in decades not
26 years. She's been with us for quite some time, highly

1 regarded by everybody she interacts with. She's humble.
2 She works with people really well at all levels of the
3 organization and she's just super-smart and great to get
4 along with. So I'm so excited to have her as a new
5 partner.

6 Greiana Williams, who we're calling our Change
7 Agent in Chief, and she will be leading our move to the new
8 CNRA building. Many in the organization know her and many
9 others got an introduction to her yesterday during her
10 presentation at the town hall. But she's been with us for
11 a couple years in our Training Office.

12 I also just want to call out Rob Cook who's been
13 helping with the larger move effort, the pack and purge, a
14 lot of little details it takes to move an organization from
15 one place to the next. It's not trivial.

16 And then, finally, this is Cody our Secretariat,
17 and it's his last Business Meeting. He's moving on to
18 another -- he got a promotion and will be moving on in
19 state service. But he's been behind the scenes and has
20 just done a very fine job for us as Secretariat.

21 Thank you, Chair.

22 CHAIR HOCHSCHILD: Thank you. All right let's
23 move on to Public Advisor's Report.

24 MS. GALLARDO: Hello, this is Noemi, Public
25 Advisor. I do have a couple of items. I'll try to go
26 through these quickly. And I also want to say I'm not

1 turning on my video, because I'm battling allergies as of
2 this morning and not winning. So I'm keeping my video off
3 to spare you. So if we could go to the next slide, please.

4 The first item I wanted to give you an update
5 about is the IDEA Initiative. So again, IDEA stands for
6 Inclusion, Diversity, Equity and Access. Carousel Gore and
7 I are still moving this forward even though we've lost half
8 of our team with Courtney Smith and Darcie Houck leaving.

9 We have a task force meeting coming up March
10 24th, so this is a group of CEC employees who are getting
11 together to help advance all these principles for the
12 benefit of our workforce. At that meeting we're going to
13 discuss allyship, becoming better allies to each other at
14 the Commission and elsewhere. We'll review staff
15 recommendations as well that they're doing to improve
16 workforce-related policies, practices, etcetera.

17 And then we will also be uplifting some employee-
18 led activities. And I wanted to mention this, because our
19 employees have been fantastic. Even though we've been in
20 virtual mode they are still finding ways to engage and be
21 socially active and creative about it. So one of those
22 ways is through employee resource or affinity groups. I
23 wanted to share that Renee Webster-Hopkins, for example, is
24 starting a rainbow affinity group or LGBTQ-plus community.
25 We also have the Disability Advisory Committee and a few
26 others that are starting to form.

1 And then I'll add that employees are also doing a
2 lot on celebrations. So if we can go to the next slide I
3 want to show you quickly Black History Month celebration
4 went really well. This is a photo showing how fun it was.
5 We had great speakers and this was led by Dorothy Murimi
6 from the Public Advisor's Office, so big thank you to her.

7 CHAIR HOCHSCHILD: Noemi, I thought I asked you
8 to airbrush out the gray hairs I see. (Laughter.)

9 MS. GALLARDO: You look fantastic here.

10 So we'll move forward. I have another great
11 picture to show you. So this is from our International
12 Women's Day celebration, which it took a team of us to do,
13 but really spearheaded by Sylvia Palma-Rojas from the
14 Renewables Energy Division, so appreciate her doing that.

15 And I also wanted to say thank you to
16 Commissioners Douglas and Monahan for making remarks and
17 just telling us about their personal journeys and specific
18 experiences that they've had. Several staff reached out
19 and told me that that meant a lot to them. So again, thank
20 you Commissioners Douglas and Monahan.

21 And then the second item that I wanted to talk to
22 you about was -- next slide -- we did a survey related to
23 business meetings in order to help improve our
24 participation and engagement. We had about 78
25 participants. And I want to also inform the audience that
26 we still have that survey available if they want to

1 participate. And really quickly wanted to show some
2 results. So next slide.

3 We asked the question about attendance, and we
4 found out that most people are rather new or infrequent
5 participants. It's either their first or have only joined
6 two to four. Next slide.

7 We asked about their reasons for joining. Most
8 attend for work, you know 63 percent there. But there are
9 also others who indicated they also feel passionate and see
10 the direct impacts of those, 42 percent who marked all of
11 the above. Next slide.

12 We asked about their preferences on how to join.
13 And I want to highlight this one, because Zoom stood out as
14 one that they really appreciate, even more so over in-
15 person. And a good majority also indicated that they
16 prefer multiple options to join us, so I think going into
17 our new building we will have really good AV and different
18 ways for people to join. Next slide.

19 And then we also asked about their ease to
20 participate. And I was really happy that most people
21 indicate that it is easy to participate in our business
22 meetings. And a few indicated there might be some
23 improvement needed in terms of getting material and
24 whatnot. Next slide.

25 So here are some just key takeaways. We should
26 continue in enabling various ways to join as mentioned,

1 including Zoom. Potentially when we're back in person and
2 it's all safe, maybe we can do some of our meetings in the
3 communities too, as another way to bring the meetings
4 closer to the community. And then we should also determine
5 additional ways for the public to access meeting material.
6 That was one of the indicators there, which I'll be
7 thinking about.

8 And then also we should share additional ways
9 attendees can participate in general CEC efforts, so I'm
10 also thinking about that one.

11 And that concludes my report, Chair. Thank you
12 so much.

13 CHAIR HOCHSCHILD: Thank you so much, Noemi.
14 You know, you do such an amazing job just keeping all the
15 trains running. And also, I know I speak for all my
16 colleagues when I say just our culture has really been
17 enhanced by all of the energy you put into these wonderful
18 staff events. And not to mention the Clean Energy Hall of
19 Fame, and so thank you for all you do.

20 I think actually what I'd like to do with my
21 colleagues' permission is just actually power through these
22 last two items and then take a break for lunch. And we'll
23 reconvene and take up Items 7 through 14 after lunch.

24 So Item 18, do we have any public comment? This
25 is just the general public comment, not on any item. Madam
26 Public Advisor, is there any comments for Item 18?

1 MS. GALLARDO: So I'll go through the
2 instructions first. Well, actually you know what? I think
3 we're supposed to do general public comment at the end.
4 Let me just check with our -- (Overlapping colloquy.)

5 CHAIR HOCHSCHILD: I've been in dialogue with the
6 Chief Counselor who said it's actually fine either way. My
7 thought was just before lunch.

8 MS. GALLARDO: Okay.

9 CHAIR HOCHSCHILD: We're going to lose some
10 people at lunch, so do you have anyone wishing to make
11 public comment not on one of the other items we're going to
12 hear?

13 MS. GALLARDO: Understood, so on Item 18 we do
14 not have any public comment.

15 CHAIR HOCHSCHILD: Okay let's move on to Item 19,
16 Chief Counsel's Report.

17 MS. BARRERA: Hi, Chair. Hi, Commissioners. I
18 do not have a report for the Chief Counsel today.

19 CHAIR HOCHSCHILD: Okay, thank you.

20 So what I suggest we do is adjourn until 1:00
21 o'clock. And then we'll take up Items 7 through 14 at that
22 time. Does that sound okay to everybody? All right, let's
23 reconvene at 1:00.

24 (Off the record at 12:05 p.m.)

25 (On the record at 1:00 p.m.)

26 MS. GALLARDO: Hello, this is Noemi Gallardo, the

1 Public Advisor, wanting to speak to attendees if you're on
2 the line to let you know, we are in a break. Again, the
3 California Energy Commission is taking a break during its
4 March 17 Business Meeting. We will resume out 1:00 p.m.
5 Thank you so much for your patience.

6 [The break message repeats several times.]

7 CHAIR HOCHSCHILD: All right. Madam Public
8 Advisor, are we back up and running?

9 MS. GALLARDO: Yes, we are. You may begin,
10 Chair.

11 CHAIR HOCHSCHILD: Okay. Well, first of all
12 Commissioner Monahan, we missed you in the beginning
13 meeting because you were in the legislative hearing. But
14 Happy St. Patrick's Day to you. It's nice to have a
15 holiday named after you and I wanted to wish you a Happy
16 St. Patty's Day.

17 In addition, we did get one more request for
18 public comment under Item 18. We'll just take that at the
19 conclusion of Item 7, so with that, if we could return to
20 where we had left off, which was Item 7 Cerritos Community
21 College District. And then pick up there.

22 MR. RILLERA: Good morning Chair and
23 Commissioners. My name is Larry Rillera, staff with the
24 Fuels and Transportation Division. I am here to present
25 Item Number 7.

26 This is a proposed \$1.5 million augmentation

1 agreement with Cerritos Community College District. The
2 Clean Transportation Program targets investment in the
3 development, deployment, and scaling of zero-emission
4 vehicles or ZEVs and ZEV infrastructure. To date, the
5 Clean Transportation Program has invested over \$35 million
6 in the workforce portfolio. Next slide, please.

7 The benefits of the project includes building on
8 investments for career transportation pathways, preparing
9 and developing the next generation of ZEV workers, and
10 enhancing automotive and truck skills. Next slide, please.

11 The proposed item before you today builds on an
12 existing and successful investment and partnership with
13 high school career technical education automotive programs.
14 Specifically, this proposed agreement would add \$1.5
15 million to this existing investment and extend the term of
16 the agreement by 24 months.

17 Cerritos College would modify a training program
18 to support additional high schools. The new schools would
19 include light-duty maintenance, automotive classes and new
20 ZEV truck curriculum and classes as well. The agreement
21 also requires an evaluation of high schools that have
22 received buses from the Energy Commission's School Bus
23 Replacement Program. In this way, the high school programs
24 can learn from their fleet technicians on the electric
25 school bus service and maintenance that will also lead to
26 good jobs within their communities. Next slide, please.

1 The response and results of the program to date
2 have been tremendous. Twenty-eight high schools have been
3 funded to date; 19 of the 28 schools have reported over
4 1,800 students have been enrolled in this class. The
5 project is a triple bottom line winner in that the
6 investment is targeted to frontline and equity communities
7 where these schools exist. Automotive programs offer good
8 job prospects as dealerships are partners. And lastly, the
9 location of nearby community colleges increases the
10 likelihood of securing a degree and attainment of a livable
11 and sustainable wage. Next slide, please.

12 In closing, staff recommends approval of this
13 agreement with Cerritos Community College District for \$1.5
14 million and approval of staff's determination that the
15 project is exempt from CEQA.

16 This concludes my presentation. Thank you for
17 your consideration of this item.

18 CHAIR HOCHSCHILD: Thank you, Larry.

19 Madam Public Advisor, any public comments on Item
20 7?

21 MS. GALLARDO: This is Noemi Gallardo, Public
22 Advisor, and yes, we do have a comment for Item 7. So this
23 is Pablo, and Pablo we are going to open up your line. A
24 reminder to please spell your name and also indicate your
25 affiliation. You have three minutes. Your line is open,
26 please begin.

1 MR. GORRICETA: Thank you very much. Hi, good
2 afternoon, Commissioners. Can you hear me?

3 CHAIR HOCHSCHILD: We can hear you, yes.

4 MS. GALLARDO: Yes, we can.

5 Okay, thank you very much. My name is Pablo
6 Gorriceta. It's P-a-b-l-o G-o-r-r-i-c-e-t-a. And I work
7 as an intern for Acterra. (phonetic)

8 We know that the CEC is doing a great job to take
9 the initiative to grow and increase clean transportation to
10 (indiscernible) in the advanced transportation and
11 logistics sector of California Community Colleges,
12 particularly with the Cerritos Community College.

13 We understand this Community college is qualified
14 to increase workforce interest for clean transportation
15 through hands-on training, with its advanced vehicle
16 technologies. But we wonder if the CEC has already
17 established a system where the relevant business sector and
18 the workforce development training providers can come
19 together on a regular basis to discuss comprehensive gap
20 analyses when it comes to clean transportation workforce
21 training.

22 We think this is necessary to keep the zero
23 emission vehicle workforce development program relevant.
24 We would like to see if there is a formal process already
25 in place to facilitate the continuing critical dialogue
26 between industry players and the workforce developers.

1 A marketplace and workforce training program will
2 definitely promote the state's transition to clean energy
3 and transportation and provide more opportunities for our
4 underrepresented communities. Thank you very much.

5 MS. GALLARDO: Thank you.

6 Chair, that is the final comments on Item 7.

7 CHAIR HOCHSCHILD: Okay, thank you for that
8 comment. Let's move on to Commissioner discussion,
9 Commissioner Monahan?

10 BOARD MEMBER MONAHAN: I actually am curious,
11 Larry, the question that came up around is there a forum
12 for workforce, for having a conversation between the
13 technology providers and the workforce. I mean we do --
14 just to respond quickly, we do have through the Clean
15 Transportation Program Advisory Committee, we have
16 discussions about workforce and there is representation
17 from the manufacturing community. But I'm curious, is
18 there any other forum for that that you know of, Larry?

19 MR. RILLERA: Yes. Thank you, Commissioner.
20 There are regional apparatus's and institutions such as
21 LACI (phonetic) in Southern California, others in the
22 Central Valley and some in the Bay Area. Where they have a
23 little more focused industry discussions with workforce
24 partners and their transportation career pathway, whether
25 it's high schools or colleges or even non-high schools.
26 And certainly partnerships with a state agencies as well

1 that are facilitating these conversations.

2 Pablo's comment is (indiscernible) when you start
3 to look at the various segments. He mentioned
4 manufacturing with Acterra, but certainly there's others
5 all along the product development continuum including
6 service and replacement where these conversations are
7 taking place.

8 BOARD MEMBER MONAHAN: Thank you. Well, I
9 strongly support this grant and I really want to commend
10 Larry for his leadership in this space. And I think he's
11 really trying to connect all the dots. I love that it
12 connects to the school bus program as well, one of our
13 personal favorites.

14 And we want to make sure that we have a workforce
15 trained up and that we support economic development and
16 disadvantaged communities. And this program really does
17 connect the dots, so I strongly support it and hope all of
18 you do as well.

19 CHAIR HOCHSCHILD: Thank you. Unless there's
20 other comments from our colleagues, Commissioner Monahan,
21 would you be willing to make the motion?

22 BOARD MEMBER MONAHAN: I move approval of Item --
23 I don't even know what number we are on?

24 CHAIR HOCHSCHILD: Seven.

25 BOARD MEMBER MONAHAN: Item 7, thank you. I move
26 approval of Item 7.

1 CHAIR HOCHSCHILD: Commissioner Gunda, would you
2 be willing to second?

3 BOARD MEMBER GUNDA: Yes, I second that.

4 CHAIR HOCHSCHILD: All in favor say aye.
5 Commissioner Monahan?

6 BOARD MEMBER MONAHAN: Aye.

7 CHAIR HOCHSCHILD: Commissioner Gunda?

8 BOARD MEMBER GUNDA: Aye.

9 CHAIR HOCHSCHILD: Commissioner McAllister?
10 Commissioner McAllister, you're on mute.

11 BOARD MEMBER MCALLISTER: Sorry, I was double
12 muted, aye.

13 CHAIR HOCHSCHILD: Commissioner Douglas?

14 BOARD MEMBER DOUGLAS: Aye.

15 CHAIR HOCHSCHILD: And I vote "aye" as well.
16 That item passes unanimously.

17 Let's move on to Item 8, California -- oh sorry,
18 Item 8 was removed. Let's move on to Item 9, CALSTART.

19 MS. GALLARDO: Chair, did we want to take a
20 general public comments that we missed earlier?

21 CHAIR HOCHSCHILD: Oh, I apologize. Yes, I did
22 say we were going to do that after, so you had someone from
23 Acterra? We had one public comment.

24 MS. GALLARDO: Yeah, we have two people wanting
25 to make public comment. Let me just make sure they're on.

26 CHAIR HOCHSCHILD: Sure.

1 MS. GALLARDO: Let's see, we'll start with Abdel
2 from Acterra. Abdel, your line is open. Please spell your
3 name and indicate your affiliation. You may begin.

4 ABDEL: Hello, can you hear me?

5 CHAIR HOCHSCHILD: We can hear you.

6 MS. GALLARDO: Yes.

7 ABDEL: My name is Abdel, Alpha-bravo-delta-echo-
8 lima. So I'm a Bay Area Resident and a student at Cañada
9 College. On behalf of my community. We urge the CEC to
10 mandate all new buildings to be electric. Many cities have
11 already taken action and it's time for the CEC to take a
12 step further (indiscernible) an all-electric baseline for
13 new construction in the 2022 Building Code.

14 To start, people living at home with gas
15 appliances are more at risk to numerous health concerns. A
16 study by UCLA researchers found that nearly 70 percent of
17 Californians use gas for cooking, yet less than 35 percent
18 have range hoods, which are needed for proper ventilation.
19 Inhaling gases such as NO2 is extremely dangerous,
20 especially for the elderly who are more susceptible to lung
21 disease.

22 It can also be dangerous to children who when
23 exposed to elevated levels of NO2 are more susceptible to
24 lung disease and allergies.

25 Finally low-income families, especially ones
26 living in small apartment buildings with slow ventilation

1 are especially at risk.

2 Similarly, my community and others around
3 California need to transition to zero emission buildings
4 ensures the state needs its current climate goals. All-
5 electric buildings are not only better for the environment,
6 they are often cheaper. Based on research done by Rocky
7 Mountain Institute for the City of Oakland it is estimated
8 to cost between 2,400 and 2,700 more per home to install
9 two separate systems than it would just to install a single
10 heat pump.

11 Further, the CEC presented information indicating
12 that the 2022 Code that the baseline would require one
13 electric appliance per residential building depending on
14 the climate zone. While this is a push in the right
15 direction, we need further action to incentivize homeowners
16 towards all-electric appliances.

17 Although electric appliances are often more
18 efficient many home owners choose gas appliances, because
19 they have been around for over 100 years and will get the
20 job done. Thus the CEC should require heat pumps in all
21 homes, regardless of their climate zones.

22 And finally, according to the 2017 American
23 housing survey 40 percent of new homes in the nation are
24 built with electric heat pump installs. And California is
25 lagging behind at only 8 percent. Other countries have
26 also taken action. France released that it will require

1 all-electric space heating in single-family homes starting
2 in 2021. Also 39 cities in California have updated their
3 Building Code to become greenhouse gas free.

4 Now, the CEC needs to take it a step further and
5 set an all-electric baseline for new construction in the
6 Building Code. Thank you.

7 CHAIR HOCHSCHILD: Thank you. We have one
8 additional comment?

9 MS. GALLARDO: Yes, that's correct. So Shrayas
10 will be joining us through the Zoom. I believe he's going
11 to turn on his video if he hasn't already. There he is.

12 MR. JAKTAR: Hi there.

13 MS. GALLARDO: I'll spotlight him.

14 MR. JAKTAR: Great, can you hear me now?

15 CHAIR HOCHSCHILD: We can hear you fine, sir.

16 MS. GALLARDO: Yes, we can.

17 MR. JAKTAR: Thank you. Yeah, good afternoon.
18 Thanks so much for letting me offer a few comments. My
19 name is Shrayas Jaktar with the California Workforce
20 Development Board. And I apologize I didn't call it in
21 time before the lunch break to offer these comments.

22 You know, on behalf of the State Workforce Board
23 we just want to have our support and appreciation for the
24 SB 100 Report. Of course, as you saw there's a lot of work
25 that needs to be done to get to 100 percent clean energy
26 and with that comes a lot of job opportunities.

1 And at the Workforce Board we're are all about
2 quality: quality jobs, quality training opportunities. And
3 so it was really excellent to see an emphasis in the report
4 on high-quality job creation, and of course workforce
5 development tied to good jobs.

6 I just want to say that you know only when we pay
7 attention to job quality, can we have a real shot at
8 meaningfully advancing economic equity, which I think is
9 our shared interest. We were glad to have been involved in
10 sort of reviewing some drafts and offering input, speaking
11 on a panel during the SB 100 workshop last fall thanks to
12 Jim Bartridge's very collaborative spirit and bringing us
13 in. And we really look forward to more collaboration with
14 the Energy Commission.

15 And as you may know, we received GGRF funding a
16 couple years ago for two things. One to build on the
17 multi-craft pre-apprenticeship work that we piloted with
18 your help, with Prop 39 dollars. So we're now scaling that
19 up to all parts of California, to help develop a skilled
20 and diverse cohort of candidates for state registered
21 apprenticeship in the trades that would be dispatched to
22 any of these clean energy projects, possibly.

23 And then, what I think is probably a little less
24 known is our High-Road Training Partnership Program, which
25 is the same model of workforce development, but in sectors
26 outside of construction. And the lines are starting to get

1 a little blurred, but I just want to mention that we are
2 awarding funding to projects that are addressing offshore
3 wind, building decarbonization, energy storage and micro
4 grids and more.

5 So again, we look forward to being able to share
6 the results of those training partnership projects and I
7 think continued collaboration as those projects get going.
8 So again, just offering our appreciation for the work
9 that's been done. And the staff who really brought us in
10 and made us a part of the effort.

11 And maybe in closing I'll just say that I'm also
12 working with the Governor's Office of Planning and Research
13 to co-lead the Just Transition Roadmap for the state that
14 will come out this fall. And so as there's more real
15 conversation around phasing out our fossil fuel electricity
16 generation units in the state. We hope that that roadmap
17 will be useful, as we all think together about how to
18 prepare for the transition to carbon neutrality. Thanks so
19 much.

20 CHAIR HOCHSCHILD: Thank you.

21 Madam Public Advisor, any further public
22 comments?

23 MS. GALLARDO: This is Noemi, the Public Advisor,
24 no additional comments.

25 CHAIR HOCHSCHILD: Okay. Thank you. Let's
26 resume with Item 9, CALSTART.

1 MR. KOZUCH: Good Afternoon Chair and
2 Commissioners. My name is Matthew Kozuch, staff with the
3 Fuels & Transportation Division's Freight & Transit Unit.
4 We are seeking approval today for an agreement with
5 CALSTART, Inc., for a \$50 million block grant to design,
6 implement, and fund, with CEC oversight, various medium-
7 and heavy-duty zero-emission vehicle infrastructure
8 incentive projects throughout California. And to adopt
9 staff's determination that this action is exempt from CEQA.

10 \$17 million in funds is currently available to
11 design and implement this medium- and heavy-duty block
12 grant project. With additional funds up to a total of \$50
13 million to be added at future dates for similar activities,
14 subject to future appropriations and Clean Transportation
15 Program Investment Plan funding allocations. The CEC may
16 add funds in the future beyond the \$50 million to conduct
17 additional similar activities. Next slide, please.

18 The goal of this Agreement is to develop and
19 implement one or more medium- and heavy-duty infrastructure
20 incentive projects to address the critical barriers and
21 gaps to the deployment of medium- and heavy-duty zero-
22 emission vehicle infrastructure in California. The
23 infrastructure incentive projects will respond to industry
24 demand and community needs, as well as be flexible and
25 easily scalable as available funds increase.

26 The agreement is designed to speed up the

1 deployment and installations of medium- and heavy-duty
2 zero-emission vehicle infrastructure in order to provide
3 more accessible and reliable electric charging and hydrogen
4 refueling options, which are critical for accommodating
5 future medium- and heavy-duty zero-emission fleets. This
6 will help achieve the ambitious goals set by Executive
7 Order N-79-20, which requires that 100 percent of medium-
8 and heavy-duty vehicles in the state to be zero-emission by
9 2045.

10 In addition, this agreement will enable targeted
11 infrastructure incentive deployment to disadvantaged
12 communities per CalEnviroScreen 3.0, low-income communities
13 per AB 1550, California Native American tribes, and other
14 underserved communities. These groups have been
15 disproportionately and negatively burdened by medium- and
16 heavy-duty vehicle emissions and their corresponding health
17 impacts, making focused zero-emission incentives of vital
18 equity importance. Next slide, please.

19 CALSTART will develop and implement targeted
20 medium- and heavy-duty infrastructure incentive projects
21 through this block grant. They will design the internal
22 controls, processes, and procedures necessary to process
23 block grant funding, evaluate incentive requests, effect
24 payment for valid incentive requests, and produce accurate
25 monthly fiscal accounting and reporting.

26 CALSTART will also design and implement a robust,

1 user-friendly website to report on incentive project
2 status, advertise the availability of incentives, provide
3 instructions and forms, and enable submission and tracking
4 of incentive applications. Furthermore, CALSTART will
5 create an equity strategy that includes focused outreach to
6 ensure maximum project benefit to underserved communities.
7 Next slide, please.

8 In addition, this block grant project will
9 complement and leverage best practices from other medium-
10 and heavy-duty vehicle funding programs such as the
11 California Air Resources Board's Hybrid and Zero-Emission
12 Truck and Bus Voucher Incentive Project or HVIP, the Clean
13 Off-Road Equipment Voucher Incentive Project or CORE, and
14 Carl Moyer programs by providing zero-emission
15 infrastructure incentives.

16 CALSTART will additionally work to synchronize
17 block grant infrastructure incentives with these programs
18 to enhance the ability of applicants to fund their medium-
19 and heavy-duty zero emission projects. Next slide, please.

20 In summary, we would like to recommend approval
21 of this \$50 million block grant, with \$17 million of
22 funding currently available at this time. In addition, we
23 would like to recommend adoption of staff's determination
24 that this action is exempt from CEQA.

25 We would like to thank you for your time and
26 consideration of these items. Bill Van Amburg, the

1 Executive Vice President of CALSTART, is here to provide
2 public comment. And we are available for any questions you
3 may have. Thank you very much and this concludes my
4 presentation.

5 CHAIR HOCHSCHILD: Thank you, and this is a very
6 significant item. I will say it's not often we dole out
7 funds in this amount, so this is a really exciting
8 milestone.

9 Let's go first to public comment, Madam Public
10 Advisor.

11 MS. GALLARDO: This is Noemi, the Public Advisor.
12 I actually do not -- oh actually, I do have someone on for
13 this item. Sorry about that, so that's Bill from CALSTART.
14 We will open up his line and Bill, I'll remind you to
15 please spell your name and indicate your affiliation.

16 All right, so if we could please open up Bill's
17 line on Verizon, Bill Van Amburg of CALSTART. Bill, your
18 line is open, you may begin.

19 MR. VAN AMBURG: I feel like saying, can you hear
20 me now since it's a Verizon line. (Laughter.)

21 CHAIR HOCHSCHILD: We can hear you.

22 MR. VAN AMBURG: Thank you very much. I am Bill
23 Van Amburg, V-a-n A-m-b-u-r-g, Executive Vice President
24 here at CALSTART. And Chair Hochschild and Lead
25 Commissioner Monahan, Commissioners and staff we really
26 first want to deeply thank you for the trust that you've

1 shown in selecting CALSTART for this critically important
2 project and the responsibility that goes with it.

3 We do take that trust most seriously as we have
4 on all the programs that we've been managing for the State
5 of California, for the last more than a decade.

6 And this is a vital block grant for commercial
7 zero emission vehicle infrastructure, because it can really
8 set the state up for success and by leadership example
9 frankly, the nation and the world as well.

10 We know from our work with industry and fleets,
11 utilities and equipment providers, air districts,
12 communities, that streamlining process and increasing the
13 pace of deployment and scale and the penetration of zero
14 emission medium- and heavy-duty vehicles is critical for
15 the state's climate and air goals. And that it's become
16 the really the long pole in the tent. The vehicles of
17 becoming available, and now we really need to move the
18 infrastructure.

19 Working together with CEC staff we really relish
20 the opportunity to create what will become the nation and
21 the world's first fast track, easy to use, and focused
22 infrastructure incentive program targeting funds to drive
23 faster deployments. And also support communities that need
24 to help them most.

25 We would like to add that the Energy Commission
26 is one of the key and early signatories to the global

1 commercial vehicle drive to zero programming. One of the
2 key tenants of that global program is to set in place the
3 necessary policies, incentives and investments to support
4 commercial zero emission vehicles moving the scale.

5 This project does that aggressively. We're proud
6 of what the state is doing, and it really does set a
7 framework and leadership we hope for the world to follow on
8 infrastructure deployment.

9 So we're excited to get started. We hope to
10 share additional information on the project, perhaps at a
11 public event as soon as April. And thank you again for
12 your confidence and support.

13 CHAIR HOCHSCHILD: Thank you. Any other
14 comments?

15 MS. GALLARDO: No other comments on Item 9.

16 CHAIR HOCHSCHILD: Let's go to Commissioner
17 discussion, Commissioner Monahan?

18 BOARD MEMBER MONAHAN: Yeah, well I think Matthew
19 and the team for this proposal. And also give a
20 congratulations to Bill and the team at CALSTART for
21 winning the solicitation.

22 And you know that really builds on the flagship
23 CALeVIP program for light-duty charging infrastructure.
24 Now we're turning our sights to heavy-duty infrastructure.
25 And as we all know heavy-duty vehicles are major polluters,
26 especially when it comes to toxic diesel exhaust and smog

1 forming nitrogen oxide. So it really tackles a critical
2 public health issue.

3 I'm excited also because you know CALSTART is
4 administering the Truck Rebate Program that CARB funds.
5 It's called HVIP. And the fact that they are also going to
6 be the administrators for this program gives me like a lot
7 of -- I just think that it reflects what we're trying to
8 do, which is really create a seamless experience for the
9 grantees. And to really connect the dots between the
10 agencies, so that we are all like you know, working
11 together in a really deeply collaborative environment to
12 make it easy for the outside world to get our grants and to
13 accelerate zero-emission transportation.

14 So this really -- I'm very excited to see how
15 this project launches and I strongly support it.

16 CHAIR HOCHSCHILD: Thank you, Commissioner.

17 Any other comments from Commissioners? Seeing
18 none, Commission Monahan, are you willing to move the item?

19 BOARD MEMBER MONAHAN: Yes, I move this item
20 okay.

21 CHAIR HOCHSCHILD: Okay. Is there a second?
22 Commissioner McAllister, would you be willing to second?

23 BOARD MEMBER MCALLISTER: I'll second.

24 (Sound interrupts meeting briefly).

25 CHAIR HOCHSCHILD: All in favor say aye.

26 Commissioner Monahan?

1 BOARD MEMBER MONAHAN: Aye.

2 CHAIR HOCHSCHILD: Commissioner McAllister?

3 BOARD MEMBER MCALLISTER: Aye.

4 CHAIR HOCHSCHILD: Commissioner Douglas?

5 BOARD MEMBER DOUGLAS: Aye.

6 CHAIR HOCHSCHILD: Commissioner Gunda?

7 BOARD MEMBER GUNDA: Aye.

8 CHAIR HOCHSCHILD: And I say "aye" as well. That
9 item passes unanimously. Let's move on to Item 10,
10 Electric Vehicle Ready Communities Phase II.

11 BOARD MEMBER MONAHAN: And I have to recuse
12 myself from Item a.

13 CHAIR HOCHSCHILD: Okay, why don't you stand up.
14 And then Noemi will notify --

15 BOARD MEMBER MONAHAN: Can I say why I have to
16 recuse myself?

17 CHAIR HOCHSCHILD: Good, yes.

18 BOARD MEMBER MONAHAN: I'm recusing myself on the
19 proposed award to the City of Sacramento, which includes a
20 sub-award to the University of California Davis for
21 transportation studies. I'm on the Board of Advisors for
22 the ITS, UC DAVIS ITS Program. In that role I do not make
23 governance decisions on behalf of the institute. We are
24 there to provide guidance and oversight for the program and
25 it's four branches.

26 I don't get any compensation in any form

1 including reimbursements or per diem for expenses. So
2 there's no financial interests in which there would be a
3 conflict of interest under the Public Reform Act or
4 Government Code Section 1090. But just in an abundance of
5 caution I am recusing myself to avoid any perception of a
6 conflict of interest.

7 So I will step away, thank you.

8 CHAIR HOCHSCHILD: Yes, so we'll have Noemi
9 contact you (indiscernible) so staff presentation?

10 MS. PUREWAL: Good afternoon, Commissioners. My
11 name is Sharon Purewal and I am a staff member in the Fuels
12 & Transportation Division's Advanced Vehicle &
13 Infrastructure Office.

14 Today staff is seeking approval of two agreements
15 awarded under the Electric Vehicle, or EV, Ready
16 Communities Challenge Phase II - Blueprint Implementation.
17 The purpose of this solicitation was to fund projects
18 developed and identified in Phase I, which was to develop
19 EV Blueprints. Funding is provided through the Clean
20 Transportation Program. Next slide, please.

21 The benefits to California are to improve
22 accessibility to charging infrastructure, to accelerate the
23 goals to increase California's zero-emission vehicle
24 infrastructure, to reduce barriers to those living in
25 disadvantaged communities as defined by CalEnviroScreen 3.0
26 including in the cities of Richmond, Concord, and Pittsburg

1 under the Contra Costa Transportation Authority; and in
2 disadvantaged communities in the City of Sacramento.

3 EV workforce training components in both of these
4 proposed agreements will support green job creation and
5 green job accessibility in the regions mentioned above.
6 Next slide, please.

7 Our first proposed agreement is with the City of
8 Sacramento. Their project objectives include installing EV
9 chargers across public libraries and community centers,
10 with at least two thirds of those connectors located in
11 disadvantaged communities. They also seek to procure e-
12 bikes for a pilot lending program operated by the local
13 library. And will be offering incentives through the
14 Sacramento Air Quality Management District for car sharing
15 members in project neighborhoods.

16 Through this project, the City of Sacramento will
17 be engaging with the California Conservation Corps for EV
18 job training and to further electric vehicle charging
19 installation support. And will also focus on establishing
20 more meaningful relationships with the community members to
21 increase EV education, awareness, to involve more community
22 input and to advancing the electric vehicle charging
23 infrastructure goals in this region. Next slide, please.

24 Next we have Contra Costa Transportation
25 Authority. Their project objectives include installing
26 electric vehicle charging stations at sites in the cities

1 of Richmond, Concord, and Pittsburg. Contra Costa
2 Transportation Authority also plans to create workforce
3 development programs to support those who live, work, and
4 play in the surrounding area.

5 To further support green workforce development
6 opportunities the Contra Costa Transportation Authority
7 will coordinate training for local residents, mainly in
8 areas considered disadvantaged communities, to repair and
9 maintain electric vehicle charging infrastructure. They
10 also aim to establish an EV car share program. Next slide,
11 please.

12 Staff recommends approval of the proposed
13 agreements with Contra Costa Transportation Authority, for
14 just under \$2.5 million, and the City of Sacramento, for
15 just under \$1.9 million. Staff also recommends adoption of
16 staff's determination that these projects are exempt from
17 CEQA.

18 And with that, I would like to thank you for your
19 time and consideration of these items. I am available for
20 any questions you may have. I also believe Peter Engel,
21 from Contra Costa Transportation Authority and Cory Irish,
22 California Energy Commission attorney consulting in these
23 agreement developments are also available for comments or
24 to answer any questions that you may have.

25 And that concludes my presentation. Thank you.

26 CHAIR HOCHSCHILD: Thank you, Sharon. Good work.

1 Any public comment on Item 10?

2 MS. GALLARDO: This is Noemi Gallardo, the Public
3 Advisor. Yes, we do have someone on the Verizon line,
4 Peter from the Energy Authority. Peter, a reminder to
5 please spell your name and indicate your affiliation.
6 Peter, your line is open, you may begin.

7 MR. ENGEL: Great, thank you. My name is Peter
8 Engel, E-n-g-e-l. I'm with the Contra Costa Transportation
9 Authority or CCTA. I want to thank the Commission and
10 Commissioners for providing this grant opportunity to us.

11 Our Phase I project of doing our countywide
12 blueprint really helped us kick off our EV program in
13 Contra Costa County. Our Board, has this year taken an
14 approach to highly prioritize one of our top three projects
15 over the next few years is to advance the adoption of zero
16 emission vehicles, both light and heavy-duty in our county.
17 And this will take a major bite for us out of light-duty
18 infrastructure needs.

19 Also, focused on as Sharon mentioned,
20 disadvantaged communities within our county, both in West
21 County in Richmond and Central County in Concord and in
22 East County in the City of Pittsburgh, to provide some
23 workforce training through nonprofit vocational schools
24 that are highly supported by the cities that they work
25 within.

26 The Phase I Blueprint Project allowed us to

1 develop some great partnerships within our county and we're
2 using those partnerships in this implementation phase.
3 Both with the cities and with MCE, which is our Community
4 Choice Aggregation to help to the installation of EVSE in
5 the county.

6 So, again I want to thank you. I want to thank
7 the CEC staff for both the Phase I and starting off Phase
8 II and look forward to working with you all on this.

9 MS. GALLARDO: Thank you.

10 Chair, we have one additional comment that was
11 submitted via email, which I will read now. This is from
12 Jennifer Venema, that's spelled V as in Victor-e-n as
13 Nancy-e-m as in Mary-a. She's the Interim Climate Action
14 Lead at the City of Sacramento.

15 "Thank you for your leadership and commitment to
16 advancing electrification. We wish to commend the
17 Commission and your staff for advancing the state's clean
18 mobility vision. And thank you for the second award for
19 Sacramento's EV efforts.

20 "First, I want to emphasize that continued state
21 funding and incentives are both critical to equip local
22 agencies as partners for delivering our shared and
23 ambitious zero emission transportation goals. Sacramento's
24 Phase I Blueprint Award was an important step for
25 accelerating our work. We are very excited to launch Phase
26 II and provide lessons and models that your agency can

1 scale across the state.

2 "Lastly, I want to applaud and acknowledge the
3 hard work by your staff to continue improving the
4 Commission's grants and loans processes. I must note that
5 even we, at the City of Sacramento have found these to be
6 challenging and time intensive. I say this, even with our
7 agency's extensive grant experience in transportation
8 funding, in which we average about \$42 million in grants
9 per year.

10 "I encourage you to continue prioritizing your
11 staff efforts to simplify processes and better engage
12 applicants and awardees. This is important not just for
13 cities like Sacramento, but also for the broader range of
14 stakeholders not yet participating in these programs.
15 Procedures should address the needs of those with the
16 biggest barriers to participate. In this way, all of us
17 can benefit."

18 CHAIR HOCHSCHILD: Okay. We'll take these up in
19 two separate votes. Any discussion among Commissioners on
20 Item 10a?

21 (No audible response.)

22 CHAIR HOCHSCHILD: Hearing none, Commissioner
23 Gunda, would you be willing to move Item 10a?

24 BOARD MEMBER GUNDA: Yes, Chair, I would like to
25 move Item 10a.

26 CHAIR HOCHSCHILD: And Commissioner Douglas,

1 would you be willing to second?

2 BOARD MEMBER DOUGLAS: Second.

3 CHAIR HOCHSCHILD: All in favor say aye,
4 Commissioner Gunda?

5 BOARD MEMBER GUNDA: Aye.

6 CHAIR HOCHSCHILD: Commissioner Douglas?

7 BOARD MEMBER DOUGLAS: Aye.

8 CHAIR HOCHSCHILD: Commissioner McAllister?

9 BOARD MEMBER MCALLISTER: Aye.

10 CHAIR HOCHSCHILD: And I vote "aye" as well.

11 That item passes 4-0 with Commissioner Monahan abstaining.

12 Let's welcome Commission Monahan back and take up
13 discussion of Item 10b, Contra Costa Transportation
14 Authority. Commissioner Monahan, do you have any comments
15 you'd like to offer on that item?

16 We are not hearing you even though it doesn't
17 show you're being muted?

18 BOARD MEMBER MONAHAN: Sorry, it was a double
19 mute. What would any of these meetings be without it?

20 So I just wanted to comment that I appreciated
21 the comments from the City of Sacramento around the need to
22 make these processes simpler for folks to apply. So I know
23 the team at the Energy Commission is thinking hard about
24 that, and we want to continue to make progress. So I just
25 appreciate that feedback.

26 I will also say, you know, this is a

1 continuation. So this is to implement blueprints and we've
2 heard loud and clear from our Clean Transportation Program
3 Advisory Committee that it's really important to engage the
4 community in plans. Not just fund willy nilly, but fund
5 according to what the mobility needs are of the city. So I
6 really look forward to seeing how these grants play out in
7 terms of increased mobility, especially for lower-income
8 families.

9 So yes, I support these series of projects and
10 really look forward to making progress in helping
11 communities be more mobile while we gear up solutions.

12 CHAIR HOCHSCHILD: Well, there's agreement to
13 that. Unless there's other Commissioner comments,
14 Commissioner Monahan, are you willing to move Item 10b?

15 BOARD MEMBER MONAHAN: Yes, I move Item 10b.

16 CHAIR HOCHSCHILD: Commissioner McAllister, would
17 you be willing to second?

18 BOARD MEMBER MCALLISTER: I'll second 10b.

19 CHAIR HOCHSCHILD: All in favor say aye,
20 Commissioner Monahan?

21 BOARD MEMBER MONAHAN: Aye.

22 CHAIR HOCHSCHILD: Commissioner McAllister?

23 BOARD MEMBER MCALLISTER: Aye.

24 CHAIR HOCHSCHILD: Commissioner Douglas?

25 BOARD MEMBER DOUGLAS: Aye.

26 CHAIR HOCHSCHILD: Commissioner Gunda?

1 BOARD MEMBER GUNDA: Aye.

2 CHAIR HOCHSCHILD: And I vote "aye" as well.
3 Item 10b passes unanimously. Let's move on to Item 11,
4 Integrated Energy Policy Report.

5 MR. ORTA: Good afternoon, Chair Hochschild and
6 Commissioners. My name is Jason Orta and I'm the Energy
7 Commission's Lead Hydraulic Modeler for Gas Infrastructure.
8 Today, staff is seeking adoption of the Natural Gas Demand
9 and Rate Forecasting Forms and Instructions. Next slide,
10 please.

11 The information requested on these forms and the
12 subsequent analysis will increase the CEC's knowledge of
13 the gas system- particularly trends and drivers of demand
14 and rates. This enhanced knowledge will improve the quality
15 of the CEC staff's gas demand forecasts. Next slide,
16 please.

17 We developed these forms in consultation with the
18 gas utilities, and that the collaboration on this front
19 will continue during and after submittal of these forms.
20 In developing them, we avoided "reinventing the wheel" by
21 modeling them after the CEC's electricity demand forms and
22 instructions while leveraging current utility analysis that
23 goes into the California Gas Report. Next slide, please.

24 Information requested on these forms includes
25 utility demand forecasts out to 2035, forecasting inputs
26 and instructions, demand impacts of building

1 electrification, projected injections of renewable gas and
2 hydrogen, demand response, and other measures. Other
3 things that we request are projected revenue needs and
4 infrastructure information. Next slide, please.

5 The breadth and depth of information requested in
6 these forms will inform the CEC's work in the years to come
7 as staff develops a greater understanding of gas use in
8 California. Staff will continue to support the gas
9 utilities as they complete and submit these filings while
10 using this insight to improve the quality of our work.

11 Before I conclude this presentation, I'd like to
12 thank the California gas utilities PG&E, SoCalGas and
13 SDG&E. We've had two webinars and accepted some written
14 comments during this process, and they have been very
15 helpful.

16 Staff recommends adoption of the Natural Gas
17 Demand and Rate Forecasting Forms and Instructions. This
18 concludes my presentation. However, my colleagues and I
19 will be able to answer any questions regarding this item.

20 CHAIR HOCHSCHILD: Thank you.

21 Any public comment on Item 11?

22 MS. GALLARDO: This is Noemi, the Public Advisor.
23 There are no public comments on Item 11.

24 CHAIR HOCHSCHILD: Okay, let's go Commissioner
25 discussion starting with Commissioner McAllister.

26 BOARD MEMBER MCALLISTER: Yeah. So thanks,

1 Jason, for that presentation. I'm really looking forward
2 to sort of being a little more rigorous on this front as we
3 go forward with this IEPR Update and full forecast right,
4 this is odd year. Odd in the number sense. And so we're
5 doing a full forecast and we really are taking advantage of
6 the opportunity to build capacity and information or
7 informational base going forward. You know, long term
8 we're going to need that during the transition to zero
9 carbon resources. And the interplay between electricity
10 and gas is really becoming something that's supremely
11 important, so we really want to have balance across those
12 two major fuels.

13 So I really appreciate all the collaboration that
14 Jason expressed in, and these resources will help us get
15 the information right form and in a systematic and
16 consistent way. So with that, I think I'll pass the mic to
17 Commissioner Gunda, who I'll be working with on this over
18 the IEPR Forecast period.

19 BOARD MEMBER GUNDA: Actually, thank you
20 Commissioner McAllister. I apologize again for the tree-
21 cutting in the background, as it comes and goes. But
22 Jason, thank you so much for your leadership on this. And
23 the entire team, yourself, Melissa Jones, Jennifer and our
24 support from Aspen in terms of Katie. And the working
25 group work that you're all going into in terms of
26 developing the necessary relationships to put this forward

1 and gather this information to really improve the rigor of
2 our natural gas forecast.

3 And the demand scenarios and different hydraulic
4 modeling that you're doing, is extremely beneficial, as we
5 think through the long-term clean energy future of the
6 state.

7 And Commissioner McAllister noted, this year's
8 IEPR will have a little bit more sharpening of our
9 analytical tools. And figuring out how best to think
10 through gas demand and scenarios. And I really appreciate
11 the entire team's work and particularly Jason, in your
12 approach, which is always respectful and rigorous. And I
13 appreciate your collaboration with the gas utilities, as we
14 all are in this together and need to go to a common point
15 in the future. Thank you.

16 CHAIR HOCHSCHILD: Thank you.

17 Unless there's other Commissioner comments,
18 Commissioner McAllister, would you be willing to move Item
19 11?

20 BOARD MEMBER MCALLISTER: I move Item 11.

21 CHAIR HOCHSCHILD: Commissioner Gunda, would you
22 be willing to second?

23 BOARD MEMBER GUNDA: I second that.

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

26 BOARD MEMBER MCALLISTER: Aye.

1 CHAIR HOCHSCHILD: Commissioner Gunda?

2 BOARD MEMBER GUNDA: Aye.

3 CHAIR HOCHSCHILD: Commissioner Monahan?

4 BOARD MEMBER MONAHAN: Aye.

5 CHAIR HOCHSCHILD: Commissioner Douglas?

6 BOARD MEMBER DOUGLAS: Aye.

7 CHAIR HOCHSCHILD: And I vote "aye" as well.

8 That item passes unanimously. Let's turn now to Item 12.

9 MS. RAITT: Good afternoon, Commissioners. I'm
10 Heather Raitt, Assistant Executive Director for Policy
11 Development and the Program Manager for the 2021 Integrated
12 Energy Policy Report, or the 2021 IEPR for short. Next
13 slide, please.

14 The staff is asking for the Commission's approval
15 of an order instituting informational proceeding to gather
16 and assess information needed to develop the 2021 IEPR.
17 The Commission is required to prepare an IEPR every two
18 years that provides an overview of major energy issues and
19 trends facing California, with an update in the intervening
20 year. Adoption of this order will allow the designated
21 Commissioners to hold hearings and workshops and to collect
22 information that is needed to complete the 2021 IEPR, but
23 is not identified in the Commission's data collection
24 regulations. Next slide, please.

25 Commissioner Andrew McAllister is the lead
26 Commissioner for the 2021 IEPR. He issued the scoping

1 order for the report yesterday, identifying the topics and
2 general schedule for this proceeding. The 2021 IEPR will
3 address four major topics. The first, energy reliability
4 over the next five years. Second, natural gas outlook and
5 assessments. Three, building decarbonization and energy
6 efficiency and fourth, the energy demand.

7 Commissioner McAllister also will lead the
8 analysis of building decarbonization and energy efficiency.
9 Commissioner Siva Gunda will lead the analysis of energy
10 reliability, natural gas, and the demand forecast in the
11 2021 IEPR.

12 Commissioner Patty Monahan will lead the analysis
13 of the benefits of transitioning to a clean transportation
14 system. Next slide, please.

15 So to recap, I'd like to request your approval of
16 this order instituting informational proceeding for the
17 2021 IEPR. Lisa DeCarlo from the Legal Office is available
18 to help answer any questions. Thank you for your
19 consideration, that concludes my presentation.

20 CHAIR HOCHSCHILD: Thanks so much, Heather.

21 Madam Public Advisor, is there any public comment
22 on Item 12?

23 MS. GALLARDO: This Noemi, the Public Advisor,
24 there is no public comment on Item 12.

25 CHAIR HOCHSCHILD: Thank you.

26 All right, let's go to discussion. Commissioner

1 McAllister?

2 BOARD MEMBER MCALLISTER: Yeah, this is a real
3 changing of the guard, I think, on the IEPR front. It was
4 where there's some -- well the previous item, and this
5 item, and the next item are all about IEPR topics. So I'm
6 happy to take the baton from a Commission Monahan, who led
7 it led the IEPR Update last year, so.

8 I think I'll be brief here. The IEPR, we all
9 know it's a really seminal set of activities that
10 culminates in a document. But really it's a process and a
11 collaboration I'd say above all to level set of the various
12 policy questions of the day. So the forecast is a key
13 resource we all know it. It informs the others, the PUS
14 and ISO on the various planning work they do. It underpins
15 the reliability conversation increasingly. And it really
16 does provide direction for our energy policy across the
17 state.

18 And so as we incorporate in the forecast lots of
19 other elements behind the meter elements and transportation
20 and the various transitions that are upon us, and coming
21 and including response to climate change buyers, etcetera,
22 it really becomes an integrated conversation in ways that I
23 think just are pretty unprecedented in fact.

24 And so I want to thank -- so the development of
25 this scope has really I think required us all to put our
26 thinking caps on in terms of what topics are appropriately

1 in it this year, how we bound those topics. And how the
2 various topics interrelate. So I want to thank Heather
3 first of all for your persistence and lots of iterations of
4 this scope as we get it right and get public comment. And
5 your whole team, you have been invaluable in shepherding
6 this process.

7 And then I wanted to also call out the advisors
8 who worked on this. My Advisor, Brian, my Chief of Staff
9 Brian, has really been dogged and incredibly effective, and
10 I think persistent and patient as we work through some of
11 these issues.

12 And during the course of this, we have a new
13 Commissioner and we'll be sharing this with Commissioner
14 Gunda, who will be sharing a lot of these topics and
15 conversations around the forecast and around really all the
16 topics.

17 But I wanted to Le-Quyen as well from the Chair's
18 who's been a conduct over to Commissioner Gunda's office.
19 And working out and running ground on some of these topics
20 as well. And all of my colleagues on the dais, certainly
21 you have parts of this as well.

22 And so I think the high-level message is given
23 this integration that's happening across all sectors of our
24 economy really, certainly all set of our energy economy
25 including transportation, including you know bulk power and
26 wholesale issues, load flexibility, demand response. The

1 underpinnings of reliability in the forecasts will be going
2 out 15 years instead of 10 years this year to kind of align
3 with the 2035 goals that we have in the state.

4 All of those conversations that that really have
5 crosscurrents, I think it's going to be important to have
6 as many of us in each workshop as possible. And then also
7 reach out to our sister agencies to give them every
8 opportunity to sit on the dais with us depending on the
9 topic, obviously. But I think the more we can have, the
10 more we can sort of jump over those BK walls in a public
11 conversation. And appropriately have those conversations
12 together, which in a public forum facilitates that I think
13 it'll help us move forward on IEPR and beyond really on
14 these topics as they spin out over time, as they develop
15 over time.

16 So that's just an invitation to attend all the
17 workshops you possibly can. I know the IEPR has a
18 reputation as being sort of workshop purgatory, so it does
19 have a lot of workshops and topics. But I think in this
20 day and age where everything is so interrelated -- and it
21 is a little bit easier to get on meeting, because of the
22 tools that we have -- hopefully we'll be able to be all
23 present together and having conversations to help develop
24 our common understanding. So that's a kind of a call to
25 arms a little bit on this IEPR.

26 And yeah, so I guess I won't get into the

1 particular topics, but certainly I'll just say briefly on
2 the building decarb piece of this that we envision that
3 topic as being relatively broad and forward thinking around
4 building decarb. As opposed to the specific Title 24
5 Update that we're involved in now.

6 And then there will be a Building Decarbonization
7 Report that will inform the IEPR conversation. That's the
8 AB 3232 Building Decarb Report that'll be out and in the
9 public, while we're having this conversation.

10 And then yeah with that I guess I'll wrap up.
11 I'm really looking forward to the IEPR. I find it to be
12 kind of a nice playing field, a nice place to really make
13 sure we're you know we're up to date on the various issues,
14 even if they're not our primary issue of responsibility
15 within the Commission. And so I always look forward to
16 sharpening up our knowledge, and my knowledge about the
17 various topics by sitting in on the conversations. And
18 really seeing the skills that staff bring to the IEPR,
19 because it's a big lift. Everybody puts on their Sunday
20 best when they participate and contribute to the IEPR.

21 So I really want to show my appreciation
22 beforehand. And I'm sure we'll have a lot of interesting
23 conversations on the topics of the day, as we go forward
24 this year. So thanks a lot everyone and I'll pass the
25 baton back to the Chair.

26 CHAIR HOCHSCHILD: Well, let's go to Commissioner

1 Gunda for any other comments on this.

2 BOARD MEMBER GUNDA: Yeah, thank you Chair and
3 thank you Commissioner McAllister, for kind of sharing that
4 broad kind of perspective.

5 I want to begin with (indiscernible) separate
6 repeated for just an incredible thanks to Heather and her
7 team. I think you know the saying goes differently, but
8 there is no rest for the dedicated and passionate. So
9 Heather, to you and your team, thank you for jumping from
10 one IEPR to the next and getting us all kind of set on
11 this.

12 Also kudos to Brian as your Advisor,
13 Commissioner, as well as the advisors of the Chair, Le-
14 Quyen, Tara, Ken, I know all of all of you have put an
15 effort in shaping this. And also Darcie, now Commissioner
16 Houck, before she left had some incredible ideas on how we
17 can bolster the way we do IEPR to enhance the integrated
18 nature of everything that's going to coming together.

19 So I do want to do high-level tee up the
20 importance of this particular IEPR as Commissioner
21 McAllister noted, I think we added the current inflection
22 point of the transition towards the clean energy future as
23 we think through the three key elements of clean, reliable
24 and I know we say affordable but more equitable. And
25 affordable is an element of the equity, so as we think
26 through those three lenses I think it's incredibly

1 important that the analysis we do is comprehensive,
2 inclusive of different points of view.

3 And there is no better forum than the IEPR in
4 terms of convening a public process that's robust and
5 inclusive and respectful. And I really hope that this year
6 on all topics, we have a broad stakeholder engagement to
7 really pull forward conversations that are essential for
8 the long-term policy at the state.

9 As we all note the reliability is a central theme
10 for CEC's Commission as well as the Demand Forecast and
11 scenarios. So I'm really glad that the staff will be
12 looking at forecasting 2035 this year, as well as
13 developing scenarios on reliability. I'm just appreciative
14 of Mark Kootstra and his team on already setting up the
15 necessary modeling resources needed for doing stochastic
16 production cost modeling through 2026 timeframe, but also
17 long term.

18 Just an incredible amount of work being done
19 there and as well as kind of the conversation of DR and
20 load flexibility that Commission McAllister is leading.
21 And how it weaves into the broader reliability
22 conversation.

23 As Commissioner McAllister noted, this is going
24 to be very integrated with all the Commissioners here.
25 Commissioner Douglas has been working on developing the
26 contingencies, and the future of the thermal fleet and how

1 to improve upon that. So there's a conversation there.
2 And I'm really thankful to Commissioner Monahan's
3 leadership on the load shapes, the future of kind of grid -
4 - how does transportation really fit within the electric
5 grid. So thank you for Commission Monahan's work on that.
6 So yeah, I'm looking forward to it.

7 And I'm also looking forward to the natural gas
8 team, which we are calling action to. Just like make
9 sharpening our pencils on how we do the analysis and really
10 think through developing the necessary analysis for really
11 helping the state think through all the scenarios. And
12 really ask for collaboration from the utilities and
13 encourage collaboration, from all the stakeholders to
14 really advance this conversation in a respectful and robust
15 way. Thank you.

16 CHAIR HOCHSCHILD: Thank you, Commissioner,
17 unless there's other comments from my colleagues, one thing
18 I just wanted to say --

19 BOARD MEMBER DOUGLAS: (Overlapping) You know,
20 sorry Chair Hochschild, I just wanted to say briefly -- I
21 don't mean to repeat, but I just wanted to agree that I
22 think this is a huge opportunity for all of us to take part
23 in these workshops. And to have a public conversation
24 about these really important issues. And I'm looking
25 forward to it and prioritizing it this you know this, this
26 coming year as well.

1 CHAIR HOCHSCHILD: Thank you so much,
2 Commissioner.

3 I did want to say one thing to Heather. You
4 know, you do not seek the limelight at all, but I really
5 want to just appreciate your kind of quiet attention to
6 detail. I mean, the IEPR is just it's a beast every year.
7 There's a lot of "i's" to dot and "t's" to cross and I just
8 really am grateful for your kind of relentless attention to
9 detail and keeping the trains running. And I know I speak
10 for all my colleagues when I say thank you for all your
11 hard work over years on this. So thanks for getting us to
12 this point.

13 With that I would entertain a motion from
14 Commissioner McAllister.

15 BOARD MEMBER MCALLISTER: I move -- let's see, we
16 are on Item 12, I move Item 12.

17 CHAIR HOCHSCHILD: Yeah, Commissioner Gunda,
18 would you be willing to second Item 12?

19 BOARD MEMBER GUNDA: Absolutely Chair, I second
20 the item.

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

23 BOARD MEMBER MCALLISTER: Aye.

24 CHAIR HOCHSCHILD: Commissioner Gunda?

25 BOARD MEMBER GUNDA: Aye.

26 CHAIR HOCHSCHILD: Commissioner Monahan?

1 BOARD MEMBER MONAHAN: Aye.

2 CHAIR HOCHSCHILD: Commissioner Douglas?

3 BOARD MEMBER DOUGLAS: Aye.

4 CHAIR HOCHSCHILD: And I vote "aye" as well.

5 That item passes unanimously. Let's move on to Item 13,
6 the 2020 IEPR Update.

7 MS. RAITT: Great, so good afternoon again. I am
8 now requesting your approval of two volumes of the 2020
9 Integrated Energy Policy Report Update, or the 2020 IEPR
10 Update for short. Again, I'm Heather Raitt, the Assistant
11 Executive Director for Policy Development and the IEPR
12 Program Manager.

13 I'm joined today by two of the lead authors for
14 the 2020 IPER Update, Quentin Gee and Nick Fugate. Next
15 slide, please.

16 The Energy Commission prepares an IEPR every two
17 years with updates in alternate years to provide energy
18 analysis and policy recommendations to the Governor and
19 Legislature. The IEPR is an important part of the state's
20 efforts to ensure an equitable, clean, affordable, and
21 reliable energy system.

22 Under the leadership of Commissioner Patty
23 Monahan, the 2020 IEPR Update is comprised of three
24 volumes.

25 Volume I puts forward recommendations to advance
26 California's clean transportation future, with benefits for

1 all Californians. It is the focus of the 2020 IEPR Update.

2 Volume II is on microgrids, and is not being
3 presented today. It is on a separate schedule for a later
4 business meeting.

5 Volume III is on energy demand and an update to
6 the 10-year electricity forecast. Commissioner McAllister
7 led its development. Next slide, please.

8 The draft of Volume I and Volume III were posted
9 January 6 and March 4, respectively, with opportunities for
10 public comment on each. After carefully considering public
11 comments, a proposed final version were posted of each on
12 February 25, with another opportunity for public comment.

13 An errata to make clarifications and to make
14 edits in response to comments was posted yesterday.
15 Commissioners, you have a copy of the errata and it is
16 available on the Energy Commission's website.

17 The 2020 IEPR Update draws upon the technical
18 expertise and creative thinking of dozens of experts who
19 participated in workshops to gather information. We held
20 nine workshops on transportation and two on the forecast.
21 Under Commissioner Monahan's direction, the workshops
22 emphasized equity and opportunities for public engagement.

23 And now it's my pleasure to introduce Quentin
24 Gee, the lead staff for the transportation volume, titled,
25 "Blue Skies, Clean Transportation." Next slide, please.
26 Go ahead, Quentin.

1 MR. GEE: Hi, my name is Quentin Gee and I'm the
2 Lead Author of Volume I of the 2020 IEPR Update. The main
3 topic for the 2020 IEPR Update is transportation, so I'll
4 cover some of the major issues that we addressed on that.

5 In this chart, we can see the disproportionate
6 impacts of transportation pollution on communities of
7 color. For example, 36 percent of California's black
8 residents live in communities with high diesel particulate
9 matter exposure, compared to only 15 percent of white
10 residents. We chose diesel PM as the major indicator
11 because 90 percent-plus of diesel PM comes from
12 transportation. Next slide.

13 Here we can see that residents in lower income
14 communities as well, face high transportation pollution
15 impacts. Air pollution does spread around a bit, but here
16 you can see that transportation pollution impacts tend to
17 be felt more by those with less of a voice. With these
18 equity factors in mind, one of the key recommendations of
19 the IEPR Update is that California must do more to engage
20 and understand the local mobility and clean air needs of
21 low-income and disadvantaged communities throughout the
22 state. And tailor state programs appropriately to meet
23 those needs. Next slide.

24 There's another interesting trend in
25 transportation. Californians are buying larger, heavier
26 vehicles. One important thing to consider about this is

1 that while of course heavier cars on average have higher
2 greenhouse gas emissions per mile driven, the emissions
3 associated with powering battery electric vehicles just are
4 not as sensitive to the vehicle's weight. On average, a
5 heavier combustion vehicle has an additional 115 grams of
6 CO2 per mile, while a heavier battery electric vehicle only
7 has about 27 grams more CO2 per mile, and gets cleaner as
8 the grid does.

9 So one of the key takeaways here is that to
10 achieve the target of 100 percent zero emission passenger
11 vehicle sales by 2035, the state needs to ensure that there
12 is a full range of zero emission vehicle or ZEV models to
13 meet consumer preferences especially for SUVs, minivans,
14 and pickups.

15 Now, someone with a keen eye might point out that
16 the percentage gain in emissions per mile is greater for
17 battery electric vehicles. This has more to do with the
18 small number of battery electric vehicles in the weight
19 ranges presented here. But looking at all the vehicle data,
20 combustion vehicles increase their emissions as their
21 weight goes up at a rate that is six times greater than
22 battery electric vehicles. To think about it another way,
23 a 6,000-pound Cadillac Escalade SUV is going to have more
24 tailpipe emissions per mile than the driving emissions from
25 a 30,000-pound battery electric bus powered by CA's
26 electricity grid. Next slide.

1 Here we have a chart showing the vehicle miles
2 traveled or VMT, of the Southern California region from
3 January to August. Here you can see during the early
4 months of the COVID-19 crisis, VMT declined dramatically.
5 However, it bounced back within a few months to about 85
6 percent of what it was.

7 There was a valuable lesson to be learned here
8 though. One of the recommendations is that the state should
9 invest in additional research to thoroughly understand the
10 potential for enduring changes in travel behavior from the
11 COVID-19 pandemic. We also recommend that state agencies,
12 local jurisdictions, and, where possible private businesses
13 evaluate and consider instituting telecommuting options for
14 their workforces to help reduce VMT. Next slide.

15 The three revolutions in transportation:
16 electrification, automation, and shared mobility services,
17 these are poised to dramatically change the way we think
18 about mobility. But we want to make sure this is done in a
19 way that aligns with our climate and equity goals.

20 And here you can see how there's potential for
21 dirty skies if we don't have a broad and bold
22 transportation vision. One potential danger would be empty
23 robocars with combustion engines clogging up the streets,
24 which is obviously not a pretty picture. So we want to
25 make sure policies stay ahead by keeping track of the
26 trends in these three different spaces. Next slide.

1 Plug in vehicles, or PEVs, are the most common
2 Zero Emission Vehicle out there. California's climate
3 leadership here shines as well. You can see that we've had
4 a large increase in market penetration from 2017 to 2019.
5 However, you can also see here that China and Europe are
6 attempting to play catch up. California's light-duty ZEV
7 market penetration needs to go from 7.7 percent in 2019 to
8 100 percent in 2035, so we've got a lot of work ahead of
9 us. Next slide.

10 The increasing market penetration we've seen with
11 PEVs is occurring mostly due to the large declines in
12 battery costs. Economies of scale and new battery
13 technologies are leading to fierce competition and
14 declining prices. Around 2023 or shortly after, analysts
15 expect the purchase price of PEVs to be competitive with
16 combustion vehicles. Combined with the fact that a PEV can
17 save drivers more than a thousand dollars per year in lower
18 fuel and maintenance costs compared to a combustion
19 vehicle, PEVs' lower costs will put billions more back into
20 the state's economy rather than spending it on foreign
21 oil." Next slide.

22 Although there's a lot of good news on PEV
23 prices, consumers are reluctant to shift to a new
24 technology unless it makes their lives better on many
25 fronts. So charging needs to be widespread and simple, if
26 not easier than fueling at gas stations. And that means a

1 lot of chargers.

2 On the first bar from the top we have 67,000
3 chargers currently installed, and below that another
4 121,000 additional planned through 2025. That leaves us
5 with a gap of about 62,000 chargers for our 2025 goal shown
6 on the middle bar. And five years out from there in 2030,
7 there's uncertainty about how many more chargers we need.
8 But in a vehicle scenario that smoothly gets us to 100
9 percent new ZEV sales by 2035, we would need to have about
10 8 million ZEVs and growing by the year 2030. So that will
11 require a lot of chargers, 1.5 million.

12 We can't do this only with public funding, so one
13 of the key IEPR recommendations here calls for the
14 evaluation of new regulatory and funding mechanisms to
15 further encourage private sector investments in the
16 charging infrastructure, the infrastructure we need to meet
17 demand. And we need to do this while ensuring low costs
18 for all Californians. Next slide.

19 On top of getting the chargers we need, we also
20 need to make sure that they work well with the grid. Here
21 we can see that time-of-use as currently structured. This
22 might not maximize charging vehicles with solar,
23 potentially causing a large demand spike at 12:00 a.m. if
24 people use timers.

25 But if we can get charging aligned with
26 renewables, there's great potential for reducing

1 electricity costs for all Californians. So we recommend
2 that the CEC collect data and do the analysis needed to
3 support charging infrastructure development that minimizes
4 costs and maximizes benefits to the grid. Next slide.

5 During the large-scale public safety power
6 shutoff events of 2019, Google search trends spiked for
7 search terms such as “backup generator” or “backup
8 battery.” People were trying to find ways to make sure
9 they could keep the power on. And with ZEVs, there are
10 large amounts of energy available in a vehicle’s battery or
11 hydrogen tanks in a fuel cell vehicle. And with the right
12 setup that energy can turn into electric power for backup.

13 Here we can see a CEC-funded school buses,
14 electric school buses, which are capable of integrating
15 with the grid and supplying auxiliary power to buildings.
16 We can also see power capacity being put on Ford’s well-
17 known F-150, which was set to release an electric vehicle,
18 an electric version of the F-150 next year. ZEVs are
19 essentially distributed energy resources, and the IEPR
20 Update recommends working with the appropriate agencies to
21 support ZEVs in contributing to energy resiliency. Next
22 slide.

23 Finally, there’s some good signals on the
24 hydrogen front. In particular, China, Japan, and Korea
25 have set aggressive targets for more fuel cell vehicles in
26 the next decade, with China aiming for 1 million fuel cell

1 EVs by 2030. Seeing additional leadership outside of
2 California suggests that economies of scale may allow fuel
3 cell costs to decline, and potentially electrolyzers that
4 can produce hydrogen fuel by using renewable energy. Next
5 slide.

6 A recent survey shows that three-quarters of
7 American drivers believe that electric vehicles are the
8 future of transportation. California has committed itself
9 to this zero-emissions vision, along with the benefits of
10 cleaner air, lower greenhouse gas emissions, and lower
11 transportation costs for the state's residents. And the
12 California Energy Commission will play a vital role in
13 setting the stage to make that happen.

14 So with that, I'll hand over to Nick Fugate to
15 discuss the Energy Demand Forecast.

16 MR. FUGATE: Thank you, Quinten. Can we have the
17 next slide, please? So Volume III focuses on the Energy
18 Commission's Electricity Demand Forecast Update. The
19 forecast is a critical planning tool, which lays the
20 foundation for electricity system planning efforts,
21 including transmission and distribution planning,
22 integrated resource planning, and resource adequacy. The
23 CEC's forecast ensures that these studies begin with
24 reasonable and commonly understood assumptions. Next
25 slide, please.

26 In January of 2020, the Energy Commission adopted

1 the IEPR 2019 Demand Forecast. And two months later, in
2 response to the COVID-19 pandemic, the California economy
3 took a sudden and unexpected downturn. These conditions
4 fell outside any of the scenarios considered in the adopted
5 forecast. The situation highlights the importance of
6 updating the Demand Forecast annually—so that when economic
7 conditions take an unexpected turn, planners are not
8 working with unrealistic projections.

9 The update described in Volume III is actually
10 our most ambitious to date. In addition to refreshed
11 economic outlooks, staff updated rate projections as well
12 as forecasts of PV, storage, and electric vehicle adoption.
13 It's worth noting that the adopted forecast is not a single
14 number, but a collection of projections with different
15 assumptions around economic outlook, efficiency uptake, and
16 weather conditions. Studies conducted by the CPUC and
17 California ISO each used a particular combination of
18 projections that suits the needs of that study.

19 Volume III contains an updated agreement between
20 staff at the CEC and CPUC as well as the California ISO's
21 leadership. This agreement, which we call the single
22 forecast set specifies a number of important forecast use
23 cases. And memorializes our common understanding around
24 which components of the forecast are used in each. Next
25 slide, please.

26 Our updated mid-baseline forecast of electricity

1 consumption, which is the total amount of electricity used
2 by customers declines in 2020 -- a response to the economic
3 downturn -- followed by a period of strong economic
4 recovery through 2024. And then settling into a long-term
5 annual growth of 1.1 percent annually.

6 Electric vehicle charging contributes
7 significantly to that growth, with on-road vehicle charging
8 representing a 4.5 percent of overall electricity
9 consumption in 2030

10 Our mid baseline sales forecast, which is the
11 amount of energy customers are expected to purchase from a
12 utility or other service provider, grows at a slower rate,
13 only half a percent. This is due to the significant
14 penetration of behind-the-meter resources, particularly PV
15 over the forecast period. By 2030, PV self-generation is
16 projected to meet 13 percent of total consumption.

17 And when paired with an appropriate additional
18 achievable energy efficiency scenario, which was adopted as
19 part of the 2019 IEPR, we have a managed sales forecast
20 commonly used for planning that is relatively flat over the
21 forecast horizon. Next slide, please.

22 Volume III also contains three exploratory
23 scenarios around electric vehicle charging and travel
24 patterns. The first studied the potential impacts of
25 charging the estimated number of medium and heavy-duty
26 zero-emission vehicles required to meet the South Coast Air

1 Basin's 2031 Ozone Standard. Staff found that this could
2 amount to an additional 1,700 GWh of consumption.

3 The second scenario examined the potential for
4 shifting EV charging patterns as a GHG reduction strategy.
5 This analysis found that moving flexible vehicle charging
6 to mid-day when grid emissions are lowest could save 0.4
7 million metric tons of CO2, but would also increase system
8 peak load by nearly 700 MW. Also these results highlight
9 the importance of considering both grid conditions and GHG
10 emission intensity factors when using load shifting as a
11 carbon reduction strategy.

12 And the third scenario looked at the implications
13 of increased telework opportunities that may persist beyond
14 California's COVID-19 experience. Staff found that GHG
15 emissions tied to commuting may be reduced by just over 4
16 percent per day of remote work. These scenarios were
17 developed to provide additional information to stakeholders
18 and policymakers beyond the specific planning targets
19 described by the Demand Forecast.

20 And with that, I will turn it back to Heather.

21 MS. RAITT: Thank you, Nick. Next slide, please.

22 Before I close, I would like to just take a
23 moment to express my gratitude to some of the many talented
24 and dedicated staff who contributed to the report. On the
25 transportation volume, Quentin did an amazing job leading
26 the effort. And many others in FTD contributed including

1 Jane Berner, Michael Comiter, Jim McKinney, Tim Olson, Noel
2 Crisostomo, Tami Haas, Charles Smith and Hannon Rasool.

3 And on the forecast volume, Nick and his team
4 always do a great job. And thanks also to Heidi Javanbakht
5 and her team for their work on the transportation demand
6 scenarios, and to Matt Coldwell who manages that office.

7 Last summer we transitioned to remote workshops.
8 Thank you to Noemi and the IT staff for their support in
9 doing so. And to Harrison Reynolds who was really
10 instrumental in our transition to remote workshops.
11 Harrison was our student assistant at the time, and
12 although we miss him I'm happy to report that he's now
13 staff with the R&D Division.

14 And a very big thank you to the core IEPR team:
15 Stephanie Bailey, Denise Costa, and Raquel Kravitz, who so
16 skillfully keep everything going from behind the scenes.
17 And who I rely on every day.

18 Finally, thank you, Commissioner Monahan and
19 Commissioner McAllister, for your leadership and support,
20 and also to your staff who helped us throughout.

21 So that concludes our presentation. Lisa DeCarlo
22 who has been a terrific support from the Legal Office is on
23 the line to help answer any questions. And again, staff
24 requests that you adopt Volumes I and III of the 2020 IEPR
25 Update, incorporating the changes detailed in the errata.
26 Thank you.

1 CHAIR HOCHSCHILD: Thank you so much, Heather and
2 team.

3 Let's go to public comment on Item 13.

4 MS. GALLARDO: This is Noemi, the Public Advisor.
5 We do have someone on the Verizon line to make comment.

6 Kristian, we will open up your lines shortly. A
7 reminder to please spell your name and indicate your
8 affiliation. You have three minutes to speak your line is
9 open, please begin.

10 MR. CORBY: Good afternoon, Commissioners and
11 staff, my name is Kristian Corby and that's spelled K-r-i-
12 s-t-i-a-n and Corby is C-o-r-b-y. And I am the Deputy
13 Executive Director at the California Electric
14 Transportation Coalition and just have a few comments
15 today.

16 We'd like to really say we really support the
17 reports' focus on equity and the need to address soft costs
18 and public charging. And we appreciate the addition of the
19 RMI study into the section addressing soft costs and
20 charging.

21 The reports' discussion on equity is very
22 enlightening and important for how we can truly bring about
23 the benefits of zero emission transportation to all
24 Californians and especially the most vulnerable. The
25 impacts of COVID-19 have been devastating and exposes how
26 low income in minority communities are more vulnerable,

1 because of their exposure to air pollution from
2 transportation emissions. So again great focus on equity
3 and the need to address costs.

4 We support the recommendations made at the end of
5 Chapter 6, especially the recommendation to continue to
6 collaborate with the CPUC and California ISO. All of these
7 agencies are doing very important work on DGI. And to the
8 extent your efforts can be coordinated, there will be some
9 very great opportunities to take advantage of lessons
10 learned.

11 We have a couple of concerns, just two. We had
12 hoped that the VGI section on pages 107 and 112 would be
13 removed, so that VGI could be addressed through a deeper
14 dive in the VGI Roadmap Update and complimentary public
15 process. And while this didn't happen, we still recommend
16 completing the VGI Roadmap Update. And there's great
17 opportunity for planning, because of the dramatic progress
18 on VGI. And the work continues to ramp up on a variety of
19 topics. So we also recommend continuing to coordinate with
20 the CPUC and IOUs on their work on the recently adopted VGI
21 decisions D-2012-07 and or sorry 027 and 029.

22 Finally, CalETC appreciates the amendments made
23 to the section describing the avoided cost of charging
24 concept, previously known as the Transportation
25 Electrification Regulatory Policies Act or TERPA. While
26 these amendments to the section help explain the concept,

1 we still do not understand how this concept will
2 effectively create access to affordable charging and
3 infrastructure. And believe that the complexity of the
4 concept could create barriers to access and increased
5 costs.

6 So thank you again, very much for your time today
7 and consideration of my comments.

8 CHAIR HOCHSCHILD: Thank you.

9 Any further public comment, Madam Public Advisor?

10 MS. GALLARDO: That was the last comment for Item
11 13

12 CHAIR HOCHSCHILD: Okay. Let's move on to
13 Commissioner discussion, Commissioner Monahan?

14 BOARD MEMBER MONAHAN: Well, I want to thank
15 Heather. You thanked her, Chair, and I think everybody was
16 like during the nod when you were talking. And so to give
17 first-hand experience, Heather with all you do and how you
18 do it so well, and you're so calm and you're so thorough
19 with all the details, is just like really impressive. And
20 you're very fun to work with, so I just want to thank you
21 and your excellent team: Denise, Raquel, Stephanie. Like
22 just really super professional and hit the ball out of the
23 ballpark from my perspective.

24 So I'm going to focus on Volume I and
25 Commissioner McAllister, I'm sure is going to have some
26 great comments on Volume III. And I will also just want to

1 acknowledge Quentin's leadership on this. Quentin stepped
2 into the CEC, this is his first big project. He managed
3 the whole thing so ably, so thoughtfully. And all the team
4 members: Jim, Tim, James, Michael, Charles, Noel,
5 (phonetic) so many people that were involved in this IEPR.

6 But I have said to them, at the very beginning I
7 said I don't want a panel of all men. I don't want a panel
8 of all white people. I want us to look like California and
9 they did. And I mean and it's like every single workshop I
10 was like, "Okay, they did it." So I just want to commend
11 them and just say that that's something we should look
12 forward, I think, for all of our panels, we should be
13 thinking about that. Diversity matters and we are
14 attentive to equity. And we want to always get better and
15 that's just one step towards that the end goal.

16 And I thought the transportation -- I hope
17 everybody read it, because I thought it was beautifully
18 written. And I also thought it dealt with a lot of really
19 important topics. And as we are speaking to support the
20 Governor's proposed budget, reauthorize AB 8, (phonetic) I
21 mean this is one tool in our toolbox for communicating how
22 zero emission mobility is taking off globally and
23 California can be part of that transition.

24 So Mindy and her team have put together a really
25 great handout that we can give. It's the Executive Summary
26 with beautiful graphics. And it really I think tell a

1 short and sweet story about the opportunity for California
2 to be a leader globally on zero emission transportation.

3 And that's all I have to say. I was really happy
4 with the whole document. I can read again and again, let
5 me tell you. And I will.

6 CHAIR HOCHSCHILD: All right. Thank you,
7 Commissioner.

8 Unless there's other Commissioner comments I'm
9 looking at my -- oh yes, Commissioner Douglas?

10 BOARD MEMBER DOUGLAS: You know, I'd just like to
11 briefly say I want to recognize Commissioner Monahan for
12 her leadership on these IEPR volumes. I know she and her
13 advisors and Heather Raitt and her team, and CEC staff put
14 a lot of effort into it and it really shows.

15 And I liked how the transportation volume
16 highlights the synergies and opportunities between
17 transportation electrification and Lithium Valley and the
18 Salton Sea region, which is something that is huge
19 opportunity, I think, for the state.

20 And I really have enjoyed watching how
21 Commissioner Monahan has worked hard to think about and
22 reimagine how we can use Zoom meetings to maximize
23 engagement. It's not just about you know, finding another
24 way to do something, but really finding a way to make these
25 workshops better. And so we got great participation. I
26 think people really liked the format and will probably

1 continue using that format even when we don't have to, at
2 least for some of the IEPR workshops.

3 So anyway great job, and I look forward to
4 supporting this.

5 CHAIR HOCHSCHILD: Thank you.

6 Commissioner McAllister, were you going to make a
7 remark?

8 BOARD MEMBER MCALLISTER: Yeah, I think I just
9 wanted to briefly comment on mostly on the forecast, but
10 first I wanted to just commend Commissioner, Monahan, on a
11 job incredibly well done. And as well as the IEPR, Heather
12 and the whole crew, Stephanie and Raquel.

13 I guess I wanted to also just call out your
14 thoughtfulness on the equity front and just really putting
15 that I mean over and over in this. This is one example of
16 that, but I think you do that consistently trying to figure
17 out ways to do that substantively. You know, not just as
18 window dressing, but actually put it at the core of what we
19 do. And I think that's just huge. I hope to emulate some
20 of that in the IEPR this year, and find ways to really be
21 inclusive use our Zoom platform to gain public comment that
22 maybe we wouldn't otherwise get in a more structured
23 format.

24 So on the forecast, I think well, just Nick and
25 Cary and the whole team, they do a great job. It's very
26 detailed work. And the assumptions really matter. They

1 sweat the details. They sweat the assumptions. They vet
2 everything. The workshops really reflect their incredible
3 due diligence.

4 And this year, the scenarios in particular I
5 think were valuable, because we had so much uncertainty,
6 right. And we think of what happened during the year of
7 this forecast.

8 And the, you know, we had COVID. We had incredible weather
9 events. We had incredible behavior change that is
10 reflected in loads in the electric sector and gas
11 consumption. And so really getting information together
12 and trying to pick that apart and running scenarios on it,
13 is really no mean feat. I mean it's difficult and they did
14 a really great job.

15 And I really appreciated the load flexibility,
16 the load flex scenario. That's again really important
17 going forward to understand what we can do with load. And
18 how we need to be intentional if we're going to use it as a
19 decarbonization strategy. And also apply it to the hourly
20 forecast as a way to manipulate or change peak loads. So
21 I'm really happy with the direction that that skill set is
22 going.

23 And I think it's an opportunity to include --
24 which, you know, Commissioner Monahan you and I always talk
25 about okay transportation buildings, you know how can we
26 sort of see them, both as a resource on the grid. And I

1 think this is a manifestation of that process. We're
2 starting to be able to do that, so I really want to in this
3 year's IEPR, in the 2021 IEPR, try to deepen that. And
4 work together on it as we consider sort of more flexibility
5 resources coming on or being accessible.

6 So, I guess I will stop there. I want to
7 certainly pass the mic to Commissioner Gunda. I mean he
8 has been invaluable in this as the Deputy over the
9 Forecast. And I think really provided great direction to
10 staff and lots of creativity in how the forecast proceeds
11 and also coordination across the agencies. So I certainly
12 want to want to pass the baton to you, Commissioner Gunda.

13 BOARD MEMBER GUNDA: Thank you, Commissioner
14 McAllister. I mean, I knew I couldn't like really follow
15 you on this, because I mean you're very thoughtful in how
16 you talked about the Demand Forecast. But there is a pause
17 in the background, so I hope to fit in a couple of words.

18 I do want to call out a thanks to Nick Fugate,
19 Matt, Cary, Alan Marshall. What an amazing effort this
20 year when we had some big shoes to fill in after the
21 retirement of Chris Kavalec, the Chief Forecaster. Nick
22 really had to jump in with Cary and Lynn and just create
23 the necessary intellectual brainpower and thoughtfulness.
24 And I think they've done it beautifully. Especially over
25 the last year in the development of the Demand Forecast.

26 As you noted, Commissioner McAllister, there were

1 certain issues. But there were also issues that they had
2 to bake in as we went through with the root cause analysis
3 and calling for a more extreme forecast and how we do it,
4 you know, think about the uncertainties in climate as we
5 move forward.

6 And I think one of the things that the
7 leadership, the demand forecasting leadership were able to
8 do, is really listen and take the ideas in, vet them and be
9 able to bring back solutions. So I just want to thank the
10 team. I think it's extremely important that the
11 relationships that we are continuing to build at staff
12 level across the agencies, continue to mature, because that
13 really is the foundation for the statewide planning.

14 Commissioner Monahan, I did read through Volume
15 I, and I think it was great. I specifically enjoyed the
16 recommendation on the integration of transportation in the
17 grid. And I would like to thank Heidi Javanbakht for her
18 cross divisional work with Hannon and the team to really
19 connecting through transportation scenarios.

20 And I just can't be more thankful that I now get
21 to sit with you all. But working for you all prior, it's
22 just a such a wonderful feeling to have Commissioners that
23 are just about collective thinking and bringing things
24 together and making sure things happen. So thank you all
25 for your guidance as we went through.

26 And I would be remiss if I didn't thank Heather

1 and her team. Heather, again I don't know, I think we'll
2 just call you a rock star champion or whatever you like.
3 Thank you so much for being the IEPR champion you are.
4 Thank you.

5 CHAIR HOCHSCHILD: Thank you, Commissioner.

6 Unless there's any other additional comments I
7 would entertain a motion from Commissioner McAllister on
8 Item 13.

9 BOARD MEMBER MCALLISTER: Patty, do you want to
10 move this one and I'll second?

11 BOARD MEMBER MONAHAN: Sure, I'll make a motion
12 to approve Item 13.

13 BOARD MEMBER MCALLISTER: I'll second Item 13.

14 CHAIR HOCHSCHILD: All in favor say aye,
15 Commissioner Monahan?

16 BOARD MEMBER MONAHAN: Aye.

17 CHAIR HOCHSCHILD: Commissioner McAllister?

18 BOARD MEMBER MCALLISTER: Aye.

19 CHAIR HOCHSCHILD: Commissioner Gunda?

20 BOARD MEMBER GUNDA: Aye.

21 CHAIR HOCHSCHILD: Commissioner Douglas?

22 BOARD MEMBER DOUGLAS: Aye.

23 CHAIR HOCHSCHILD: And I vote "aye" as well.

24 That item passes unanimously. And I'm happy to report we
25 are done. We knocked out all the other items earlier in
26 the meeting

1 So I think -- Noemi, unless I'm missing anything?

2 MS. GALLARDO: I believe that's correct, Chair.

3 We've gone through everything.

4 CHAIR HOCHSCHILD: We're adjourned, thank you,

5 everybody. Have a good day.

6 (The Business Meeting adjourned at 2:33 p.m.)

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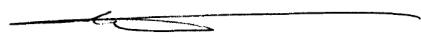
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