

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

1 not use the speakerphone feature when talking. Talk
2 closely into the phone. And to avoid an echo or feedback
3 loop leave Zoom or mute Zoom while making your public
4 comment.

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

7 (End of Introductory Video)

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

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

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

21 (Whereupon the Pledge of Allegiance is recited.)

22 CHAIR HOCHSCHILD: Thank you, Commissioner.

23 Again, with COVID obviously vaccinations are
24 rolling out at a good healthy clip now, about 2 million a
25 day. But we are not through this thing yet so please

1 everyone continue to exercise diligence, wear a mask, wash
2 your hands, keep your distance and visit covid19.ca.gov for
3 more information.

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

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

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

22 We're using a combination of Zoom and Verizon for
23 remote access. If Zoom shuts down today we'll continue our
24 meeting on our Verizon phone line. Call Verizon at 888-
25 823-5065. The pass code is "Business Meeting."

1 The Commission values public participation and
2 stakeholder engagement pursuant to California Code of
3 Regulations Title 20, Section 1104(e). Any person may make
4 oral comments on any agenda item. And to ensure the
5 orderly conduct of business such comments will be limited
6 to three minutes or less per person as to each item listed
7 on the agenda that is voted on today.

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

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

18 And I'm also happy to share, which we're going to
19 do with every meeting going forward, the total amount of
20 money that if everything's voted out today will be that's
21 \$83 million from today's meeting. All of which is going to
22 help with California's economic recovery and advance our
23 innovation sector.

24 So moving on to Item 1 the Consent Calendar,
25 Madam Public Advisor, do we have any public comments on

1 Item 1?

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

4 CHAIR HOCHSCHILD: Okay, unless there's any
5 Commissioner discussion can we have a motion? Commissioner
6 Gunda, would you be willing to move Item 1?

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

9 CHAIR HOCHSCHILD: Good. Commissioner
10 McAllister, would you be willing to second?

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

12 CHAIR HOCHSCHILD: Okay. All in favor say aye.
13 Commissioner Gunda?

14 BOARD MEMBER GUNDA: Aye.

15 CHAIR HOCHSCHILD: Commissioner McAllister?

16 BOARD MEMBER MCALLISTER: Aye.

17 CHAIR HOCHSCHILD: Commissioner Douglas?

18 BOARD MEMBER DOUGLAS: Aye.

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

20 Commissioner Monahan is absent.

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

23 MS. WEEKS: Good morning Chair and Commissioners.

24 I'm Tara Weeks, Senior Advisor to Chair Hochschild and
25 Project Manager for the 2021 SB 100 Joint Agency Report.

1 And I'm very excited to announce that the final report,
2 along with a 12-page summary document were released earlier
3 this week. And today we'll provide a quick overview of the
4 report. And I encourage everyone to review the full
5 documents on the Energy Commission's website. Next slide,
6 please.

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

11 It also expands the RPS to 60 percent by 2030 and
12 requires the Energy Commission, Public Utilities Commission
13 and Air Resources Board to use existing programs to achieve
14 a policy and issue a joint SB 100 report every four years.
15 Next slide, please.

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

23 In addition to serving as a key pillar in the
24 state's efforts to mitigate climate change SB 100 can
25 benefit residents across the state by improving public

1 health, primarily through reductions in criteria air
2 pollution as clean resources to replace fossil fuel in
3 generating electricity, advancing energy equity by moving
4 towards the 100 percent target in ways that help ensure
5 equitable outcomes such as alleviating the public health
6 burden in disadvantaged communities where a
7 disproportionate number of the state's fossil gas plants
8 are located. And it can support a clean energy economy by
9 helping to restore thousands of clean energy jobs lost
10 during the pandemic and create many more high-quality jobs
11 and career pathways.

12 And in a moment we'll talk about the magnitude of
13 resources that we're projecting that we'll need. And while
14 it will certainly be a challenge to meet this goal it also
15 presents a huge economic and workforce opportunity. Next
16 slide, please.

17 So now on to the report itself. As mentioned,
18 this report is the first step to evaluate the challenges
19 and opportunities in achieving 100 percent clean
20 electricity by 2045. It includes an initial assessment of
21 the additional energy resources and the resource building
22 rates needed to achieve the goal, along with an initial
23 assessment of associated costs. So I want to point out
24 that the estimates in this report are intended to serve as
25 a foundation for future work and will change over time as

1 additional factors such as system reliability, land use,
2 energy equity and workforce needs are more closely
3 examined. Next slide, please.

4 This report was informed by a diverse array of
5 interests through over a year of public workshops,
6 including scoping workshops held across the state.

7 The agencies also consulted with the California
8 Balancing Authorities as required by the statute, and the
9 Disadvantaged Communities Advisory Group, which advises the
10 CEC and CPUC on energy equity issues. And so we really
11 appreciate the engagement from both of these groups, as
12 well as the public and other stakeholders throughout the
13 process. Next slide, please.

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

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

18 So getting into the technical work we modeled
19 renewable and zero-carbon resources to meet our clean
20 electricity needs. In order to qualify these resources
21 must be either RPS eligible or have zero on-site greenhouse
22 gas emissions.

23 For our core scenarios we only included
24 commercialized technologies with publicly available and
25 vetted cost and performance data. Specifically, these

1 resources included new and existing solar photovoltaic,
2 existing solar thermal, new and existing onshore wind and
3 new offshore wind, new and existing geothermal, new and
4 existing bioenergy, new green hydrogen fuel cells, existing
5 small and large hydro facilities, and existing nuclear
6 power plants. And then this list will continue to be
7 updated in the future as emerging technologies mature and
8 come to market. Next slide, please.

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

13 On this slide we see the projected new clean
14 energy resources in comparison to the clean energy
15 resources already on the California grid today. So looking
16 at 2045 the SB 100 modeling projected that we'll need
17 nearly 70 gigawatts of new utility scale solar, nearly 30
18 gigawatts of new customer solar, nearly 50 gigawatts of
19 battery storage, 4 gigawatts of long-duration storage, 12.6
20 gigawatts of onshore wind, 10 gigawatts of offshore wind,
21 and about 100 megawatts of geothermal.

22 All of this in order to meet our 100 percent
23 renewable and zero-carbon electricity target in 2045. And
24 then these resources are projected to increase annual costs
25 by about 6 percent over the 60 percent RPS baseline

1 scenario in 2045. Next slide, please.

2 So in order to achieve this massive build-out of
3 renewable energy and storage resources, this will require
4 sustained record-setting build rates through 2045,
5 including a tripling of solar and wind build rates from our
6 ten-year historic average, and an eight-fold increase in
7 battery build rates from 2020. Next slide, please.

8 In addition to modeling meeting our core SB 100
9 scenario, the joint agencies explored sensitivities, as
10 well as several scenarios outside the scope of SB 100. One
11 of these sensitivities was a high-demand flexibility
12 scenario that included six gigawatts of load flexibility.
13 This additional flexibility resulted in less batteries,
14 increased gas plant retirements, and lower overall costs
15 compared to the SB 100 core scenario.

16 The joint agencies also modeled several study
17 scenarios outside the scope of SB 100 that are intended to
18 inform broader state planning efforts on energy, climate
19 and public health. So these included a no-combustion
20 scenario where all combustion resources, including gas-
21 fired power plants, will retire by 2045. The initial
22 results indicated that this scenario would increase annual
23 costs by about 12 percent in 2045 compared to that SB 100
24 core scenario.

25 Next, zero-carbon firm resource scenarios were

1 included and have the option of a generic zero-carbon firm
2 resource that represented the commercialization of emerging
3 technologies such as green hydrogen combustion or natural
4 gas with 100 percent carbon capture, or a reduction in the
5 costs of existing firm resources such as geothermal. When
6 these resources were included it decreased annual
7 electricity costs by about \$2 billion, or about 3 percent
8 in 2045.

9 And then finally the joint agencies also modeled
10 several scenarios that accelerated the SB 100 target to
11 2040, 2035 and 2030. These results indicated that while
12 these targets may be achievable they may also increase
13 overall costs.

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

16 So here are the key takeaways from the SB 100
17 modeling. First, this initial analysis suggests that SB
18 100 is technically achievable through multiple pathways.

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

22 Third, modeling showed that diversity in energy
23 resources and technologies lowers overall costs, but also
24 showed that retaining some natural gas power capacity may
25 minimize costs while ensuring uninterrupted power supply

1 during the transition to 100 percent clean energy.
2 However, increased energy storage and advancements in zero-
3 carbon technologies may reduce those natural gas capacity
4 needs.

5 And finally, further analysis is needed as this
6 is just the initial assessment of the 2045 SB 100 policy.
7 Next slide, please.

8 So specifically the recommended future analysis
9 includes first verifying that scenario results satisfy the
10 grid's electric reliability requirements across a range of
11 conditions.

12 Second, continuing to evaluate the potential
13 effects of cost-saving emerging resources such as offshore
14 wind, long-duration storage, green hydrogen technologies,
15 and demand flexibility.

16 Third, assessing environmental, social and
17 economic costs and benefits of the additional clean
18 electricity generation and storage needed to implement SB
19 100.

20 And finally holding annual workshops to support
21 alignment among the joint agencies and continuity between
22 SB 100 reports.

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

24 MS. WEEKS: Thanks, Liz.

25 So this report was a big lift and required

1 ongoing coordination between all three agencies, so I just
2 want to take a couple minutes to recognize the team behind
3 it. And you can go to the next slide, please. Thanks.

4 So first, of course, I'd like to thank our joint
5 agency principals Chair Hochschild, Chair Randolph, Chair
6 Nichols and Commissioner McAllister for your leadership
7 moving us to a 100 percent clean energy future. And prior
8 to his appointment, Commissioner Gunda was also down in the
9 trenches with us on this report. So thank you,
10 Commissioner, for really getting this effort started,
11 working out the initial scope and roles for each of the
12 agencies and for all your tireless cat herding to keep us
13 all aligned.

14 And I won't list everyone due to time, but I
15 thank you to our counterparts at the CPUC and CARB,
16 including Simon Baker and Rajinder Sahota, who initiated
17 the scoping process, coordinated between related efforts,
18 including IRP and the Scoping Plan and provided support
19 throughout the process. It's been really great getting to
20 know our colleagues across the agencies a little bit
21 better. And we look forward to replicating this type of
22 coordination on other efforts.

23 And, of course, a big thank you to our terrific
24 core SB 100 team at the Energy Commission. And again I
25 won't be able to list everyone who had a hand in this

1 report, but I want to recognize a couple people in
2 particular.

3 First, Judy Grau and Jim Bartridge who were the
4 first ones to really put pen to paper, fleshing out the
5 outline, providing the early foundation for the report, and
6 then supporting report development throughout. And
7 congratulations to Judy, who also just retired.

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

12 And a thank you to Noemi Gallardo and Dorothy
13 Murimi for all their help capturing equity considerations
14 in their report and coordinating with DACAG and other
15 stakeholders.

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

21 And I just want to close with a particular
22 recognition of Aleecia Gutierrez and Liz Gill. Aleecia
23 really just has an amazing ability to fill gaps and do
24 whatever is needed. She wrote large sections of the report
25 over much of our engagement with stakeholders, and just

1 always kept a really positive kind of can-do attitude. So
2 it's really just a pleasure working with her.

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

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

13 CHAIR HOCHSCHILD: Well, thank you so much for
14 your incredible dedication and leadership, and Liz as well.
15 I know I speak for all my colleagues, not just at the
16 Energy Commission but at the PUC and CARB as well, in
17 thanking the whole team.

18 You know, the analogy of a report like this it's
19 somewhere between a massive construction project and
20 childbirth or something like that, just the amount of work
21 that goes into it and all of the team effort. And I want
22 to say it's hard enough to do something like this just
23 within one agency, but coordinating across multiple
24 agencies and doing all the public outreach as well. Eight
25 workshops all over the state, taking input from all kinds

1 of stakeholders really contributed to this. I'm really,
2 really proud of you guys and the results in this report.

3 And I know at the risk of repeating myself, I
4 think we're in a moment where what was previously
5 considered mythology, the vision of getting to 100 percent
6 clean energy just a couple years ago, I was in a lot of
7 those meetings where it was just being widely dismissed.
8 It's now law in 17 states and it's President Biden's energy
9 goal for the United States. And I think California can
10 take great credit for being a part of driving that vision
11 forward. And this report, I think, will be a really
12 important milestone as well that I hope gets a lot of
13 attention. It certainly deserves it.

14 I wanted to also thank my colleagues, starting
15 with Commission McAllister, who's really provided
16 substantial input and attention to detail and just
17 throughout the whole process has been a terrific partner.

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

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

25 And so with that I open it up to any comments or

1 questions or discussion from my colleagues.

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

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

6 BOARD MEMBER MCALLISTER: Okay. Okay, great.
7 I'm happy to start, I guess at risk of repeating a little
8 bit, but hopefully not too much. Really, thanks to the
9 whole team. I mean Terra and Aleecia, Liz and the former
10 Siva. Really, just the amount of teamwork and collaboration
11 and communication, I mean just the density of the
12 communication sustained over the whole period of the
13 development of this report was just impressive. And I
14 think the collateral benefits of that are just going to
15 become more and more apparent over time in all sorts of
16 arenas, not just in the follow-up to SB 100, but really
17 across the agencies as we collaborate on more and more
18 things.

19 So I think that is kind of the model that this
20 presents for inter-agency collaboration I think is really
21 kind of a meta-benefit of this report. And so I think just
22 watching that evolve has been really, really terrific to
23 see. And I think you know we've created a really good
24 relationship across the agencies.

25 And we do have big challenges. We have other

1 large infrastructure conversations that we need to have
2 going forward, as in the transition. So I think it bodes
3 well for those conversations, which there aren't easy
4 solutions. And this report really lays out kind of
5 different pathways that the state could take.

6 So I really see this report as foundational. You
7 know, the cleaning up of the electricity grid is
8 foundational for our whole energy transition to zero
9 carbon. And we see that up and down, all the way down to
10 individual electrification, individual loads, and the way
11 that we plan our distribution sub-transmission,
12 transmission grid. And so this really is a backbone of an
13 overall strategy for the state, and certainly the energy
14 sector, it's central. So really I think it's hard to
15 overstate that the support really puts a great marker in
16 the ground.

17 And just a couple of other things. I think the
18 way we approached it with the scenarios, and the way we
19 sort of determined which scenarios we were going to put as
20 core scenarios and which were study scenarios, how we ended
21 up kind of defining the different buckets of resources, the
22 sort of generic zero carbon. It really does lay a nice
23 platform or good foundation for having those individual,
24 those specific conversations going forward. There's a lot
25 of discussion about hydrogen these days, so we have this

1 path forward. We can have a specific hydrogen conversation
2 that's all into that piece of the market with those
3 stakeholders. But then has a really clear way to loop back
4 to the update of SB 100. And so the foundational -- just
5 the platform is there for us all to dwell in over a fairly
6 long period of time, which is what it's going to take to
7 get there.

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

17 And decarbonization in the near term, load
18 flexibility does enable us to utilize decarbonized energy
19 when it's available and avoid using more carbon-intensive
20 energy when that's all there is on the grid.

21 And then, reliability. And I think maybe that's
22 the most important of the three. Load flexibility really
23 does enhance our reliability. And I think that the
24 scenario really starts to lay out the value proposition for
25 that in a way that's relevant to the whole grid. And that

1 really has been a challenge for distributed energy
2 resources as to really get that macro view of what they
3 mean when you roll it all out.

4 And so having this report sort of lay out that
5 case really puts some wind in our sails to be able to
6 develop the various flavors of load flexibility going
7 forward. So with that we can put our Load Management
8 Standards and our Building Code and our SB 49 appliance
9 flexibility, all of that stuff really helps develop that
10 resource and contributes to this greater whole.

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

21 CHAIR HOCHSCHILD: Well thank you, Commissioner.
22 And I would just second your last point on the role of
23 buildings, and all of this. And another way to say it is
24 that for SB 100 to be successful, I mean everything that
25 touches the electric grid needs to be a good citizen of the

1 grid. And the Load Management Standards in particular, I
2 think, are going to really help accelerate that. So thank
3 you for that and for everything else you're doing on the
4 Building Code and so much else.

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

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

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

11 BOARD MEMBER GUNDA: Okay, thank you Chair. I
12 think I'm going to use up all my minutes for today on this
13 item as I'm going to take a couple of minutes here. I
14 think I just want to begin with just saying a big
15 congratulations to the entire team of what a tremendous
16 effort.

17 And ideally over the last 18 months I was
18 tracking this closely, at times not so closely at times,
19 but just looking, just watching the team grow into this
20 project. And kind of landing this humongous plane safely
21 was just a tremendous effort. And it just goes to the
22 fortitude, clarity, the collaborative spirit, and the
23 passion that this team has.

24 And I think it's a -- I cannot overstate this --
25 the incredible champion that Terra has been on this from

1 the front, leading it from the front. Being able to
2 coordinate between the Agency, outside the Agency, bringing
3 everybody together.

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

14 But I do want to call out a couple of people,
15 because moments like this, just reports like this,
16 opportunities like this just allow for some of the
17 experienced staff to kind of have an opportunity to mentor
18 some staff that are kind of going into it. So I just want
19 to thank Alvarado, who also retired. Judy Grau, as Terra
20 mentioned, and Jim Bartridge. And the three of you have
21 been incredible mentoring kind of what I think of as the
22 new crop of -- a new wave of leadership at the CEC. And
23 that includes Liz, Chris McLean, Mark Kootstra, Angela,
24 everybody. I mean there's so many people behind the
25 curtains. But you guys all kind of showed how much of a

1 leadership role you can take, so thank you so much for your
2 efforts.

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

9 And as Terra mentioned a big thanks to Aleecia
10 for just the ability to bring people together and move us
11 all forward.

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

20 Also, I just want to note a few more people from
21 CPUC and CARB, which were essential for the completion of
22 this project. So James McGarry and Jason Ortego and
23 Stephanie Kato, Carrie Biolin, (phonetic) and Mary Jane
24 Coombs. All of them have been meeting on a weekly basis to
25 ensure this all happened.

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

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

20 And Commissioner McAllister, your leadership on
21 load flexibility and data. I don't think we can make this
22 happen without the load demand side management and the
23 opportunities with the DR. So again, thank you to your
24 leadership in kind of keeping us moving forward and you're
25 kind of calm demeanor no matter what happens to kind of

1 move this incrementally. So thank you to both of your
2 leadership.

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

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

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

24 BOARD MEMBER DOUGLAS: Well thank you,
25 Commissioner Gunda. And I will try to not repeat

1 everything that's just been said by all of you. But I do,
2 I think, want to emphasize some of it. Because I think
3 this report was a significant achievement and I think it's
4 going to be really important to us as we chart our course
5 forward from here.

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

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

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

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

8 So with that let's --

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

10 CHAIR HOCHSCHILD: Yes?

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

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

21 Also Terra and Liz especially, I want to
22 recognize both of you. Terra, you have been an exceptional
23 leader throughout this process. I think, then Siva started
24 it off and really forged those relationships with our
25 inter-agency teams, but you really took the reins about

1 mid-term in the process. And really led and shaped the
2 report, made sure key discussion items were kept front and
3 center. And you never let it slide, so thank you for your
4 leadership.

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

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

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

23 MS. GUTIERREZ: Thank you, Chair.

24 CHAIR HOCHSCHILD: Yeah.

25 Okay, thank you everybody. Let's move on, if we

1 could, to Item 3, Antelope Valley Water Storage.

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

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

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

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

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

1 that it's lower carbon emissions, and also do it with lower
2 costs. Next slide, please.

3 Speaking to technological innovations, this
4 aquifer pumped hydro technology is beneficial in that it's
5 scalable and has rapid implementation. And this is because
6 it's able to build off of existing infrastructure. And
7 this is what contrasted to large-scale hydro, which is very
8 capital and resource intensive.

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

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

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

24 Just as an overview of briefly how the project
25 works, starting with the left side, the image to the right

1 side, water flows into or flows back through the piping
2 back into the aquifer and that's what generates power out
3 of the system. This power can work in conjunction with the
4 grid or can be isolated from the grid. And then the idea
5 is that this energy will be powering, again critical
6 facilities such as disadvantaged and community hospitals,
7 community centers and also emergency operations centers in
8 these low-income communities. Next slide, please.

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

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

23 And we need to do, obviously a portfolio of other
24 renewable projects. And we are doing that including
25 offshore wind and biomass and geothermal and others. But

1 storage is a really, really key part of the equation. And
2 I think we've now funded 58 different energy storage
3 projects in California through the EPIC program. I'm
4 incredibly proud of the team for supporting that fleet.
5 And in fact Commissioner Gunda and I, during the August and
6 September threats to the grid, worked very closely on
7 pulling every possible lever. And Laurie and Mike Gravely
8 and others were really helpful just making use of the fleet
9 that we have, so this will add to that.

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

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

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

25 So other comments or questions from my -- oh

1 sorry, let me see if there's public comment on this first.
2 I apologize. Madam Public Advisor, do we have any public
3 comment on Item 3?

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

6 CHAIR HOCHSCHILD: Okay, thank you.

7 Colleagues, any other comments or observations
8 anyone would like to share on this?

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

14 CHAIR HOCHSCHILD: Okay, thank you.

15 BOARD MEMBER GUNDA: Yes --

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

18 BOARD MEMBER GUNDA: Yeah, Chair, thank you.
19 Just thank you so much for the presentation, this is very
20 exciting, same thing what Chair and Commissioner Douglas
21 said. The specific question/comment, I guess, is kind of
22 thinking through this universe question that the Chair
23 asked and you just mentioned there are about 100,000 wells
24 out there. And then this project is about 200 kilowatts,
25 so we're looking at a potential of about 20 gigawatts,

1 right? And so that's an incredible amount of storage
2 opportunity.

3 So just want to understand as a follow-up
4 separately, the universe and possibly the challenges as to
5 scaling this kind of technology. And also how big this
6 could be. What is the range that we're talking about from
7 200 megawatts to 500 megawatts -- or I meant 500 kilowatts,
8 for example? So it'll be really great to follow up and I
9 would love to keep track of this project. And thank you
10 for the presentation.

11 CHAIR HOCHSCHILD: Thank you.

12 Commissioner McAllister would you be willing to
13 make the motion?

14 BOARD MEMBER MCALLISTER: Yes, I will move Item
15 3.

16 CHAIR HOCHSCHILD: Okay.

17 Commissioner Douglas, would you be willing to
18 second?

19 BOARD MEMBER DOUGLAS: Second.

20 CHAIR HOCHSCHILD: Okay. All in favor say,
21 "Aye." Commissioner McAllister?

22 BOARD MEMBER MCALLISTER: Aye.

23 CHAIR HOCHSCHILD: Commissioner Douglas?

24 BOARD MEMBER DOUGLAS: Aye.

25 CHAIR HOCHSCHILD: Commissioner Gunda?

1 BOARD MEMBER GUNDA: Aye.

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

3 This item passes 4-0.

4 Let's turn now to Item 4.

5 MR. MORI: Good morning, Commissioners. I am
6 Kevin Mori from the Energy Efficiency Research Office in
7 the Energy Research and Development Division.

8 In California, data centers consume over 2
9 percent of the state's electricity usage and is rapidly
10 growing. It is expected to double in energy consumption
11 within the next eight years. This is due to the
12 significant amount of electrical cooling requirements and
13 data processing inefficiencies. Data center cooling makes
14 up for about 40 percent of data center electricity usage
15 and is caused by the heat produced by electrical
16 transistors. Next slide, please.

17 In the Internet world, fiberoptics and light
18 signaling are becoming more commonplace and produce faster
19 Internet speeds. However, the switchboard from end user to
20 data center servers still use electrical transistors, and
21 is the current bottleneck for data processing. Instead of
22 using electrical transistor switches this project will use
23 optical switches that use light to transmit data. The
24 benefits of this technology include doubling data
25 processing energy efficiency, reducing cooling requirements

1 for data centers, and increased Internet speeds. Next
2 slide, please.

3 In a prior Department of Energy and CEC federal
4 cost share grant, UC San Diego developed a pilot scale
5 optical rotor switch that can achieve cooler temperatures
6 and faster data processing by directing server traffic with
7 light signaling. With the idea of light traveling 100
8 times faster than electricity, this switch has the
9 potential to double data processing speeds. Due to this
10 potential UC San Diego was recently awarded additional
11 funding to further test the light wave technology and
12 simulated real-world workloads. And to improve it for
13 scalability and commercialization. The simulation will use
14 Opera protocols to simulate the real-world web browser
15 traffic. Next slide, please.

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

20 As shown in the Phase 2 column, the Department of
21 Energy has now awarded \$5 million to test the technology in
22 real-world workloads and improve commercialization. As a
23 result, the project that I'm presenting today will be
24 providing UC San Diego with an additional \$425,000 as cost
25 share to the latest federal grants. If this award is

1 approved the project would have leveraged Department of
2 Energy investment of \$8.8 million versus CEC investment of
3 \$900,000, thus leveraging the state funds by nearly 10
4 times. UC San Diego has summarized their activities to
5 date in the article at the shown link. Next slide, please.

6 And with that I would like to finish up by
7 recommending approval of this agreement with UC San Diego
8 and staff's determination that the project is exempt from
9 CEQA.

10 I am available to answer any questions. And I
11 believe George Papen might be on the line for comment.
12 Thank you.

13 CHAIR HOCHSCHILD: Thank you, Kevin, for that.
14 And there's so much to love about this. I love the
15 leveraging of federal funds, love the partnership with UC
16 San Diego and the area of focus. Data centers are one of
17 the top loads in California.

18 I also want to just thank again the Siting
19 Division and everyone else who collaborated on the workshop
20 we had some weeks ago on cleaning up data center backup
21 generation. But I think this is a really good project to
22 help reduce the load. And I just wanted to thank everybody
23 involved.

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

1 BOARD MEMBER MCALLISTER: Do we want to get
2 public comment, yeah.

3 CHAIR HOCHSCHILD: Yeah, we might have public
4 comment on this. Is there public comment, Noemi, for this
5 item?

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

9 CHAIR HOCHSCHILD: Thank you. Let's go to
10 Commissioner McAllister.

11 BOARD MEMBER MCALLISTER: Okay yeah, I just would
12 emphasize what you said already, Chair. Data centers, I
13 mean they use a massive amount of energy. And we've been
14 funding this, various generations of energy efficiency in
15 data centers for a good long while now and it's paid off in
16 spades. It is a big -- 2 percent Kevin said -- it would
17 have been much bigger than that if we hadn't been working
18 on this for the last 15 years or so.

19 And data centers have only grown. And as our
20 lives more and more depend on it, it's just vital really
21 that we move into it and construct new data centers.
22 Constructing really cutting-edge, efficient data centers.
23 Not generate heat in the first place, and then be very
24 efficient about the cooling of the heat that is generated.

25 And then we really need to continue to work on

1 figuring out how to reduce the energy consumption of
2 existing data centers of which there are many, many. So
3 there's a lot of frontier, there are a lot of frontiers
4 here to keep investing in.

5 I want to just express optimism that this Match
6 Program that we have had periodically at the Commission,
7 it's had a great impact. And just hopeful that as ARPA-E,
8 as the sort of new federal landscape for investment in R&D
9 ramps up and gets funding, we can have more opportunities
10 to do this and partner with California entities that are
11 getting federal funds and really, really leverage our own
12 dollars that way. So I think this is a really great
13 project.

14 CHAIR HOCHSCHILD: Thank you, Commissioner. Any
15 other comments from my colleagues? Seeing none,
16 Commissioner McAllister, would you be willing to make the
17 motion?

18 BOARD MEMBER MCALLISTER: I will move Item 4.

19 CHAIR HOCHSCHILD: Okay.

20 Commissioner Gunda, would you be willing to
21 second?

22 BOARD MEMBER GUNDA: I second the motion.

23 CHAIR HOCHSCHILD: Okay. All in favor say ayes.
24 Commissioner McAllister?

25 BOARD MEMBER MCALLISTER: Aye.

1 CHAIR HOCHSCHILD: Commissioner Gunda?

2 BOARD MEMBER GUNDA: Aye.

3 CHAIR HOCHSCHILD: Commissioner Douglas?

4 BOARD MEMBER DOUGLAS: Aye.

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

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

7 MR. FERREIRA: Slide 1:

8 Hello, my name is Michael Ferreira and I work in
9 the Energy, Research and Development Division. I'm here
10 seeking approval for eight new grant agreements that
11 resulted from our 2020 BRIDGE solicitation. Next slide,
12 please.

13 One of our primary goals within the R&D Division
14 is to support and enable clean energy start-ups across the
15 state. And over the past couple years we have scaled some
16 of these programs to support (indiscernible) from early-
17 stage prototypes under CalSEED to lower emission production
18 under RAMP. (phonetic). These stated agreements come from
19 our BRIDGE Program, which (indiscernible) and to help clean
20 energy startups avoid the funding gap between the time a
21 successful project ends and funding for a new project is
22 awarded. Next slide, please.

23 The first agreement from this BRIDGE is with
24 Packetized Energy Technologies, which will demonstrate the
25 potential of flexible electrical devices to provide

1 benefits to the electric grid.

2 Smart devices used for demand response have
3 enormous potential to mitigate problems like the shortage
4 of capacity, which leads to blackouts. However, existing
5 demand response solutions are not flexible enough to
6 respond to grid conditions and do not provide enough value
7 to consumers needed for scale.

8 Packetized Energy's platform aggregates smart
9 devices such as thermostats, water heaters, and air
10 conditioners into resources that respond in real time to
11 changing grid conditions and enables expansion of demand
12 response through customer friendly features that are easy
13 to choose, install and operate. Next slide, please.

14 The next agreement is with Noon Energy, who will
15 continue to advance their carbon-oxygen long-duration
16 storage battery. With solar and wind power expanding
17 rapidly, long duration storage is urgently needed to
18 balance their intermittent supplies against demand, with
19 existing storage technologies being too expensive or
20 geographically limited to offer a viable solution.

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

25 This funding will enable scale-up, development

1 and field-testing demonstration of a storage system coupled
2 to solar power, to provide dispatchable renewable
3 electricity. Next slide.

4 The next agreement is with Next Energy
5 Technologies, who will continue development of their
6 transparent solar cells. Considerable progress has been
7 made making commercial buildings more energy efficient, but
8 there remains a lack of options for onsite energy
9 generation as these buildings often don't have enough
10 rooftop space for conventional solar panels.

11
12 Next Energy is solving this problem by developing
13 windows that generate energy, while maintaining customer
14 expectations for aesthetics. Additionally, their windows
15 also improve energy efficiency by converting infrared,
16 which otherwise would contribute to building heat load,
17 into electricity.

18 Their organic semiconductor coating can be
19 directly integrated into dual-pane windows, eliminating
20 encapsulation costs and allowing their technology to target
21 a 1-year payback. Next slide, please.

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

25 Lithium metal batteries have great advantages

1 over state-of-the-art lithium ion batteries in terms of
2 energy density and cost, which present huge opportunities
3 for long-range and low-cost electric vehicles in the
4 future. However, current lithium-metal technologies use
5 lithium foil anodes, which are incredibly expensive and
6 pose a significant safety risk.

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

13 This project will continue development of their
14 “anode-free” current collector. And use machine learning
15 to optimize the electrolyte formula to enable the battery
16 to endure aggressive fast-charging conditions. Next slide,
17 please.

18 Next is South8 Technologies, who has developed a
19 novel and patented liquefied gas electrolyte chemistry for
20 advanced Lithium ion batteries. Conventional Lithium-ion
21 technology is limited by poor performance at temperatures
22 below 20 Celsius and can be hazardous if they’re damaged.
23 South8 is working to overcome these barriers with their
24 liquid gas electrolyte, which has high conductivity at low
25 temperatures, opening up opportunities for a wider range of

1 applications.

2 Their liquid gas electrolyte is also much safer,
3 because if the cell structure is compromised, it can vent
4 the non-toxic electrolyte and eliminate any possibility of
5 explosion. Next slide, please.

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

9 Currently, heat pumps and air conditioners must
10 be installed through a wall by a professional HVAC
11 technician, which is costly and time consuming. Treau's
12 room heat pump can be installed by two people with no tools
13 in about 15 minutes and can be plugged directly into a
14 typical 120 volt outlet.

15 In this project Treau proposes upgrades, which
16 will expand the efficiency and thermal range of their
17 product. These upgrades will provide energy savings of an
18 estimated 33 percent for cooling and 70 percent for heating
19 when compared to mini-splits. Next slide, please.

20 Next is Skyven Technologies, who is developing an
21 innovative approach to industrial decarbonization.

22 Industrial plant operators lack the resources, both in
23 terms of time and finances, to hire energy experts to
24 perform a detailed assessment, scope, and concept for
25 greenhouse gas reducing projects.

1 Due to the large variety and uniqueness of plant
2 types, decarbonization efforts require significant up-front
3 analysis and consultant payments, with no guarantee of
4 greenhouse gas or cost savings.

5 Sykven will develop an artificial intelligence
6 platform that reduces front-end engineering costs by a
7 factor of 10 and timeline by a factor of 4. It generates a
8 customer-worthy engineering report justifying the selection
9 and measuring and presenting costs, risks, and expected
10 energy and carbon savings, ultimately making the process of
11 decarbonizing easy, impactful, and lucrative. Next slide,
12 please.

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

17 As battery cells have grown in size and density,
18 standard electrical methods are limited in their ability to
19 detect small inconsistencies that have a big impact on
20 performance quality, and are a major source of cost and
21 inefficiency in battery manufacturing. Feasible seeks to
22 overcome these issues by commercializing an inspection
23 method using ultrasound and data analytics to improve
24 productivity and throughput in battery cell manufacturing.

25 This new process aims to accelerate yield ramps

1 by 2 times and adds 5 percent steady state yield by 5
2 percent yield. Next slide, please.

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

8 CHAIR HOCHSCHILD: Thank you so much.

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

15 And I would say this kind of funding is important
16 in normal times, but especially important in a time like
17 this where we're still in the middle of an economic
18 recovery to help these companies make it to the next stage.
19 I really think it can be the difference between succeeding
20 or folding as a company, and so I'm so proud of this
21 portfolio and very pleased to support it.

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

24 MS. GALLARDO: Yes, this is Noemi Gallardo,
25 Public Advisor. We do have someone on the Verizon line,

1 Vince Romanin it looks like, from Treau. So if we could
2 open up his line. Vince, your line is open. Please spell
3 your name before speaking and indicate your affiliation.
4 You may begin.

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

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

22 Our easy-to-install electric heat pump with low
23 global-warming potential refrigerant helps remove two of
24 the largest sources of carbon emissions from buildings: one
25 being fossil fuels for heating and the other HFC

1 refrigerants. And, more importantly, our system is also
2 designed to be a beautiful, sleek and efficient product
3 that people will be excited to bring into their homes.

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

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

16 CHAIR HOCHSCHILD: Thank you so much.

17 Let's go to Commissioner discussion, maybe
18 starting with Commissioner McAllister.

19 BOARD MEMBER MCALLISTER: Yeah, I wholeheartedly
20 agree with your assessment that this is a great, really
21 impressively diverse group of projects. I mean, everything
22 industrial -- really happy to see some industrial
23 efficiency in here -- storage and even small-scale
24 generation.

25 And particularly buildings, obviously I think I

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

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

19 CHAIR HOCHSCHILD: Great, thank you. Any other
20 comments from Commissioners?

21 BOARD MEMBER GUNDA: Yeah, Chair, this is Siva. I
22 just wanted to just pile on the thanks and I just want to
23 thank Michael for taking the time to brief me on this. And
24 I'm really excited about the portfolio of generation and
25 the grid services in there. And it'll be very beneficial

1 with the focus on reliability and the long-term
2 opportunities we go through.

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

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

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

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

18 BOARD MEMBER MCALLISTER: I will move Item 5.

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

21 BOARD MEMBER DOUGLAS: Yes, second.

22 CHAIR HOCHSCHILD: All in favor say aye.
23 Commissioner McAllister?

24 BOARD MEMBER MCALLISTER: Aye.

25 CHAIR HOCHSCHILD: Commissioner Douglas?

1 BOARD MEMBER DOUGLAS: Aye.

2 CHAIR HOCHSCHILD: Commissioner Gunda?

3 BOARD MEMBER GUNDA: Aye.

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

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

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

24 So the objective of the H2RAM solicitation and
25 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

1 tugboat for implementation at the Port of Los Angeles. Due
2 to space constraints on tugboats and their high fuel usage
3 requirements liquid hydrogen maybe a more feasible onboard
4 storage solution, compared to compressed gaseous hydrogen,
5 which is more typically used for on-road vehicles.

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

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

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

1 can result in around 270 metric tons of CO2 emissions
2 annually. Next slide, please.

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

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

11 CHAIR HOCHSCHILD: Thank you. Let's go first to
12 public comment.

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

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

23 MS. GALLARDO: Yes, we can. Sorry, you have
24 three minutes.

25 MR. ZOBEL: Thank you. William Zobel, I'm the

1 Executive Director of the California Hydrogen Business
2 Council. Commissioners, staff and members of the public
3 thank you for giving us the opportunity to comment today.

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

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

21 The Business Council is here to support the
22 Commission's efforts in this area and other areas. We have
23 a broad and diverse membership that has tremendous
24 technical depth. Our members are willing, ready and able
25 to assist this Commission in its efforts to meet the

1 state's decarbonization goals in these areas. Thank you
2 very much.

3 MS. GALLARDO: Thank you.

4 Next up we have Ricky from Golden Gate. Ricky, a
5 reminder to please spell your name and state your
6 affiliation. You may begin.

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

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

23 The funds that CEC provides for developing
24 hydrogen technology projects is the foundation, which
25 enables companies like us to actualize a future of

1 accessible zero-emission power, including and especially in
2 our low-income and disadvantaged communities. Golden Gate
3 Zero Emission Marine is honored to be nominated for this
4 award, which will enable the development and testing of
5 novel technology we hope to use in making hydrogen
6 accessible for all.

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

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

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

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

2 MS. GALLARDO: Yes, we can.

3 CHAIR HOCHSCHILD: Yes, we hear you.

4 MR. CARMICHAEL: Good morning, Commissioners, Tim
5 Carmichael. Today I'm actually representing Southern
6 California Gas Company though on other occasions I do
7 represent SDG&E as well. It's Tim Carmichael, T-i-m C-a-r-
8 m-i-c-h-a-e-l.

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

17 We commend the CEC for creating this unique grant
18 funding opportunity from two different programs within the
19 CEC. SoCalGas is also providing significant matching funds
20 for these projects.

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

25 MS. GALLARDO: Thank you.

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

5 MR. SILVER: Okay this is Fred Silver, S-i-l-v-e-
6 r. I am Vice President of CALSTART. And thank you to the
7 Commissioners for allowing me to speak today, and thank you
8 to Peter Chen and his staff for selecting our H2RAM
9 proposal for consideration.

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

20 So thank you for consideration for our project
21 today.

22 MS. GALLARDO: Thank you.

23 Next up we have Ted Barnes it looks like, from
24 the Gas Technology Institute. Ted, a reminder to spell
25 your name, please state your affiliation. Your line is

1 open and you may begin.

2 MR. BARNES: Thank you very much. Good morning.

3 Can you hear me?

4 CHAIR HOCHSCHILD: Yes.

5 MR. BARNES: That's fine, thank you. My name is
6 Ted Barnes, B-a-r-n-e-s, and I'm the Director of the
7 Transportation Group at GTI. I would like to very briefly
8 just thank all of the Commissioners for selecting GTI on
9 this project in allowing projects and programs such as this
10 that fund the clean energy in especially difficult to
11 decarbonize sectors.

12 These projects are very important to GTI's
13 mission, as well as to reaching California's climate goals.
14 We are very eager move forward with the technical project
15 team, as well as (indiscernible) like SoCalGas support and
16 the Energy Commission's support.

17 We also thank the Commissioners for their funding
18 of clean energy across some wide variety of sectors
19 (indiscernible - audio cuts out.) So thank you very much
20 for that. And we truly look forward to this exciting
21 projects (indiscernible). Thank you.

22 MS. GALLARDO: Thank you.

23 This is Noemi the Public Advisor. It looks like,
24 but we're unclear, if there is one more speaker. So let me
25 check with the Verizon line. So Les Mood from SineWatts,

1 if we could open up his line and see if Les wants to speak
2 on this item. Les, your line is open. If you would like
3 to speak on this item please feel free to begin. Restate
4 your name, please spell your name and indicate your
5 affiliation.

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

9 And yeah, the reason I want to speak today is to
10 thank the CPUC and the CEC for encouraging innovation in
11 the State of California. I believe leadership of
12 California tends to result in great progress for the
13 nation.

14 And in the context of companies that are moving
15 out of California like I believe Tesla and some others, and
16 in the context of the incentives from states like Arizona
17 for Lucid, and the incentives that are provided. And for
18 instance, Arrival announced that the headquarter location
19 of SineWatts in Charlotte, North Carolina, would be
20 incentivizing Arrival to open up a micromanufacturing
21 facility.

22 So I'm curious what -- and I hope this is
23 appropriate to ask here today -- but I'm curious what this
24 state can do to incentivize much like Nevada and Arizona
25 and cities, the relocation of companies who aim to achieve

1 the goals, the grand goals of California, namely.

2 And I would like to add that there's a quote from
3 one of the Commissioners at the CPUC that was on the VGI
4 Workshop meeting yesterday, which was that, "We have big,
5 bold goals centrally in California. And in order to
6 achieve them we're going to need innovation and new ideas."
7 So I'm very thankful for the leadership of the CPUC and the
8 CEC to provide the kind of environment necessary to nurture
9 innovation.

10 And I guess my question would be if there's any
11 resources or where it would be recommended if a company is
12 considering to move to California or Nevada or Arizona, or
13 to seek city funding, what kind of options are out there to
14 encourage businesses to move to California and to help with
15 the problem? Thank you very much.

16 MS. GALLARDO: Thank you. And, Les, we usually
17 do not do dialogue and during public comment periods, I
18 just want to clarify that. Unless the one of the
19 Commissioners wants to respond. Otherwise, that was the
20 last comment and Chair, we could move forward.

21 CHAIR HOCHSCHILD: Thank you so much to all the
22 stakeholders and the members of public who commented there.
23 I would just observe that obviously pollution from ports
24 remains a big issue in our state impacting disadvantaged
25 communities the most. And this will help us address that

1 as well as push innovation in this sector, so I'm really
2 pleased to see all these projects and happy to support
3 this. Are there any other Commissioners wishing to
4 comment? Commissioner Douglas.

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

10 CHAIR HOCHSCHILD: Okay, thank you.

11 Commissioner McAllister?

12 BOARD MEMBER MCALLISTER: Yeah, I want to just
13 thank Peter for the briefing I got. I think this is hugely
14 important actually. I mean, ports and the shipping lanes
15 that connect them are just a massive source of all sorts of
16 different pollutants, sulfur and particulates and all the
17 rest of it. and so that's a sector I agree with
18 Commissioner Douglas, we need to do much more work on it I
19 think.

20 And this is really creative, just the way -- I
21 want to give kudos to Peter and Laurie and Virginia and the
22 whole crew in the RDD for this. Because the way they went
23 out and sort of gathered ideas and came up with the idea to
24 target this solicitation in the first place, I think, was
25 really demonstrative of their creativity. And their sort

1 of can-do mentality and approach on this in targeting these
2 particular sectors in ports. And really getting pragmatic
3 and really ground-truthing our investments, really focusing
4 on where the best bang for buck is. So I want to thank
5 them for that. I'm very supportive of these.

6 CHAIR HOCHSCHILD: Thank you. Unless there's
7 other Commissioner comments --

8 BOARD MEMBER GUNDA: Yeah Chair, I just wanted to
9 note really quick again I think everything said, thanks to
10 Peter for the excellent presentation. I think the emphasis
11 that Peter kind of mentioned in terms of air quality
12 implications and the equity implications of this work is
13 something that I want to highlight. And that's something
14 that we ought to be doing. And taking every opportunity
15 that we have to advance equity and the clean energy and
16 clean air quality and then clean California opportunities
17 for the entire state. So thank you, Peter, for your
18 presentation.

19 CHAIR HOCHSCHILD: Great. Thank you everybody.

20 Commissioner McAllister, would you be willing to
21 move the item?

22 BOARD MEMBER MCALLISTER: Yes. I will move Item
23 6.

24 CHAIR HOCHSCHILD: Commissioner Gunda, would you
25 be willing to second?

1 BOARD MEMBER GUNDA: Absolutely. I second the
2 item.

3 CHAIR HOCHSCHILD: All in favor say aye.
4 Commissioner McAllister?

5 BOARD MEMBER MCALLISTER: Aye.

6 CHAIR HOCHSCHILD: Commissioner Gunda?

7 BOARD MEMBER GUNDA: Aye.

8 CHAIR HOCHSCHILD: Commissioner Douglas?

9 BOARD MEMBER DOUGLAS: Aye.

10 CHAIR HOCHSCHILD: Okay, what I'd like to do now
11 is actually skip ahead and let's knock out Items 14 through
12 18 and then we'll come back to the agenda. Commissioner
13 Monahan should be joining us shortly. So with that if we
14 can move ahead, Madam Public Advisor, to Item 14 which is
15 approval of the business meeting minutes.

16 Are there any public comments on Item 14?

17 MS. GALLARDO: This is Noemi Gallardo, Public
18 Advisor. There are no public comments on Item 14, the
19 minutes.

20 CHAIR HOCHSCHILD: Commissioner McAllister, would
21 you be willing to move Item 14?

22 BOARD MEMBER MCALLISTER: Yes, I will move this
23 item.

24 CHAIR HOCHSCHILD: Commissioner Douglas, would
25 you mind seconding?

1 BOARD MEMBER DOUGLAS: Second.

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

4 BOARD MEMBER MCALLISTER: Aye.

5 CHAIR HOCHSCHILD: Commissioner Douglas?

6 BOARD MEMBER DOUGLAS: Aye.

7 CHAIR HOCHSCHILD: Commissioner Gunda?

8 BOARD MEMBER GUNDA: Aye.

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

11 Item 15, Lead Commissioner, Presiding Member
12 Reports. Commissioner Gunda?

13 BOARD MEMBER GUNDA: Yeah, thank you, Chair. I
14 just wanted to start off with some kind of thank yous at
15 the top. It's been exactly a month and a little bit since
16 the appointment. My first Business Meeting was on the day
17 I swore in thanks to you, Chair, for pulling me into that
18 meeting.

19 And as I start kind of getting into this role I
20 just want to really thank my colleagues, each one of you,
21 for your kindness and mentorship and guidance as I took on
22 this role. So thank you for helping me understand the
23 various aspects of this role, the nuances and developing
24 the necessary partnership to move the conversation forward.

25 And there are a few elements that I've been doing

1 over the last month I just wanted to note, one is trying to
2 meet one-on-one with all the DACAG members and trying to
3 understand some of their priorities. And I want to thank
4 our Public Advisor, Noemi Gallardo, for joining me on all
5 those calls and helping me set up those meetings.

6 There have been some incredible conversations.
7 And I'm hoping to do some community informational visits
8 later in the year when the COVID impacts reduce as well as
9 some site visits, to really kind of develop a tangible
10 action plan on some key priorities on what we can do to
11 ensure the SB 100 transition, as well as other major goals,
12 clean energy goals, that the state has.

13 I also want to thank the EAD staff for the work
14 that they have been doing to prepare for summer 2021.
15 There has been a number of analyses that have been
16 conducted to look at a variety of scenarios for reliability
17 under circumstances that we have seen last year. Last year
18 in August and September, we have experienced an extreme
19 heat wave situation. Kind of for those of you who were
20 following it was the August month we had the temperatures
21 that are 1-in-30 weather events. And September was a 1-in-
22 70. And it was also regional, complete west-wide, so we
23 are looking at a variety of analyses.

24 I want to call out specifically Lana Wong from
25 EAD for developing a simple but elegant hourly tool, stack

1 analysis tool, that helps us look at a variety of
2 scenarios. And we are looking through under what scenarios
3 there might be shortages, what hours, and how do we
4 mitigate them and contingencies.

5 I want to thank Commissioner Douglas for her
6 leadership on and working together on the contingencies for
7 this summer, as well as the future if some extreme
8 situations were to present.

9 Also, in vain of trying to figure out the
10 contingencies we have developed some conversations with
11 DWR. I want to thank the leadership from the CNRA, Matt
12 Baker; Carla from DWR, really working on at how best DWR
13 can support reliability. And then in the future with the
14 grid of California.

15 Also want to call out Reiko Kerr from LADWP for
16 some of the work that Reiko has been doing from neighboring
17 balancing authorities to support CAISO and then the product
18 system and emergency needs. So I just want to thank a lot
19 of work that has been happening between CAISO and CPUC.
20 Oftentimes this is not visible, but there is a lot of
21 personnel hours trying to work out the kinks. And then
22 making sure we have a clear plan going into this summer.

23 So those are the main activities that I have been
24 up to with Commissioner McAllister working on some data
25 issues and thinking about the future of data. And NDR,

1 (phonetic) there's another element. I think Commissioner
2 McAllister will cover that in his report, so I will leave
3 it to Commissioner McAllister.

4 And finally, as I build the office, I have my job
5 postings for the advisors. And really, for those of you
6 who are on the call who would love to join the CEC it would
7 be great to have talented, committed people join CEC and
8 help us move the mission and the vision of CEC as well as
9 the state forward.

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

12 CHAIR HOCHSCHLD: Thank you. Let's move on to
13 Commission McAllister.

14 BOARD MEMBER MCALLISTER: Okay, well great. I'll
15 keep it brief, but I wanted to welcome Commissioner Gunda I
16 think for the first full month. Congratulations on
17 surviving. And it sounds like you're set up well to
18 thrive. I didn't have any doubt. But it's actually as our
19 arrangements and committees and the key relationships kind
20 of evolve, it's actually a little bit bittersweet for me,
21 because there's some really great topics that I won't be
22 working on directly with Commissioner Gunda now.

23 But there also is a sort of an upside to that in
24 that I think my portfolio is readjusting kind of at a good
25 time, to focus on the Building Standards and some big

1 issues that are really now upon us. Like the IEPR, which
2 I'll be leading this year, and the building decarbonization
3 discussion within that alongside the standards and Load
4 Management Standards and some very complimentary sort of
5 universal things related to buildings and flexibility. So
6 I'm excited to be able to sort of focus on that and still
7 have bridges over into the demand response and data worlds
8 as Commissioner Gunda said.

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

13 As you all know we, more than a couple of years
14 ago now we updated our data regulations to get more
15 complete information about consumption and other types of
16 data from the utilities and begin to integrate those into
17 sort of a central platform. And that has really moved
18 forward and it's getting -- I think not quite mature, but
19 it's really moved forward in a way that sets us up for just
20 structurally having a huge impact going forward into the
21 next year.

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

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

13 And as you know, the big IOUs have smart meters,
14 the electricity IOUs have smart meters. And so getting
15 much of the consumption data from them has started. And
16 we've tested and sort of gotten the infrastructure ready to
17 bring that or the infrastructure up and running to bring
18 that data in, to clean it up and get it settled in a
19 repository. And so in beginning to get automated data
20 tools so that we can start to analyze that data and get
21 load-shaping and trending, and all that is the eventual
22 goal.

23 So what we're doing, what the team is doing is
24 that we've got the data from some of the utilities, not all
25 of them. So it's sort of a step-wise process to start to

1 do that. And obviously there's we treat the data with care
2 and we want to just make sure we get all those bases
3 covered as we move forward. So I'll sort of leave it at
4 that high level for now, but I think the infrastructure is
5 in place, which is really a huge milestone.

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

16 I'm really looking forward to applying that in
17 many, many different realms certainly on the building side.
18 That'll be on those management standards, on even impact
19 assessment for different initiatives and programs, working
20 with local governments to roll up information for them in
21 ways that makes sense for their climate and energy
22 planning.

23 I think there are many, many applications
24 including the demand response work that Commissioner Gunda
25 and I will be working on. You know, trying to see what the

1 Commission's role can be in terms of more rigorous analysis
2 about what actually happens in demand response events. And
3 then helping with the baseline issue that we've been
4 discussing and kind of understanding really what demand
5 response as a reliability resource can actually look like.
6 And certainly the role of buildings and customer behavior
7 and automation in that can be and how big that resource
8 really can be.

9 So I think our collective efforts to really
10 create the information landscape that we need to do that
11 work is coming along nicely. So I just wanted to highlight
12 that and give kudos to staff on that.

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

25 So the trajectory really is just one that's

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

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

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

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

25 CHAIR HOCHSCHILD: Yeah.

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

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

12 CHAIR HOCHSCHILD: Thank you, Commissioner.

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

17 Commissioner Douglas, do you want to go next?

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

21 We kicked off the Lithium Valley Commission on
22 February 25th. And so that was really exciting, yes. And
23 the Chair and I were there. We, the Lithium Valley
24 Commission met. It was just a great introductory session.
25 We covered a lot of ground. They elected a Chair and

1 they're really prepared to move forward and hit the ground
2 running. I think we've got such great opportunities there.
3 And I just --

4 CHAIR HOCHSCHILD: Maybe just share who the Chair
5 is for the benefit.

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

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

20 The presentation from Denmark was extremely
21 helpful. And despite the different physical environment in
22 the North Sea compared to California the experience that
23 they've had and some of the ways that they've overcome
24 challenges and framed and scoped environmental documents,
25 for example, is pretty instructive to us. So that was very

1 helpful. And I think I'll stop there.

2 CHAIR HOCHSCHILD: Thank you.

3 Commissioner Monahan, any updates on your end?

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

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

25 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

1 important, that we will reach consensus? I hope so. That's
2 as far as I can go.

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

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

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

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

1 related pieces related to the reauthorization.

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

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

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

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

22 We have now funded almost \$50 million in R&D
23 projects on military bases in California. And that bears a
24 lot of fruit, not only because many of these projects
25 assisted us during this stress to the grid in August and

1 September, but because when we get things to scale,
2 including EV charging at L.A. Air Force Base and elsewhere,
3 these become models for bases around the country.

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

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

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

22 I am very, very excited about the chance for
23 electrification to reduce electric rates when you look at
24 the fact that almost a billion dollars has been contributed
25 by electric vehicle owners in California today, to the rate

1 base for charging and more on the way. But that was a very
2 fruitful discussion.

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

16 I will stop there, I think. And what I'd like to
17 do now is just let's see if we can quickly get through
18 items 16 and 17. Then we'll go back to the regular agenda.
19 So does the Executive Director have a report, Item 16?
20 (Silence on the line.) Drew are you on mute? There we go.

21 MR. BOHAN: Can you hear me?

22 CHAIR HOCHSCHILD: Yeah, I can hear you. Do you
23 have a report?

24 MR. BOHAN: Yeah, I do. I'm having trouble
25 getting auto-muted by mistake here. But anyway, yeah I

1 just wanted to acknowledge a few of our colleagues.
2 Yesterday at our town hall we acknowledged Linda Spiegel
3 who will be the Energy Commission's new Chief Deputy. She
4 measures her tenure with our organization in decades not
5 years. She's been with us for quite some time, highly
6 regarded by everybody she interacts with. She's humble.
7 She works with people really well at all levels of the
8 organization and she's just super-smart and great to get
9 along with. So I'm so excited to have her as a new
10 partner.

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

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

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

1 Thank you, Chair.

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

4 MS. GALLARDO: Hello, this is Noemi, Public
5 Advisor. I do have a couple of items. I'll try to go
6 through these quickly. And I also want to say I'm not
7 turning on my video, because I'm battling allergies as of
8 this morning and not winning. So I'm keeping my video off
9 to spare you. So if we could go to the next slide, please.

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

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

23 And then we will also be uplifting some employee-
24 led activities. And I wanted to mention this, because our
25 employees have been fantastic. Even though we've been in

1 virtual mode they are still finding ways to engage and be
2 socially active and creative about it. So one of those
3 ways is through employee resource or affinity groups. I
4 wanted to share that Renee Webster-Hopkins, for example, is
5 starting a rainbow affinity group or LGBTQ-plus community.
6 We also have the Disability Advisory Committee and a few
7 others that are starting to form.

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

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

16 MS. GALLARDO: You look fantastic here.

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

22 And I also wanted to say thank you to
23 Commissioners Douglas and Monahan for making remarks and
24 just telling us about their personal journeys and specific
25 experiences that they've had. Several staff reached out

1 and told me that that meant a lot to them. So again, thank
2 you Commissioners Douglas and Monahan.

3 And then the second item that I wanted to talk to
4 you about was -- next slide -- we did a survey related to
5 business meetings in order to help improve our
6 participation and engagement. We had about 78
7 participants. And I want to also inform the audience that
8 we still have that survey available if they want to
9 participate. And really quickly wanted to show some
10 results. So next slide.

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

15 We asked about their reasons for joining. Most
16 attend for work, you know 63 percent there. But there are
17 also others who indicated they also feel passionate and see
18 the direct impacts of those, 42 percent who marked all of
19 the above. Next slide.

20 We asked about their preferences on how to join.
21 And I want to highlight this one, because Zoom stood out as
22 one that they really appreciate, even more so over in-
23 person. And a good majority also indicated that they
24 prefer multiple options to join us, so I think going into
25 our new building we will have really good AV and different

1 ways for people to join. Next slide.

2 And then we also asked about their ease to
3 participate. And I was really happy that most people
4 indicate that it is easy to participate in our business
5 meetings. And a few indicated there might be some
6 improvement needed in terms of getting material and
7 whatnot. Next slide.

8 So here are some just key takeaways. We should
9 continue in enabling various ways to join as mentioned,
10 including Zoom. Potentially when we're back in person and
11 it's all safe, maybe we can do some of our meetings in the
12 communities too, as another way to bring the meetings
13 closer to the community. And then we should also determine
14 additional ways for the public to access meeting material.
15 That was one of the indicators there, which I'll be
16 thinking about.

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

20 And that concludes my report, Chair. Thank you
21 so much.

22 CHAIR HOCHSCHILD: Thank you so much, Noemi.
23 You know, you do such an amazing job just keeping all the
24 trains running. And also, I know I speak for all my
25 colleagues when I say just our culture has really been

1 enhanced by all of the energy you put into these wonderful
2 staff events. And not to mention the Clean Energy Hall of
3 Fame, and so thank you for all you do.

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

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

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

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

18 MS. GALLARDO: Okay.

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

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

25 CHAIR HOCHSCHILD: Okay let's move on to Item 19,

1 Chief Counsel's Report.

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

4 CHAIR HOCHSCHILD: Okay, thank you.

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

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

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

11 MS. GALLARDO: Hello, this is Noemi Gallardo, the
12 Public Advisor, wanting to speak to attendees if you're on
13 the line to let you know, we are in a break. Again, the
14 California Energy Commission is taking a break during its
15 March 17 Business Meeting. We will resume out 1:00 p.m.
16 Thank you so much for your patience.

17 [The break message repeats several times.]

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

20 MS. GALLARDO: Yes, we are. You may begin,
21 Chair.

22 CHAIR HOCHSCHILD: Okay. Well, first of all
23 Commissioner Monahan, we missed you in the beginning
24 meeting because you were in the legislative hearing. But
25 Happy St. Patrick's Day to you. It's nice to have a

1 holiday named after you and I wanted to wish you a Happy
2 St. Patty's Day.

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

8 MR. RILLERA: Good morning Chair and
9 Commissioners. My name is Larry Rillera, staff with the
10 Fuels and Transportation Division. I am here to present
11 Item Number 7.

12 This is a proposed \$1.5 million augmentation
13 agreement with Cerritos Community College District. The
14 Clean Transportation Program targets investment in the
15 development, deployment, and scaling of zero-emission
16 vehicles or ZEVs and ZEV infrastructure. To date, the
17 Clean Transportation Program has invested over \$35 million
18 in the workforce portfolio. Next slide, please.

19 The benefits of the project includes building on
20 investments for career transportation pathways, preparing
21 and developing the next generation of ZEV workers, and
22 enhancing automotive and truck skills. Next slide, please.

23 The proposed item before you today builds on an
24 existing and successful investment and partnership with
25 high school career technical education automotive programs.

1 Specifically, this proposed agreement would add \$1.5
2 million to this existing investment and extend the term of
3 the agreement by 24 months.

4 Cerritos College would modify a training program
5 to support additional high schools. The new schools would
6 include light-duty maintenance, automotive classes and new
7 ZEV truck curriculum and classes as well. The agreement
8 also requires an evaluation of high schools that have
9 received buses from the Energy Commission's School Bus
10 Replacement Program. In this way, the high school programs
11 can learn from their fleet technicians on the electric
12 school bus service and maintenance that will also lead to
13 good jobs within their communities. Next slide, please.

14 The response and results of the program to date
15 have been tremendous. Twenty-eight high schools have been
16 funded to date; 19 of the 28 schools have reported over
17 1,800 students have been enrolled in this class. The
18 project is a triple bottom line winner in that the
19 investment is targeted to frontline and equity communities
20 where these schools exist. Automotive programs offer good
21 job prospects as dealerships are partners. And lastly, the
22 location of nearby community colleges increases the
23 likelihood of securing a degree and attainment of a livable
24 and sustainable wage. Next slide, please.

25 In closing, staff recommends approval of this

1 agreement with Cerritos Community College District for \$1.5
2 million and approval of staff's determination that the
3 project is exempt from CEQA.

4 This concludes my presentation. Thank you for
5 your consideration of this item.

6 CHAIR HOCHSCHILD: Thank you, Larry.

7 Madam Public Advisor, any public comments on Item
8 7?

9 MS. GALLARDO: This is Noemi Gallardo, Public
10 Advisor, and yes, we do have a comment for Item 7. So this
11 is Pablo, and Pablo we are going to open up your line. A
12 reminder to please spell your name and also indicate your
13 affiliation. You have three minutes. Your line is open,
14 please begin.

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

17 CHAIR HOCHSCHILD: We can hear you, yes.

18 MS. GALLARDO: Yes, we can.

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

22 We know that the CEC is doing a great job to take
23 the initiative to grow and increase clean transportation to
24 (indiscernible) in the advanced transportation and
25 logistics sector of California Community Colleges,

1 particularly with the Cerritos Community College.

2 We understand this Community college is qualified
3 to increase workforce interest for clean transportation
4 through hands-on training, with its advanced vehicle
5 technologies. But we wonder if the CEC has already
6 established a system where the relevant business sector and
7 the workforce development training providers can come
8 together on a regular basis to discuss comprehensive gap
9 analyses when it comes to clean transportation workforce
10 training.

11 We think this is necessary to keep the zero
12 emission vehicle workforce development program relevant.
13 We would like to see if there is a formal process already
14 in place to facilitate the continuing critical dialogue
15 between industry players and the workforce developers.

16 A marketplace and workforce training program will
17 definitely promote the state's transition to clean energy
18 and transportation and provide more opportunities for our
19 underrepresented communities. Thank you very much.

20 MS. GALLARDO: Thank you.

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

22 CHAIR HOCHSCHILD: Okay, thank you for that
23 comment. Let's move on to Commissioner discussion,
24 Commissioner Monahan?

25 BOARD MEMBER MONAHAN: I actually am curious,

1 Larry, the question that came up around is there a forum
2 for workforce, for having a conversation between the
3 technology providers and the workforce. I mean we do --
4 just to respond quickly, we do have through the Clean
5 Transportation Program Advisory Committee, we have
6 discussions about workforce and there is representation
7 from the manufacturing community. But I'm curious, is
8 there any other forum for that that you know of, Larry?

9 MR. RILLERA: Yes. Thank you, Commissioner.
10 There are regional apparatus's and institutions such as
11 LACI (phonetic) in Southern California, others in the
12 Central Valley and some in the Bay Area. Where they have a
13 little more focused industry discussions with workforce
14 partners and their transportation career pathway, whether
15 it's high schools or colleges or even non-high schools.
16 And certainly partnerships with a state agencies as well
17 that are facilitating these conversations.

18 Pablo's comment is (indiscernible) when you start
19 to look at the various segments. He mentioned
20 manufacturing with Acterra, but certainly there's others
21 all along the product development continuum including
22 service and replacement where these conversations are
23 taking place.

24 BOARD MEMBER MONAHAN: Thank you. Well, I
25 strongly support this grant and I really want to commend

1 Larry for his leadership in this space. And I think he's
2 really trying to connect all the dots. I love that it
3 connects to the school bus program as well, one of our
4 personal favorites.

5 And we want to make sure that we have a workforce
6 trained up and that we support economic development and
7 disadvantaged communities. And this program really does
8 connect the dots, so I strongly support it and hope all of
9 you do as well.

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

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

15 CHAIR HOCHSCHILD: Seven.

16 BOARD MEMBER MONAHAN: Item 7, thank you. I move
17 approval of Item 7.

18 CHAIR HOCHSCHILD: Commissioner Gunda, would you
19 be willing to second?

20 BOARD MEMBER GUNDA: Yes, I second that.

21 CHAIR HOCHSCHILD: All in favor say aye.
22 Commissioner Monahan?

23 BOARD MEMBER MONAHAN: Aye.

24 CHAIR HOCHSCHILD: Commissioner Gunda?

25 BOARD MEMBER GUNDA: Aye.

1 CHAIR HOCHSCHILD: Commissioner McAllister?

2 Commissioner McAllister, you're on mute.

3 BOARD MEMBER MCALLISTER: Sorry, I was double
4 muted, 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.

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

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

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

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

18 CHAIR HOCHSCHILD: Sure.

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

22 ABDEL: Hello, can you hear me?

23 CHAIR HOCHSCHILD: We can hear you.

24 MS. GALLARDO: Yes.

25 ABDEL: My name is Abdel, Alpha-bravo-delta-echo-

1 lima. So I'm a Bay Area Resident and a student at Cañada
2 College. On behalf of my community. We urge the CEC to
3 mandate all new buildings to be electric. Many cities have
4 already taken action and it's time for the CEC to take a
5 step further (indiscernible) an all-electric baseline for
6 new construction in the 2022 Building Code.

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

15 It can also be dangerous to children who when
16 exposed to elevated levels of NO2 are more susceptible to
17 lung disease and allergies.

18 Finally low-income families, especially ones
19 living in small apartment buildings with slow ventilation
20 are especially at risk.

21 Similarly, my community and others around
22 California need to transition to zero emission buildings
23 ensures the state needs its current climate goals. All-
24 electric buildings are not only better for the environment,
25 they are often cheaper. Based on research done by Rocky

1 Mountain Institute for the City of Oakland it is estimated
2 to cost between 2,400 and 2,700 more per home to install
3 two separate systems than it would just to install a single
4 heat pump.

5 Further, the CEC presented information indicating
6 that the 2022 Code that the baseline would require one
7 electric appliance per residential building depending on
8 the climate zone. While this is a push in the right
9 direction, we need further action to incentivize homeowners
10 towards all-electric appliances.

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

16 And finally, according to the 2017 American
17 housing survey 40 percent of new homes in the nation are
18 built with electric heat pump installs. And California is
19 lagging behind at only 8 percent. Other countries have
20 also taken action. France released that it will require
21 all-electric space heating in single-family homes starting
22 in 2021. Also 39 cities in California have updated their
23 Building Code to become greenhouse gas free.

24 Now, the CEC needs to take it a step further and
25 set an all-electric baseline for new construction in the

1 Building Code. Thank you.

2 CHAIR HOCHSCHILD: Thank you. We have one
3 additional comment?

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

7 MR. JAKTAR: Hi there.

8 MS. GALLARDO: I'll spotlight him.

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

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

11 MS. GALLARDO: Yes, we can.

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

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

22 And at the Workforce Board we're are all about
23 quality: quality jobs, quality training opportunities. And
24 so it was really excellent to see an emphasis in the report
25 on high-quality job creation, and of course workforce

1 development tied to good jobs.

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

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

19 And then, what I think is probably a little less
20 known is our High-Road Training Partnership Program, which
21 is the same model of workforce development, but in sectors
22 outside of construction. And the lines are starting to get
23 a little blurred, but I just want to mention that we are
24 awarding funding to projects that are addressing offshore
25 wind, building decarbonization, energy storage and micro

1 grids and more.

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

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

17 CHAIR HOCHSCHILD: Thank you.

18 Madam Public Advisor, any further public
19 comments?

20 MS. GALLARDO: This is Noemi, the Public Advisor,
21 no additional comments.

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

24 MR. KOZUCH: Good Afternoon Chair and
25 Commissioners. My name is Matthew Kozuch, staff with the

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

8 \$17 million in funds is currently available to
9 design and implement this medium- and heavy-duty block
10 grant project. With additional funds up to a total of \$50
11 million to be added at future dates for similar activities,
12 subject to future appropriations and Clean Transportation
13 Program Investment Plan funding allocations. The CEC may
14 add funds in the future beyond the \$50 million to conduct
15 additional similar activities. Next slide, please.

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

24 The agreement is designed to speed up the
25 deployment and installations of medium- and heavy-duty

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

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

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

25 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

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

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

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

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

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

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

22 CHAIR HOCHSCHILD: We can hear you.

23 MR. VAN AMBURG: Thank you very much. I am Bill
24 Van Amburg, V-a-n A-m-b-u-r-g, Executive Vice President
25 here at CALSTART. And Chair Hochschild and Lead

1 Commissioner Monahan, Commissioners and staff we really
2 first want to deeply thank you for the trust that you've
3 shown in selecting CALSTART for this critically important
4 project and the responsibility that goes with it.

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

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

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

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

1 to help them most.

2 We would like to add that the Energy Commission
3 is one of the key and early signatories to the global
4 commercial vehicle drive to zero programming. One of the
5 key tenants of that global program is to set in place the
6 necessary policies, incentives and investments to support
7 commercial zero emission vehicles moving the scale.

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

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

16 CHAIR HOCHSCHILD: Thank you. Any other
17 comments?

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

19 CHAIR HOCHSCHILD: Let's go to Commissioner
20 discussion, Commissioner Monahan?

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

25 And you know that really builds on the flagship

1 CALeVIP program for light-duty charging infrastructure.
2 Now we're turning our sights to heavy-duty infrastructure.
3 And as we all know heavy-duty vehicles are major polluters,
4 especially when it comes to toxic diesel exhaust and smog
5 forming nitrogen oxide. So it really tackles a critical
6 public health issue.

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

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

20 CHAIR HOCHSCHILD: Thank you, Commissioner.

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

23 BOARD MEMBER MONAHAN: Yes, I move this item
24 okay.

25 CHAIR HOCHSCHILD: Okay. Is there a second?

1 Commissioner McAllister, would you be willing to second?

2 BOARD MEMBER MCALLISTER: I'll second.

3 (Sound interrupts meeting briefly).

4 CHAIR HOCHSCHILD: All in favor say aye.

5 Commissioner Monahan?

6 BOARD MEMBER MONAHAN: Aye.

7 CHAIR HOCHSCHILD: Commissioner McAllister?

8 BOARD MEMBER MCALLISTER: Aye.

9 CHAIR HOCHSCHILD: Commissioner Douglas?

10 BOARD MEMBER DOUGLAS: Aye.

11 CHAIR HOCHSCHILD: Commissioner Gunda?

12 BOARD MEMBER GUNDA: Aye.

13 CHAIR HOCHSCHILD: And I say "aye" as well. That

14 item passes unanimously. Let's move on to Item 10,

15 Electric Vehicle Ready Communities Phase II.

16 BOARD MEMBER MONAHAN: And I have to recuse

17 myself from Item a.

18 CHAIR HOCHSCHILD: Okay, why don't you stand up.

19 And then Noemi will notify --

20 BOARD MEMBER MONAHAN: Can I say why I have to

21 recuse myself?

22 CHAIR HOCHSCHILD: Good, yes.

23 BOARD MEMBER MONAHAN: I'm recusing myself on the

24 proposed award to the City of Sacramento, which includes a

25 sub-award to the University of California Davis for

1 transportation studies. I'm on the Board of Advisors for
2 the ITS, UC DAVIS ITS Program. In that role I do not make
3 governance decisions on behalf of the institute. We are
4 there to provide guidance and oversight for the program and
5 it's four branches.

6 I don't get any compensation in any form
7 including reimbursements or per diem for expenses. So
8 there's no financial interests in which there would be a
9 conflict of interest under the Public Reform Act or
10 Government Code Section 1090. But just in an abundance of
11 caution I am recusing myself to avoid any perception of a
12 conflict of interest.

13 So I will step away, thank you.

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

16 MS. PUREWAL: Good afternoon, Commissioners. My
17 name is Sharon Purewal and I am a staff member in the Fuels
18 & Transportation Division's Advanced Vehicle &
19 Infrastructure Office.

20 Today staff is seeking approval of two agreements
21 awarded under the Electric Vehicle, or EV, Ready
22 Communities Challenge Phase II - Blueprint Implementation.
23 The purpose of this solicitation was to fund projects
24 developed and identified in Phase I, which was to develop
25 EV Blueprints. Funding is provided through the Clean

1 Transportation Program. Next slide, please.

2 The benefits to California are to improve
3 accessibility to charging infrastructure, to accelerate the
4 goals to increase California's zero-emission vehicle
5 infrastructure, to reduce barriers to those living in
6 disadvantaged communities as defined by CalEnviroScreen 3.0
7 including in the cities of Richmond, Concord, and Pittsburg
8 under the Contra Costa Transportation Authority; and in
9 disadvantaged communities in the City of Sacramento.

10 EV workforce training components in both of these
11 proposed agreements will support green job creation and
12 green job accessibility in the regions mentioned above.

13 Next slide, please.

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

23 Through this project, the City of Sacramento will
24 be engaging with the California Conservation Corps for EV
25 job training and to further electric vehicle charging

1 installation support. And will also focus on establishing
2 more meaningful relationships with the community members to
3 increase EV education, awareness, to involve more community
4 input and to advancing the electric vehicle charging
5 infrastructure goals in this region. Next slide, please.

6 Next we have Contra Costa Transportation
7 Authority. Their project objectives include installing
8 electric vehicle charging stations at sites in the cities
9 of Richmond, Concord, and Pittsburg. Contra Costa
10 Transportation Authority also plans to create workforce
11 development programs to support those who live, work, and
12 play in the surrounding area.

13 To further support green workforce development
14 opportunities the Contra Costa Transportation Authority
15 will coordinate training for local residents, mainly in
16 areas considered disadvantaged communities, to repair and
17 maintain electric vehicle charging infrastructure. They
18 also aim to establish an EV car share program. Next slide,
19 please.

20 Staff recommends approval of the proposed
21 agreements with Contra Costa Transportation Authority, for
22 just under \$2.5 million, and the City of Sacramento, for
23 just under \$1.9 million. Staff also recommends adoption of
24 staff's determination that these projects are exempt from
25 CEQA.

1 And with that, I would like to thank you for your
2 time and consideration of these items. I am available for
3 any questions you may have. I also believe Peter Engel,
4 from Contra Costa Transportation Authority and Cory Irish,
5 California Energy Commission attorney consulting in these
6 agreement developments are also available for comments or
7 to answer any questions that you may have.

8 And that concludes my presentation. Thank you.

9 CHAIR HOCHSCHILD: Thank you, Sharon. Good work.
10 Any public comment on Item 10?

11 MS. GALLARDO: This is Noemi Gallardo, the Public
12 Advisor. Yes, we do have someone on the Verizon line,
13 Peter from the Energy Authority. Peter, a reminder to
14 please spell your name and indicate your affiliation.
15 Peter, your line is open, you may begin.

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

20 Our Phase I project of doing our countywide
21 blueprint really helped us kick off our EV program in
22 Contra Costa County. Our Board, has this year taken an
23 approach to highly prioritize one of our top three projects
24 over the next few years is to advance the adoption of zero
25 emission vehicles, both light and heavy-duty in our county.

1 And this will take a major bite for us out of light-duty
2 infrastructure needs.

3 Also, focused on as Sharon mentioned,
4 disadvantaged communities within our county, both in West
5 County in Richmond and Central County in Concord and in
6 East County in the City of Pittsburgh, to provide some
7 workforce training through nonprofit vocational schools
8 that are highly supported by the cities that they work
9 within.

10 The Phase I Blueprint Project allowed us to
11 develop some great partnerships within our county and we're
12 using those partnerships in this implementation phase.
13 Both with the cities and with MCE, which is our Community
14 Choice Aggregation to help to the installation of EVSE in
15 the county.

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

19 MS. GALLARDO: Thank you.

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

25 "Thank you for your leadership and commitment to

1 advancing electrification. We wish to commend the
2 Commission and your staff for advancing the state's clean
3 mobility vision. And thank you for the second award for
4 Sacramento's EV efforts.

5 "First, I want to emphasize that continued state
6 funding and incentives are both critical to equip local
7 agencies as partners for delivering our shared and
8 ambitious zero emission transportation goals. Sacramento's
9 Phase I Blueprint Award was an important step for
10 accelerating our work. We are very excited to launch Phase
11 II and provide lessons and models that your agency can
12 scale across the state.

13 "Lastly, I want to applaud and acknowledge the
14 hard work by your staff to continue improving the
15 Commission's grants and loans processes. I must note that
16 even we, at the City of Sacramento have found these to be
17 challenging and time intensive. I say this, even with our
18 agency's extensive grant experience in transportation
19 funding, in which we average about \$42 million in grants
20 per year.

21 "I encourage you to continue prioritizing your
22 staff efforts to simplify processes and better engage
23 applicants and awardees. This is important not just for
24 cities like Sacramento, but also for the broader range of
25 stakeholders not yet participating in these programs.

1 Procedures should address the needs of those with the
2 biggest barriers to participate. In this way, all of us
3 can benefit.”

4 CHAIR HOCHSCHILD: Okay. We’ll take these up in
5 two separate votes. Any discussion among Commissioners on
6 Item 10a?

7 (No audible response.)

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

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

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

14 BOARD MEMBER DOUGLAS: Second.

15 CHAIR HOCHSCHILD: All in favor say aye,
16 Commissioner Gunda?

17 BOARD MEMBER GUNDA: Aye.

18 CHAIR HOCHSCHILD: Commissioner Douglas?

19 BOARD MEMBER DOUGLAS: Aye.

20 CHAIR HOCHSCHILD: Commissioner McAllister?

21 BOARD MEMBER MCALLISTER: Aye.

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

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

24 Let’s welcome Commission Monahan back and take up
25 discussion of Item 10b, Contra Costa Transportation

1 Authority. Commissioner Monahan, do you have any comments
2 you'd like to offer on that item?

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

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

7 So I just wanted to comment that I appreciated
8 the comments from the City of Sacramento around the need to
9 make these processes simpler for folks to apply. So I know
10 the team at the Energy Commission is thinking hard about
11 that, and we want to continue to make progress. So I just
12 appreciate that feedback.

13 I will also say, you know, this is a
14 continuation. So this is to implement blueprints and we've
15 heard loud and clear from our Clean Transportation Program
16 Advisory Committee that it's really important to engage the
17 community in plans. Not just fund willy nilly, but fund
18 according to what the mobility needs are of the city. So I
19 really look forward to seeing how these grants play out in
20 terms of increased mobility, especially for lower-income
21 families.

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

25 CHAIR HOCHSCHILD: Well, there's agreement to

1 that. Unless there's other Commissioner comments,
2 Commissioner Monahan, are you willing to move Item 10b?

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

4 CHAIR HOCHSCHILD: Commissioner McAllister, would
5 you be willing to second?

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

7 CHAIR HOCHSCHILD: All in favor say aye,
8 Commissioner Monahan?

9 BOARD MEMBER MONAHAN: Aye.

10 CHAIR HOCHSCHILD: Commissioner McAllister?

11 BOARD MEMBER MCALLISTER: Aye.

12 CHAIR HOCHSCHILD: Commissioner Douglas?

13 BOARD MEMBER DOUGLAS: Aye.

14 CHAIR HOCHSCHILD: Commissioner Gunda?

15 BOARD MEMBER GUNDA: Aye.

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

17 Item 10b passes unanimously. Let's move on to Item 11,
18 Integrated Energy Policy Report.

19 MR. ORTA: Good afternoon, Chair Hochschild and
20 Commissioners. My name is Jason Orta and I'm the Energy
21 Commission's Lead Hydraulic Modeler for Gas Infrastructure.
22 Today, staff is seeking adoption of the Natural Gas Demand
23 and Rate Forecasting Forms and Instructions. Next slide,
24 please.

25 The information requested on these forms and the

1 subsequent analysis will increase the CEC's knowledge of
2 the gas system- particularly trends and drivers of demand
3 and rates. This enhanced knowledge will improve the quality
4 of the CEC staff's gas demand forecasts. Next slide,
5 please.

6 We developed these forms in consultation with the
7 gas utilities, and that the collaboration on this front
8 will continue during and after submittal of these forms.
9 In developing them, we avoided "reinventing the wheel" by
10 modeling them after the CEC's electricity demand forms and
11 instructions while leveraging current utility analysis that
12 goes into the California Gas Report. Next slide, please.

13 Information requested on these forms includes
14 utility demand forecasts out to 2035, forecasting inputs
15 and instructions, demand impacts of building
16 electrification, projected injections of renewable gas and
17 hydrogen, demand response, and other measures. Other
18 things that we request are projected revenue needs and
19 infrastructure information. Next slide, please.

20 The breadth and depth of information requested in
21 these forms will inform the CEC's work in the years to come
22 as staff develops a greater understanding of gas use in
23 California. Staff will continue to support the gas
24 utilities as they complete and submit these filings while
25 using this insight to improve the quality of our work.

1 Before I conclude this presentation, I'd like to
2 thank the California gas utilities PG&E, SoCalGas and
3 SDG&E. We've had two webinars and accepted some written
4 comments during this process, and they have been very
5 helpful.

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

10 CHAIR HOCHSCHILD: Thank you.

11 Any public comment on Item 11?

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

14 CHAIR HOCHSCHILD: Okay, let's go Commissioner
15 discussion starting with Commissioner McAllister.

16 BOARD MEMBER MCALLISTER: Yeah. So thanks,
17 Jason, for that presentation. I'm really looking forward
18 to sort of being a little more rigorous on this front as we
19 go forward with this IEPR Update and full forecast right,
20 this is odd year. Odd in the number sense. And so we're
21 doing a full forecast and we really are taking advantage of
22 the opportunity to build capacity and information or
23 informational base going forward. You know, long term
24 we're going to need that during the transition to zero
25 carbon resources. And the interplay between electricity

1 and gas is really becoming something that's supremely
2 important, so we really want to have balance across those
3 two major fuels.

4 So I really appreciate all the collaboration that
5 Jason expressed in, and these resources will help us get
6 the information right form and in a systematic and
7 consistent way. So with that, I think I'll pass the mic to
8 Commissioner Gunda, who I'll be working with on this over
9 the IEPR Forecast period.

10 BOARD MEMBER GUNDA: Actually, thank you
11 Commissioner McAllister. I apologize again for the tree-
12 cutting in the background, as it comes and goes. But
13 Jason, thank you so much for your leadership on this. And
14 the entire team, yourself, Melissa Jones, Jennifer and our
15 support from Aspen in terms of Katie. And the working
16 group work that you're all going into in terms of
17 developing the necessary relationships to put this forward
18 and gather this information to really improve the rigor of
19 our natural gas forecast.

20 And the demand scenarios and different hydraulic
21 modeling that you're doing, is extremely beneficial, as we
22 think through the long-term clean energy future of the
23 state.

24 And Commissioner McAllister noted, this year's
25 IEPR will have a little bit more sharpening of our

1 analytical tools. And figuring out how best to think
2 through gas demand and scenarios. And I really appreciate
3 the entire team's work and particularly Jason, in your
4 approach, which is always respectful and rigorous. And I
5 appreciate your collaboration with the gas utilities, as we
6 all are in this together and need to go to a common point
7 in the future. Thank you.

8 CHAIR HOCHSCHILD: Thank you.

9 Unless there's other Commissioner comments,
10 Commissioner McAllister, would you be willing to move Item
11 11?

12 BOARD MEMBER MCALLISTER: I move Item 11.

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

15 BOARD MEMBER GUNDA: I second that.

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 Monahan?

22 BOARD MEMBER MONAHAN: Aye.

23 CHAIR HOCHSCHILD: Commissioner Douglas?

24 BOARD MEMBER DOUGLAS: Aye.

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

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

2 MS. RAITT: Good afternoon, Commissioners. I'm
3 Heather Raitt, Assistant Executive Director for Policy
4 Development and the Program Manager for the 2021 Integrated
5 Energy Policy Report, or the 2021 IEPR for short. Next
6 slide, please.

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

18 Commissioner Andrew McAllister is the lead
19 Commissioner for the 2021 IEPR. He issued the scoping
20 order for the report yesterday, identifying the topics and
21 general schedule for this proceeding. The 2021 IEPR will
22 address four major topics. The first, energy reliability
23 over the next five years. Second, natural gas outlook and
24 assessments. Three, building decarbonization and energy
25 efficiency and fourth, the energy demand.

1 Commissioner McAllister also will lead the
2 analysis of building decarbonization and energy efficiency.
3 Commissioner Siva Gunda will lead the analysis of energy
4 reliability, natural gas, and the demand forecast in the
5 2021 IEPR.

6 Commissioner Patty Monahan will lead the analysis
7 of the benefits of transitioning to a clean transportation
8 system. Next slide, please.

9 So to recap, I'd like to request your approval of
10 this order instituting informational proceeding for the
11 2021 IEPR. Lisa DeCarlo from the Legal Office is available
12 to help answer any questions. Thank you for your
13 consideration, that concludes my presentation.

14 CHAIR HOCHSCHILD: Thanks so much, Heather.

15 Madam Public Advisor, is there any public comment
16 on Item 12?

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

19 CHAIR HOCHSCHILD: Thank you.

20 All right, let's go to discussion. Commissioner
21 McAllister?

22 BOARD MEMBER MCALLISTER: Yeah, this is a real
23 changing of the guard, I think, on the IEPR front. It was
24 where there's some -- well the previous item, and this
25 item, and the next item are all about IEPR topics. So I'm

1 happy to take the baton from a Commission Monahan, who led
2 it led the IEPR Update last year, so.

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

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

19 And so I want to thank -- so the development of
20 this scope has really I think required us all to put our
21 thinking caps on in terms of what topics are appropriately
22 in it this year, how we bound those topics. And how the
23 various topics interrelate. So I want to thank Heather
24 first of all for your persistence and lots of iterations of
25 this scope as we get it right and get public comment. And

1 your whole team, you have been invaluable in shepherding
2 this process.

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

8 And during the course of this, we have a new
9 Commissioner and we'll be sharing this with Commissioner
10 Gunda, who will be sharing a lot of these topics and
11 conversations around the forecast and around really all the
12 topics.

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

18 And so I think the high-level message is given
19 this integration that's happening across all sectors of our
20 economy really, certainly all set of our energy economy
21 including transportation, including you know bulk power and
22 wholesale issues, load flexibility, demand response. The
23 underpinnings of reliability in the forecasts will be going
24 out 15 years instead of 10 years this year to kind of align
25 with the 2035 goals that we have in the state.

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

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

23 And yeah, so I guess I won't get into the
24 particular topics, but certainly I'll just say briefly on
25 the building decarb piece of this that we envision that

1 topic as being relatively broad and forward thinking around
2 building decarb. As opposed to the specific Title 24
3 Update that we're involved in now.

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

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

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

24 CHAIR HOCHSCHILD: Well, let's go to Commissioner
25 Gunda for any other comments on this.

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

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

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

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

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

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

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

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

1 forward to it and prioritizing it this you know this, this
2 coming year as well.

3 CHAIR HOCHSCHILD: Thank you so much,
4 Commissioner.

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

15 With that I would entertain a motion from
16 Commissioner McAllister.

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

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

21 BOARD MEMBER GUNDA: Absolutely Chair, I second
22 the item.

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

25 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 move on to Item 13,
9 the 2020 IEPR Update.

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

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

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

25 Under the leadership of Commissioner Patty

1 Monahan, the 2020 IEPR Update is comprised of three
2 volumes.

3 Volume I puts forward recommendations to advance
4 California's clean transportation future, with benefits for
5 all Californians. It is the focus of the 2020 IEPR Update.

6 Volume II is on microgrids, and is not being
7 presented today. It is on a separate schedule for a later
8 business meeting.

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

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

17 An errata to make clarifications and to make
18 edits in response to comments was posted yesterday.
19 Commissioners, you have a copy of the errata and it is
20 available on the Energy Commission's website.

21 The 2020 IEPR Update draws upon the technical
22 expertise and creative thinking of dozens of experts who
23 participated in workshops to gather information. We held
24 nine workshops on transportation and two on the forecast.
25 Under Commissioner Monahan's direction, the workshops

1 emphasized equity and opportunities for public engagement.

2 And now it's my pleasure to introduce Quentin
3 Gee, the lead staff for the transportation volume, titled,
4 "Blue Skies, Clean Transportation." Next slide, please.
5 Go ahead, Quentin.

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

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

18 Here we can see that residents in lower income
19 communities as well, face high transportation pollution
20 impacts. Air pollution does spread around a bit, but here
21 you can see that transportation pollution impacts tend to
22 be felt more by those with less of a voice. With these
23 equity factors in mind, one of the key recommendations of
24 the IEPR Update is that California must do more to engage
25 and understand the local mobility and clean air needs of

1 low-income and disadvantaged communities throughout the
2 state. And tailor state programs appropriately to meet
3 those needs. Next slide.

4 There's another interesting trend in
5 transportation. Californians are buying larger, heavier
6 vehicles. One important thing to consider about this is
7 that while of course heavier cars on average have higher
8 greenhouse gas emissions per mile driven, the emissions
9 associated with powering battery electric vehicles just are
10 not as sensitive to the vehicle's weight. On average, a
11 heavier combustion vehicle has an additional 115 grams of
12 CO2 per mile, while a heavier battery electric vehicle only
13 has about 27 grams more CO2 per mile, and gets cleaner as
14 the grid does.

15 So one of the key takeaways here is that to
16 achieve the target of 100 percent zero emission passenger
17 vehicle sales by 2035, the state needs to ensure that there
18 is a full range of zero emission vehicle or ZEV models to
19 meet consumer preferences especially for SUVs, minivans,
20 and pickups.

21 Now, someone with a keen eye might point out that
22 the percentage gain in emissions per mile is greater for
23 battery electric vehicles. This has more to do with the
24 small number of battery electric vehicles in the weight
25 ranges presented here. But looking at all the vehicle data,

1 combustion vehicles increase their emissions as their
2 weight goes up at a rate that is six times greater than
3 battery electric vehicles. To think about it another way,
4 a 6,000-pound Cadillac Escalade SUV is going to have more
5 tailpipe emissions per mile than the driving emissions from
6 a 30,000-pound battery electric bus powered by CA's
7 electricity grid. Next slide.

8 Here we have a chart showing the vehicle miles
9 traveled or VMT, of the Southern California region from
10 January to August. Here you can see during the early
11 months of the COVID-19 crisis, VMT declined dramatically.
12 However, it bounced back within a few months to about 85
13 percent of what it was.

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

22 The three revolutions in transportation:
23 electrification, automation, and shared mobility services,
24 these are poised to dramatically change the way we think
25 about mobility. But we want to make sure this is done in a

1 way that aligns with our climate and equity goals.

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

9 Plug in vehicles, or PEVs, are the most common
10 Zero Emission Vehicle out there. California's climate
11 leadership here shines as well. You can see that we've had
12 a large increase in market penetration from 2017 to 2019.
13 However, you can also see here that China and Europe are
14 attempting to play catch up. California's light-duty ZEV
15 market penetration needs to go from 7.7 percent in 2019 to
16 100 percent in 2035, so we've got a lot of work ahead of
17 us. Next slide.

18 The increasing market penetration we've seen with
19 PEVs is occurring mostly due to the large declines in
20 battery costs. Economies of scale and new battery
21 technologies are leading to fierce competition and
22 declining prices. Around 2023 or shortly after, analysts
23 expect the purchase price of PEVs to be competitive with
24 combustion vehicles. Combined with the fact that a PEV can
25 save drivers more than a thousand dollars per year in lower

1 fuel and maintenance costs compared to a combustion
2 vehicle, PEVs' lower costs will put billions more back into
3 the state's economy rather than spending it on foreign
4 oil." Next slide.

5 Although there's a lot of good news on PEV
6 prices, consumers are reluctant to shift to a new
7 technology unless it makes their lives better on many
8 fronts. So charging needs to be widespread and simple, if
9 not easier than fueling at gas stations. And that means a
10 lot of chargers.

11 On the first bar from the top we have 67,000
12 chargers currently installed, and below that another
13 121,000 additional planned through 2025. That leaves us
14 with a gap of about 62,000 chargers for our 2025 goal shown
15 on the middle bar. And five years out from there in 2030,
16 there's uncertainty about how many more chargers we need.
17 But in a vehicle scenario that smoothly gets us to 100
18 percent new ZEV sales by 2035, we would need to have about
19 8 million ZEVs and growing by the year 2030. So that will
20 require a lot of chargers, 1.5 million.

21 We can't do this only with public funding, so one
22 of the key IEPR recommendations here calls for the
23 evaluation of new regulatory and funding mechanisms to
24 further encourage private sector investments in the
25 charging infrastructure, the infrastructure we need to meet

1 demand. And we need to do this while ensuring low costs
2 for all Californians. Next slide.

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

9 But if we can get charging aligned with
10 renewables, there's great potential for reducing
11 electricity costs for all Californians. So we recommend
12 that the CEC collect data and do the analysis needed to
13 support charging infrastructure development that minimizes
14 costs and maximizes benefits to the grid. Next slide.

15 During the large-scale public safety power
16 shutoff events of 2019, Google search trends spiked for
17 search terms such as "backup generator" or "backup
18 battery." People were trying to find ways to make sure
19 they could keep the power on. And with ZEVs, there are
20 large amounts of energy available in a vehicle's battery or
21 hydrogen tanks in a fuel cell vehicle. And with the right
22 setup that energy can turn into electric power for backup.

23 Here we can see a CEC-funded school buses,
24 electric school buses, which are capable of integrating
25 with the grid and supplying auxiliary power to buildings.

1 We can also see power capacity being put on Ford's well-
2 known F-150, which was set to release an electric vehicle,
3 an electric version of the F-150 next year. ZEVs are
4 essentially distributed energy resources, and the IEPR
5 Update recommends working with the appropriate agencies to
6 support ZEVs in contributing to energy resiliency. Next
7 slide.

8 Finally, there's some good signals on the
9 hydrogen front. In particular, China, Japan, and Korea
10 have set aggressive targets for more fuel cell vehicles in
11 the next decade, with China aiming for 1 million fuel cell
12 EVs by 2030. Seeing additional leadership outside of
13 California suggests that economies of scale may allow fuel
14 cell costs to decline, and potentially electrolyzers that
15 can produce hydrogen fuel by using renewable energy. Next
16 slide.

17 A recent survey shows that three-quarters of
18 American drivers believe that electric vehicles are the
19 future of transportation. California has committed itself
20 to this zero-emissions vision, along with the benefits of
21 cleaner air, lower greenhouse gas emissions, and lower
22 transportation costs for the state's residents. And the
23 California Energy Commission will play a vital role in
24 setting the stage to make that happen.

25 So with that, I'll hand over to Nick Fugate to

1 discuss the Energy Demand Forecast.

2 MR. FUGATE: Thank you, Quinten. Can we have the
3 next slide, please? So Volume III focuses on the Energy
4 Commission's Electricity Demand Forecast Update. The
5 forecast is a critical planning tool, which lays the
6 foundation for electricity system planning efforts,
7 including transmission and distribution planning,
8 integrated resource planning, and resource adequacy. The
9 CEC's forecast ensures that these studies begin with
10 reasonable and commonly understood assumptions. Next
11 slide, please.

12 In January of 2020, the Energy Commission adopted
13 the IEPR 2019 Demand Forecast. And two months later, in
14 response to the COVID-19 pandemic, the California economy
15 took a sudden and unexpected downturn. These conditions
16 fell outside any of the scenarios considered in the adopted
17 forecast. The situation highlights the importance of
18 updating the Demand Forecast annually—so that when economic
19 conditions take an unexpected turn, planners are not
20 working with unrealistic projections.

21 The update described in Volume III is actually
22 our most ambitious to date. In addition to refreshed
23 economic outlooks, staff updated rate projections as well
24 as forecasts of PV, storage, and electric vehicle adoption.
25 It's worth noting that the adopted forecast is not a single

1 number, but a collection of projections with different
2 assumptions around economic outlook, efficiency uptake, and
3 weather conditions. Studies conducted by the CPUC and
4 California ISO each used a particular combination of
5 projections that suits the needs of that study.

6 Volume III contains an updated agreement between
7 staff at the CEC and CPUC as well as the California ISO's
8 leadership. This agreement, which we call the single
9 forecast set specifies a number of important forecast use
10 cases. And memorializes our common understanding around
11 which components of the forecast are used in each. Next
12 slide, please.

13 Our updated mid-baseline forecast of electricity
14 consumption, which is the total amount of electricity used
15 by customers declines in 2020 -- a response to the economic
16 downturn -- followed by a period of strong economic
17 recovery through 2024. And then settling into a long-term
18 annual growth of 1.1 percent annually.

19 Electric vehicle charging contributes
20 significantly to that growth, with on-road vehicle charging
21 representing a 4.5 percent of overall electricity
22 consumption in 2030

23 Our mid baseline sales forecast, which is the
24 amount of energy customers are expected to purchase from a
25 utility or other service provider, grows at a slower rate,

1 only half a percent. This is due to the significant
2 penetration of behind-the-meter resources, particularly PV
3 over the forecast period. By 2030, PV self-generation is
4 projected to meet 13 percent of total consumption.

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

10 Volume III also contains three exploratory
11 scenarios around electric vehicle charging and travel
12 patterns. The first studied the potential impacts of
13 charging the estimated number of medium and heavy-duty
14 zero-emission vehicles required to meet the South Coast Air
15 Basin's 2031 Ozone Standard. Staff found that this could
16 amount to an additional 1,700 GWh of consumption.

17 The second scenario examined the potential for
18 shifting EV charging patterns as a GHG reduction strategy.
19 This analysis found that moving flexible vehicle charging
20 to mid-day when grid emissions are lowest could save 0.4
21 million metric tons of CO₂, but would also increase system
22 peak load by nearly 700 MW. Also these results highlight
23 the importance of considering both grid conditions and GHG
24 emission intensity factors when using load shifting as a
25 carbon reduction strategy.

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

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

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

11 Before I close, I would like to just take a
12 moment to express my gratitude to some of the many talented
13 and dedicated staff who contributed to the report. On the
14 transportation volume, Quentin did an amazing job leading
15 the effort. And many others in FTD contributed including
16 Jane Berner, Michael Comiter, Jim McKinney, Tim Olson, Noel
17 Crisostomo, Tami Haas, Charles Smith and Hannon Rasool.

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

22 Last summer we transitioned to remote workshops.
23 Thank you to Noemi and the IT staff for their support in
24 doing so. And to Harrison Reynolds who was really
25 instrumental in our transition to remote workshops.

1 Harrison was our student assistant at the time, and
2 although we miss him I'm happy to report that he's now
3 staff with the R&D Division.

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

8 Finally, thank you, Commissioner Monahan and
9 Commissioner McAllister, for your leadership and support,
10 and also to your staff who helped us throughout.

11 So that concludes our presentation. Lisa DeCarlo
12 who has been a terrific support from the Legal Office is on
13 the line to help answer any questions. And again, staff
14 requests that you adopt Volumes I and III of the 2020 IEPR
15 Update, incorporating the changes detailed in the errata.
16 Thank you.

17 CHAIR HOCHSCHILD: Thank you so much, Heather and
18 team.

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

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

22 Kristian, we will open up your lines shortly. A
23 reminder to please spell your name and indicate your
24 affiliation. You have three minutes to speak your line is
25 open, please begin.

1 MR. CORBY: Good afternoon, Commissioners and
2 staff, my name is Kristian Corby and that's spelled K-r-i-
3 s-t-i-a-n and Corby is C-o-r-b-y. And I am the Deputy
4 Executive Director at the California Electric
5 Transportation Coalition and just have a few comments
6 today.

7 We'd like to really say we really support the
8 reports' focus on equity and the need to address soft costs
9 and public charging. And we appreciate the addition of the
10 RMI study into the section addressing soft costs and
11 charging.

12 The reports' discussion on equity is very
13 enlightening and important for how we can truly bring about
14 the benefits of zero emission transportation to all
15 Californians and especially the most vulnerable. The
16 impacts of COVID-19 have been devastating and exposes how
17 low income in minority communities are more vulnerable,
18 because of their exposure to air pollution from
19 transportation emissions. So again great focus on equity
20 and the need to address costs.

21 We support the recommendations made at the end of
22 Chapter 6, especially the recommendation to continue to
23 collaborate with the CPUC and California ISO. All of these
24 agencies are doing very important work on DGI. And to the
25 extent your efforts can be coordinated, there will be some

1 very great opportunities to take advantage of lessons
2 learned.

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

14 Finally, CalETC appreciates the amendments made
15 to the section describing the avoided cost of charging
16 concept, previously known as the Transportation
17 Electrification Regulatory Policies Act or TERPA. While
18 these amendments to the section help explain the concept,
19 we still do not understand how this concept will
20 effectively create access to affordable charging and
21 infrastructure. And believe that the complexity of the
22 concept could create barriers to access and increased
23 costs.

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

1 CHAIR HOCHSCHILD: Thank you.

2 Any further public comment, Madam Public Advisor?

3 MS. GALLARDO: That was the last comment for Item
4 13

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

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

17 So I'm going to focus on Volume I and
18 Commissioner McAllister, I'm sure is going to have some
19 great comments on Volume III. And I will also just want to
20 acknowledge Quentin's leadership on this. Quentin stepped
21 into the CEC, this is his first big project. He managed
22 the whole thing so ably, so thoughtfully. And all the team
23 members: Jim, Tim, James, Michael, Charles, Noel,
24 (phonetic) so many people that were involved in this IEPR.

25 But I have said to them, at the very beginning I

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

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

18 So Mindy and her team have put together a really
19 great handout that we can give. It's the Executive Summary
20 with beautiful graphics. And it really I think tell a
21 short and sweet story about the opportunity for California
22 to be a leader globally on zero emission transportation.

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

1 CHAIR HOCHSCHILD: All right. Thank you,
2 Commissioner.

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

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

10 And I liked how the transportation volume
11 highlights the synergies and opportunities between
12 transportation electrification and Lithium Valley and the
13 Salton Sea region, which is something that is huge
14 opportunity, I think, for the state.

15 And I really have enjoyed watching how
16 Commissioner Monahan has worked hard to think about and
17 reimagine how we can use Zoom meetings to maximize
18 engagement. It's not just about you know, finding another
19 way to do something, but really finding a way to make these
20 workshops better. And so we got great participation. I
21 think people really liked the format and will probably
22 continue using that format even when we don't have to, at
23 least for some of the IEPR workshops.

24 So anyway great job, and I look forward to
25 supporting this.

1 CHAIR HOCHSCHILD: Thank you.

2 Commissioner McAllister, were you going to make a
3 remark?

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

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

20 So on the forecast, I think well, just Nick and
21 Cary and the whole team, they do a great job. It's very
22 detailed work. And the assumptions really matter. They
23 sweat the details. They sweat the assumptions. They vet
24 everything. The workshops really reflect their incredible
25 due diligence.

1 And this year, the scenarios in particular I
2 think were valuable, because we had so much uncertainty,
3 right. And we think of what happened during the year of
4 this forecast.
5 And the, you know, we had COVID. We had incredible weather
6 events. We had incredible behavior change that is
7 reflected in loads in the electric sector and gas
8 consumption. And so really getting information together
9 and trying to pick that apart and running scenarios on it,
10 is really no mean feat. I mean it's difficult and they did
11 a really great job.

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

20 And I think it's an opportunity to include --
21 which, you know, Commissioner Monahan you and I always talk
22 about okay transportation buildings, you know how can we
23 sort of see them, both as a resource on the grid. And I
24 think this is a manifestation of that process. We're
25 starting to be able to do that, so I really want to in this

1 year's IEPR, in the 2021 IEPR, try to deepen that. And
2 work together on it as we consider sort of more flexibility
3 resources coming on or being accessible.

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

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

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

24 As you noted, Commissioner McAllister, there were
25 certain issues. But there were also issues that they had

1 to bake in as we went through with the root cause analysis
2 and calling for a more extreme forecast and how we do it,
3 you know, think about the uncertainties in climate as we
4 move forward.

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

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

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

25 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

1 the meeting

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

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

4 We've gone through everything.

5 CHAIR HOCHSCHILD: We're adjourned, thank you,
6 everybody. Have a good day.

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

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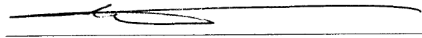
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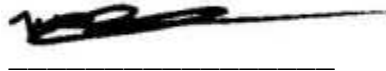
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