

DOCKETED

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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:)
) 22-BUSMTG-01
Business Meeting)
 _____)

WEDNESDAY, DECEMBER 14, 2022

10:00 A.M. - 3:30 P.M.

In-person at:
 California Natural Resources Agency Building
 715 P Street
 First Floor Auditorium
 Sacramento, California 95814
 (Wheelchair Accessible)

Remote Access Only via Zoom

Please note that the California Energy Commission (CEC) aims to begin the business meeting promptly at the start time and the end time is an estimate based on the agenda proposed. The meeting may end sooner or later than the time indicated depending on various factors.

Pursuant to the California Code of Regulations (CCR), title 20, section 1104(e), any person may make an 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 public comment portion of the meeting and have three minutes or less to comment.

Reported by:
 M. Nelson

APPEARANCES (*Present via Zoom)

Commissioners

David Hochschild, Chair
Siva Gunda, Vice Chair
Andrew McAllister
Patty Monahan
Kourtney Vaccaro

Staff Present:

Drew Bohan, Executive Director
Linda Barrera, Chief Counsel
Lorraine White, Standards Compliance
Mona Badie, Public Advisor
Dorothy Murimi, Public Advisor's Office

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

2 DECEMBER 14, 2022

10:04 a.m.

3 (Start of Introductory Video.)

4 MS. MURIMI: Welcome to the California Energy
5 Commission Business Meeting. Zoom's closed-captioning
6 feature has been enabled to make Energy Commission business
7 meetings more accessible. Attendees can use this feature
8 by clicking on the "Live Transcript" icon and then
9 selecting either "Show Subtitle" or "View Full Transcript."
10 Closed captioning can be stopped by closing out of the Live
11 Transcript or selecting "Hide Subtitle." Those
12 participating solely by phone do not have the option for
13 closed captioning.

14 The Energy Commission will continue to post a
15 recording of this business meeting on the Business Meeting
16 webpage in addition to posting a transcript of this
17 business meeting rendered by a professional court reporter
18 in the docket system on the business meeting webpage.

19 To increase access to the California Energy
20 Commission's proceeding, this meeting is being held in-
21 person and is also available for remote participation.

22 The public can participate in the business
23 meeting consistent with the instructions for remote
24 participation found in the notice for this meeting, and as
25 set forth on the agenda posted to the Energy Commission's

1 website. Pursuant to California Code of Regulations Title
2 20, section 1104(e) any person may make oral comments on
3 any agenda item.

4 Once the public comment period begins, to
5 indicate you would like to give a comment in-person please
6 use the QR codes shown in the room and fill out the form.

7 For remote participants, please raise your hand
8 by clicking on the "Raise Hand" icon at the bottom of your
9 screen. If you are joining by phone, press *9 to raise your
10 hand and *6 to unmute.

11 To ensure the orderly and fair conduct of
12 business, public comments will be limited to three minutes
13 or less per person for each agenda item voted on today.

14 Any person wishing to comment on information
15 items or reports, which are non-voting items shall reserve
16 their comment for the general public comment portion of the
17 meeting and shall have a total of three minutes or less to
18 state all remaining comments. After the Public Advisor
19 calls on you to speak, spell your name and state your
20 affiliation, if any.

21 Welcome to the California Energy Commission's
22 business meeting. The meeting will now begin.

23 (End of Introductory Video.)

24 CHAIR HOCHSCHILD: Good morning, friends. I'm
25 David Hochschild, and welcome to today's business meeting.

1 Today is Wednesday, December 14. I call this meeting to
2 order. Joining me are Vice Chair Gunda, Commissioner
3 Vaccaro, Commissioner McAllister, and Commissioner Monahan.
4 We do have a quorum.

5 Let's begin with the Pledge of Allegiance led by
6 Commissioner Monahan. Please stand.

7 (Whereupon the Pledge of Allegiance was recited.)

8 CHAIR HOCHSCHILD: Dorothy, can you hear me,
9 okay? This mic is not green. Is it okay?

10 MS. MURIMI: You need to bring it closer.

11 CHAIR HOCHSCHILD: Can you hear me, okay? It's
12 red for some reason.

13 MS. MURIMI: You sound great.

14 CHAIR HOCHSCHILD: Okay.

15 So let's turn now to Item 1, Agency
16 Announcements. I want to begin with just congratulating on
17 behalf of all of us at the Energy Commission, the winners
18 of the California Clean Energy Hall of Fame. We had a
19 wonderful ceremony here in this room last week. And
20 congratulations to Nalleli Cobo, Sean Armstrong, Dr.
21 Kedziora, Vice Chairwoman Turner, and Dr. Zabin.

22 And I want to thank our tele-presenters as well.
23 President Alice Reynolds from the PUC, Senator Chris Lee,
24 Secretary Yana Garcia, Brett Isaac from Navajo Power, and
25 Commissioner Monahan. Thank you.

1 It was a really special event. And actually,
2 Commissioner, I don't know if you want to add anything,
3 since you're over there.

4 COMMISSIONER MONAHAN: I just want to say that it
5 was a really heartwarming event. And I think there was
6 probably not a dry eye in the audience with some of the
7 videos. And so if you didn't see it, I would recommend
8 watching it. Really powerful and inspirational leaders.
9 Yeah.

10 CHAIR HOCHSCHILD: The videos of the winners are
11 going to be available. Nick already posted on the website.
12 The one winner who was not able to join us in person was
13 Nalleli Cobo who's a young woman from Southern California
14 who grew up adjacent to an oil drilling operation. The
15 fumes gave her asthma and then later, she developed cancer.
16 And she's dealing with that, and so unable to travel, but
17 has become a very powerful and effective advocate for
18 moving beyond oil and ending oil drilling adjacent to
19 residential communities. So it's really our honor to
20 celebrate her and all her colleagues.

21 So with that let's turn to Item 2.

22 Oh, sorry. I just did want to mention, today
23 we're going to be seeking to approve \$6.5 million in
24 investments today, and over 280 million for this year
25 contributed to our state's economic recovery. Yeah, so

1 thank you.

2 Item 6 has been pulled from the agenda. And
3 Consent Item 21 (sic) will be heard after Item 8. Thank
4 you, Commissioner.

5 So with that, let's turn to Item 2. So we'll
6 take up, it looks like Items 2a through 2h and Items 2j and
7 2k. So do we have any public comment on those items,
8 Dorothy?

9 MS. MURIMI: Thank you, Chair.

10 So for individuals who would like to make a
11 public comment if you're in the room, go ahead and use the
12 QR codes located in the back of the room. If you are on
13 Zoom, go ahead and utilize the raise hand feature. It
14 looks like an open palm. We'll give that one moment. (No
15 audible response.)

16 Seeing no public comment, Chair, I'll hand the
17 mic back to you.

18 CHAIR HOCHSCHILD: Okay, unless there's any
19 Commissioner discussion, I'd welcome a motion. Vice Chair
20 Gunda, would you be willing to move those items?

21 VICE CHAIR GUNDA: I move (indiscernible).

22 CHAIR HOCHSCHILD: Okay. And again these are
23 Items a through h and j through k.

24 And Commissioner Vaccaro, would you be willing to
25 second those?

1 COMMISSIONER VACCARO: Yes, second.

2 CHAIR HOCHSCHILD: Okay, all in favor say aye.

3 Vice Chair Gunda

4 VICE CHAIR GUNDA: Aye.

5 CHAIR HOCHSCHILD: Commissioner Vaccaro?

6 COMMISSIONER VACCARO: Aye.

7 CHAIR HOCHSCHILD: Commissioner McAllister?

8 COMMISSIONER MCALLISTER: Aye.

9 CHAIR HOCHSCHILD: Commissioner Monahan?

10 COMMISSIONER MONAHAN: Aye.

11 CHAIR HOCHSCHILD: And I vote aye as well. Those

12 items pass unanimously.

13 COMMISSIONER MONAHAN: I'm sorry. Chair, can I

14 interrupt for just one second?

15 CHAIR HOCHSCHILD: Yes.

16 COMMISSIONER MONAHAN: I'm having a hard time

17 hearing you, actually.

18 CHAIR HOCHSCHILD: So Dorothy, this light is not

19 green. So am I doing something --

20 COMMISSIONER MCALLISTER: The red is on, so it's

21 fine. So (indiscernible).

22 CHAIR HOCHSCHILD: So maybe it's my problem. I'm

23 not -- okay, it's my problem. Yeah. Okay sorry, I think

24 that's my fault. Can you hear me now, better?

25 COMMISSIONER MCALLISTER: Yeah.

1 CHAIR HOCHSCHILD: Okay. That's my fault. I
2 apologize.

3 So we'll turn now to Item 3, Information Item on
4 a New Approach to Forecast Clean Energy Technology. And I
5 want to thank Commissioner Rechtschaffen at the Public
6 Utilities Commission. He highlighted to me this remarkable
7 group and study. So I've asked them to come present and I
8 welcome Doyne Farmer to present.

9 MR. FARMER: Okay, should I just punch in?

10 CHAIR HOCHSCHILD: Yes, please, jump in.

11 MR. FARMER: Okay, let me -- oh, next slide
12 please.

13 So let me just begin by giving you guys -- oh,
14 wait, we went two slides. Let's go back one, please. And
15 let me fix my screen, because I'm not seeing everything
16 here. Oh, "view options," just a minute. Click the
17 window, okay. Good.

18 So let me just start out by giving you an overall
19 summary, because I don't want to take up too much of your
20 time. You know, energy makes 75 percent of greenhouse gas
21 emissions. And the conclusion of our study, which is based
22 on a lot of historical data for many technologies, is that
23 we can make the green energy transition quickly and at an
24 economic profit. To do this, we need to ramp up at least
25 wind, solar, batteries, hydrogen-based fuels at existing

13

1 rates -- that's existing exponential rates -- for another
2 decade or two. And I'll tell you more about this. And
3 I'll discuss a little bit about potential roadblocks that
4 might prevent this from happening. And I think making sure
5 this happens is vital to everything. Next slide.

6 And it helps to get a little bit of historical
7 perspective. So this slide documents the evolution of the
8 global energy landscape over the last two centuries, or the
9 last 140 years, excuse me. And so you can see on -- maybe
10 it's good to actually start at the slide on the right. You
11 see the production of technologies through time.

12 And so you can see we start out with a baseline.
13 The green line on top is traditional biomass. Then we see
14 coal taking off at about an 1880, surpassing traditional
15 biomass. We see the dashed black line and gray line are
16 oil and gas coming up.

17 And remember, this is a logarithmic scale, so
18 exponential increases look like straight lines.

19 We see nuclear power rising and then plateauing.

20 And then we see something that's pretty
21 remarkable. We see the blue line, which is wind
22 electricity; the orange line, which is solar electricity;
23 the green, which is hydrogen-based fuels; and the purple
24 line, which is batteries. All of them shooting up at very
25 rapid exponential rates. So they're increasing at an

1 unprecedented rate.

2 So move over to the slide on the other side. You
3 can ask about this one looks at costs, or in the case of
4 fossil fuels prices, because costs are all over the map.
5 And so you see the dashed brown line at the bottom is coal.
6 We're trying to put everything in the same units in terms
7 of cost. The black line is oil. And the gray line is gas.

8 So the conclusion is that for 140 years those,
9 they're volatile. They change, but if you fit a line
10 through them, they're all pretty flat. Maybe the price of
11 oil has gone up a little bit, but otherwise costs are flat
12 across 140 years.

13 In contrast look at the cost of solar energy,
14 which is the orange line you see coming down from the top.
15 Wind electricity, which is the blue line. Again, the green
16 is hydrogen-based fuels, and the purple is batteries.
17 Those are all coming down in cost at exponential rates.

18 And we're at a unique point in energy history
19 right now. Because as you can see there's a big traffic
20 jam, where there are lots of energy -- sources of energy
21 competing for dominance. And the question is how is that
22 going to resolve itself?

23 One thing you'll see right away, is you see why a
24 decade ago everybody was saying solar is way too expensive.
25 And now everybody's saying it's cheap. And the question

15

1 is, how much cheaper is it going to get? Next slide.

2 So what we did is developed the probabilistic
3 method for forecasting technology costs based on historical
4 data. We tested -- we developed a method, just it's a
5 bunch of equations, you don't need to know what they are.
6 We tested it by pretending to be in the past and making
7 forecasts for 50 different technologies. So for each
8 technology we had time series of their production through
9 time, and their costs through time, like you saw in the
10 previous panel. But we had that for lots of technologies,
11 most of which were not energy technologies.

12 But we were able to make 6,000 different
13 forecasts and test the method, not just for making the
14 forecast, but for predicting a priori, how accurate that
15 forecast was going to be. That is, having a probabilistic
16 method, so we could say what the likelihoods of different
17 outcomes are.

18 And so we took this and applied it to three
19 different technologies for the green energy transition,
20 ranging from not really making a transition, to a slow one,
21 to a fast one. Next slide.

22 And so let me just go over the fast transition
23 scenario, because that's the one that's going to be the
24 most controversial. The key technologies in our scenario
25 are solar photovoltaics, wind, batteries, and hydrogen-

1 based fuels. We extrapolate the deployment trends kind of
2 by eye, but we roughly construct scenarios where the
3 exponential rates of growth continue for a while and then
4 taper off. This scenario phases out fossil fuels almost
5 entirely over the next 25 years. And it heavily relies on
6 hydrogen-based fuels, both for energy storage and for hard
7 to decarbonize sectors like heat shipping, air transport.
8 And we assume that we make so much hydrogen-based fuel from
9 solar and wind as the original source, that we have enough
10 stored. So the whole world can run for a month without any
11 input from the sun. Or if the sun stops shining entirely,
12 if the wind stopped blowing, we could still run the whole
13 global energy economy for a month. Next slide.

14 Let me also say, so this shows the deployment
15 scenarios in more detail. And you can see the three
16 different -- so first of all, you see the overall
17 exponential behavior. The dashed red line corresponds to
18 an exponential, because when you plot a logarithm on the Y-
19 Axis, and time on the X-Axis, a straight line corresponds
20 to exponential growth. So you see the exponential growth,
21 the black dots are the historical values.

22 We assume that all of these technologies fall off
23 of their exponential growth path, but at different rates.
24 So the blue one is the fast transition. The orange one is
25 the slow renewable transition where we go on using gas for

1 a long time. And then the one below is what we're just
2 going to call no transition. Next slide.

3 So this shows the method of forecasting. And
4 again we don't need to bog down in the details here. But
5 we plot costs on the Y-Axis against cumulative production
6 of each technology, since its inception, on the Y-Axis.
7 And those are both logarithmic plots. So you'll see what,
8 to some approximation, are straight lines when you look at
9 the black dots. And we make our forecasts, and the little
10 marks there show the certainty of the forecast. That is,
11 it's the chance that things stay within those bands with a
12 95 percent likelihood.

13 And you can see that our forecasts are not bad.
14 That's in contrast to the forecasts other people have made.
15 But I don't want to go over time. Let me go to the next
16 slide. You can come back and ask me lots of questions if
17 you want.

18 The punchline is if we just do those things I
19 said -- and we looked at things -- also we factored in grid
20 costs. We factored in costs of replacing infrastructure.
21 We factored in lots of costs; we didn't just look at those
22 four technologies.

23 And so in the panel on the on the top, you see
24 under the three scenarios, so the kind of gray one is no
25 transition. The orange one is a slow transition. The teal

1 blue one is a fast transition.

2 So we look at the median fossil fuel
3 expenditures, which is shown in white. And the -- oh,
4 sorry, the non-fossil fuel expenditures are shown in white.
5 The fossil fuel expenditures are shown in color. And we
6 see as we go through time how we replace the existing
7 fossil fuel system by a green energy system.

8 We're looking at the expenditures. So yes, we're
9 spending a lot to put renewables in place. But we're not
10 making expenditures that we were making all the way along.
11 And the net effect is that things come out cheaper than
12 they were before. The reason they get cheaper is, even
13 though we do spend say a substantial amount upgrading the
14 grid, the electricity will be cheaper than it's ever been
15 as a result, by a significant factor.

16 The plots at the bottom show what happens if we
17 look at things in a net present value framework where we
18 assume a discount rate. And the plot over on the right
19 shows what happens to emissions. So you can see emissions
20 go virtually to zero from the energy sector. These are
21 global numbers by the way.

22 And in contrast the other ways of doing this are
23 considerably more expensive. The fast renewable transition
24 is on average \$12 trillion cheaper at net present value
25 terms, using a discount rate of one-and-a-half percent. We

19

1 show there how things change as a function of the discount
2 rate. And next slide.

3 I just want to point out that I did forecast 12
4 years ago that solar energy was going to get cheaper than
5 nuclear energy or coal. And that forecast turned out to be
6 right, even though at the time people thought that was a
7 crazy forecast. Next slide.

8 And this is just showing that other people who've
9 been doing this, like the International Energy Agency, have
10 consistently been making pessimistic forecasts about
11 renewables. They've been underestimating year after year,
12 what the deployment rates were going to be. They've been
13 underestimating what the cost declines were going to be
14 year after year. And so, we think our approach fixes that.
15 This goes into some details about what the problems were
16 their forecast have been. But that may not be your big
17 concern.

18 With that, I think I've used up my 10 minutes.
19 And I'll turn it over to you guys for questions.

20 CHAIR HOCHSCHILD: Well, thank you so much, Mr.
21 Farmer. And if I could paraphrase what I think your
22 message is, it's that asking how much the clean energy
23 transition will cost is the wrong question. The better
24 question is how much will it save?

25 And I will just share my experience coming to the

20

1 Energy Commission out of the solar industry. You know, it
2 was amazing to see the Energy Information Administration
3 and the International Energy Agency's projections were off,
4 not by little, but by an order of magnitude. I mean, they
5 really missed it. These are supposed to be the expert
6 agencies, and they were failing to capture what I call the
7 market transformation effect. Which is just when you get
8 industries to scale in a technology, you get really
9 significant cost reductions. And that's true, not just
10 with wind and solar, and batteries, and electric vehicles,
11 but also of cell phones and TVs. And somehow that wasn't
12 being captured. And so, I'm very grateful for your work
13 here.

14 Let me just open it up to my colleagues for any
15 questions. Commissioner McAllister, please go ahead.

16 COMMISSIONER MCALLISTER: Mr. Farmer, thank you
17 very much. I really appreciate the presentation.

18 I guess I'm just wondering, you know, in the
19 academic kind of world learning curves have been a thing
20 for a while. And there have been a number of academics
21 looking at applying learning curve-related theory to
22 different pieces of the clean energy transition. Greg
23 Nemet from UC Berkeley is one. Actually that's where he
24 did his grad work, and where I'm familiar with him and many
25 others.

1 Is there a sort of a consensus among -- I mean,
2 the challenges getting those sorts of approaches from the
3 academic world over into the practical policy world and so,
4 I really appreciate that you're bridging that. Is there
5 any vast disagreement or consensus? Or could you maybe
6 characterize the various approaches to applying learning
7 curve thinking to these clean energy technologies? And can
8 you sort of generalize or is there sort of a takeaway that
9 we can have for whether there's a developing consensus?

10 MR. FARMER: Yeah. So let me break your question
11 up into pieces. First of all, the thing that we added to
12 learning curves is to not just make a point forecast "this
13 will be the answer," but rather to make a probabilistic
14 forecast so we can assess the probabilities of different
15 outcomes. And testing it by making forecasts on past data.
16 That part had not been done. So I think that gives us a
17 lot more confidence that this really works, than we had
18 before.

19 The problem that happened unfortunately, is that
20 people kind of use learning curves. When I say "people," I
21 mean the IEA and most of the integrated assessment models
22 kind of use -- they did use learning curves, but they
23 didn't go all the way. They put brakes on them. So that
24 last slide I was showing you was an example of what are
25 called floor costs. So they said, "Well, we'll use

1 learning curves, but once solar gets this cheap, it's not
2 going to get any cheaper, so just assume a floor." So what
3 we showed in that plot was the sequences of a lot of floor
4 costs through time, showing that the past predictions of
5 floor costs are now invalid, because it's cheaper than the
6 floor cost they assumed.

7 Similarly, they assumed brakes on how fast solar
8 energy and wind and other technologies could be deployed.
9 And we haven't seen evidence for that. There may be some
10 limits. It may be that there's some limit above which you
11 just can't make that much in one year. But we don't know
12 what that is. And it's not clear there is really such a
13 limit.

14 Under our past scenario, we actually don't reach
15 peak deployment of solar energy until 2037, because it's an
16 exponential process. But the thing about exponential
17 processes is they travel under the radar for a long time.
18 And when they start moving, they get fast. So those are
19 the key things.

20 And I just wanted to correct one thing that the
21 Chairman said, "Not every industry gets cheaper when you
22 scale it up." That didn't happen with nuclear. It went
23 the other way, it got more expensive. It hasn't happened
24 with fossil fuels. As I showed, broader than 40 years,
25 they've been around the same price. In contrast, solar

1 energy has dropped by more than a factor of 5,000 since its
2 advent in 1958, for the Vanguard satellites. So it really
3 depends on which industry you're talking about how much
4 it's going to drop as it scales up. But we already have
5 good evidence that the four key technologies, as I
6 mentioned, are scaling in a way that suggests we're going
7 to keep getting cheaper for a while.

8 COMMISSIONER MCALLISTER: No, that's super
9 interesting. Thanks very much. And yeah, the declining
10 economies of scale in the traditional centralized
11 technologies, everybody assumed that you go to a gigawatt,
12 you go to two gigawatts, you know, central coal power
13 plants and it just gets cheaper and cheaper. And that
14 turned out not to be the case. So I think there's a lot of
15 food for thought going forward and continuing this work.
16 And maybe there are some inherent breaks on it that we
17 haven't figured out yet. But certainly, we want to address
18 those if they do come up. So thanks for your work. Really
19 appreciate it.

20 CHAIR HOCHSCHILD: Other questions, Commissioner
21 Gunda?

22 COMMISSIONER MONAHAN: Hey?

23 CHAIR HOCHSCHILD: Commissioner Monahan, yeah?
24 Please.

25 COMMISSIONER MONAHAN: I'm sorry is it "Dr."

1 "Mr." I want to --

2 MR. FARMER: Whatever you want. I mean, I'm not
3 a doctor. I'm a professor. I'm a person. Whatever you
4 want.

5 COMMISSIONER MONAHAN: I'm curious if you've done
6 a deep dive into transportation and specifically around --
7 all right, so batteries in the vehicle is one piece of the
8 cost equation. But there's also the different differential
9 in the cost of fuel. There's also building out
10 infrastructure. Have you done any deeper dive into the
11 transportation piece?

12 CHAIR HOCHSCHILD: We haven't done a really deep
13 dive. We've done a sort of a medium to shallow dive. And
14 I think just a few things we can point out, you know,
15 batteries have been the key limiting factor. So the fact
16 that batteries are coming down at rapidly, and we'll
17 probably keep doing that is the critical thing.

18 The infrastructure part, we think is a bit of a
19 nonstarter. Gas stations are replaced on average every 25
20 years. So we're already replacing gas stations all the
21 time. So it's just a matter that when a gas station would
22 go out it would be replaced we don't replace it with a gas
23 station, we replace it with a charging station. And that's
24 what we assumed in our fast transition scenario.

25 You know, between the fact that energy demand has

25

1 been growing at about 2 percent per year globally, for the
2 last 40 years, which we assume continues into the future,
3 and the fact that infrastructure is being rolled over all
4 the time. That provides an enough window, if we stay on
5 these exponential growth paths, to replace the
6 infrastructure without stranding huge amounts of assets.

7 Electric vehicles are -- one of the nice things
8 about that transformation is it's not radical in that it
9 doesn't really affect the way you drive. In fact, you
10 probably do less stupid driving. Where I live in the UK,
11 it's about -- believe it or not, there are places in
12 England where it's 10 miles to the next gas station. And
13 so I have to get in my car and drive to the gas station.
14 We won't have to do that, because we'll be charging our
15 cars at home. And we'll need charging stations instead of
16 gas stations. And I think that's about it. So it's not a
17 really radical transformation. Like some of the other ones
18 are going to be more radical, because with solar and wind,
19 we are going to need backup, which we think is going to
20 come from making ammonia-based fuels.

21 And so when the wind and sun are not blowing,
22 we'll need to turn on some turbans and make electricity the
23 old-fashioned way by burning ammonia instead of instead of
24 natural gas. So yeah and we'll be having ammonia moving
25 around in pipelines. We'll have ships going back and forth

1 across the ocean carrying ammonia or some other hydrogen-
2 based non-carbon emitting fuel. So I don't know if I
3 covered your question or not.

4 COMMISSIONER MONAHAN: Yes, thank you.

5 CHAIR HOCHSCHILD: I had one final question.
6 Again, let me just say I think this is a really bold
7 scholarship. And I just commend you and your team for
8 leaning into this. And I think the question in my mind is
9 what would we have done differently had these institutions:
10 the Energy Information Administration, the International
11 Energy Agency got it right 10 years ago, 20 years ago? And
12 I think the answer is we would have made much more
13 substantial investments. Because if you understand the
14 future of energy to be principally wind and solar and
15 renewables, you're going to make some adjustments in your
16 R&D strategy and your infrastructure investments, which
17 we're now calibrating to.

18 But I guess my question to you is since this
19 paper came out, are you seeing a reaction to it and any
20 observations about how these institutions are adjusting
21 their predictions now in light of what you put out?

22 MR. FARMER: Yeah, and actually this goes on to a
23 previous question I didn't really answer properly. I think
24 we are changing some minds. We've had very good press
25 response from this paper. But there are lots of people who

1 haven't changed their minds. ExxonMobil, I don't think
2 they've got it yet. We're doing another paper where we're
3 looking at energy company decision making and
4 profitability. And you know, we think that a lot of energy
5 companies are in danger of going out of business, because
6 they aren't making the pivot to green quickly enough.

7 There is not a consensus behind our paper in the
8 academic community. We got some pushback from other
9 fronts. But what you've seen over time, to amplify your
10 comment, is that the trend has been the forecasts were
11 dramatically wrong 20 years ago. They got better by 10
12 years ago, but still way off. Now they're better, but
13 they're still not in agreement with us. And, and of
14 course, we think we're right and they're wrong.

15 It's a game changer in that once you go, "Wow,
16 the energy transition is going to be profitable," then it
17 becomes a race to jump on the bandwagon and get there
18 first. You've seen this already with countries like
19 Denmark that have a substantial wind business, because they
20 were pioneers in manufacturing wind generators and putting
21 them up. So they created a business for themselves.

22 California -- and I'm speaking as I did spend 12
23 years living in California -- you guys are well positioned,
24 because you have been making the transition. And I think
25 you're positioning in California to be a big player.

1 Because you've got to get used to using it. The further
2 down the road you go, the more experience you have both as
3 consumers and producers, infrastructure. So you're just
4 positioned to be leaders. And I think that's really going
5 to be of great benefit over the next 25 years.

6 CHAIR HOCHSCHILD: Well, thank you so much,
7 Professor, we -- oh sorry, we do have one more question
8 from Vice Chair Gunda. Yeah, go ahead.

9 VICE CHAIR GUNDA: Hi, Dr. Farmer, thank you.
10 I'm still digesting your work, but thank you so much for
11 the presentation. Just a kind of high-level question and a
12 comment, I think I'll start with the comment first. Given
13 that we are going to do our next SB 100 report it would be
14 really helpful to have further conversations with your team
15 on characterizing the technology costs, which is such an
16 important input into framing of the solution. So I think
17 that'll be helpful. So I look forward to continuing to
18 work with you.

19 On the -- just kind of a foundational question
20 here. When you look at the modeling paradigm that you're
21 working here, how do you currently account for regulatory
22 and state investments, right? And then the interplay
23 between them and the overall learning curves? Are you
24 fundamentally looking at a time series with less of causal
25 factors? Or are you actually looking at the causal factors

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1 and its implications as well?

2 MR. FARMER: Well, there are causal factor
3 implications in that we assume that really the assumptions
4 are that deployment goes up at some rate. And there's
5 three different scenarios that we investigated here. We
6 think the fast transition scenario is most consistent with
7 past trends, which is encouraging.

8 But yes, what policymakers do is very important,
9 because it affects how much deployment happens. When more
10 deployment happens, there's more money on the table,
11 there's more research, there's more experience, costs tend
12 to go down. And so that's basically where how we're
13 analyzing policies here. Now, we're building other kinds
14 of models where we simulate the energy system, and where we
15 can put in policies very explicitly. And so we can test
16 different kinds of policies to see how effective they are.

17 So yeah, I think policy is really important and
18 maybe one other essential remark, I don't mean to imply
19 with what I've said in this presentation that this fast
20 transition is inevitable. It really does depend on certain
21 hurdles being met. The most important one is grid
22 development. We forecast that it takes a factor of about
23 4-fold increase in global grid capacity to achieve the
24 scenario that we're talking about. And a factor of 4-fold
25 increase in how much electricity is flowing through the

1 grid as we go along.

2 You know, my oldest son works for the Federal
3 Energy Regulation Commission. And he told me that they
4 have enough projects waiting for approval that they could
5 more than double the electrical supply in the United
6 States. And the thing that's holding that back is getting
7 them approved, so that they have a grid to be connected.

8 And there's a lot of political hurdles to making
9 that happen. So it's really essential that we start
10 developing that grid capacity now, and develop it rapidly
11 going forward, because we're really going to need it in the
12 future.

13 VICE CHAIR GUNDA: Yeah, Dr. Farmer, just as we
14 construct then the policy work that we do are we kind of
15 thinking -- look at scenario of a fast transition as kind
16 of an opportunity, and then look at the opportunity cost of
17 not doing that. Versus the kind of the regulatory and
18 policy levers that you require to accelerate the existing
19 market towards that? So I'm just kind of thinking through
20 how best to translate this into a policy framing that would
21 help the state, as a whole, in terms of both legislative
22 and policy as well as investment in opportunity.

23 MR. FARMER: Yeah, no I think you're right. It's
24 a matter of looking at the opportunity cost of not doing
25 it. And it is still -- let me actually make one other

1 remark. The grid is one key bottleneck. Another key
2 bottleneck potentially is storage, because wind and solar
3 are intermittent. And so you really need some kind of
4 storage. You can get some of it by transporting
5 electricity from one region to another. But at the end of
6 the day you'd like to have some storage, just to make sure.
7 And that technology is the least developed of these four
8 technologies I've talked about it. It's much further down
9 its learning curve.

10 And so I think we need to be doing everything we
11 can in the form of things like feed-in tariffs to encourage
12 that industry to develop. Because ultimately, we're going
13 to need facilities where we store fuel. We're going to
14 need plants that will make it. We're going to need
15 pipelines to transport it. We're going to need all those
16 things. And we need to really keep our foot on the gas to
17 develop that as much as possible.

18 Right now, hydrogen-based fuels, globally is
19 doubling in capacity every year. So it's 100 percent per
20 year increase. We really need to stay on that path for 15
21 to 20 years to make the scope.

22 Now, let me make one other comment, the scenario
23 we've thrown out we just did as a proof of principle.
24 We're not saying this is necessarily the cheapest way to
25 go. There may well be other ways that are cheaper. But we

1 did it just as a proof of principle, because for this
2 particular scenario we could cost everything. So we could
3 say, "If you policymakers can just keep us on this path for
4 another 15 to 20 years for hydrogen, for solar and wind
5 it's not even that long anymore. It's a decade or less.
6 And if you can just keep us on these paths then we're going
7 to experience some wonderful things."

8 And let me actually just conclude by saying the
9 five things. So cheap prices we've already said. Low
10 price volatility, fossil fuel prices as we're experiencing
11 right now with the war in Ukraine, are highly volatile.
12 And you see that comes through clearly in these past
13 graphs. Solar and wind are very steady, because the costs
14 are uniform. It's not like, petroleum can be produced for
15 \$2 a barrel in Saudi Arabia and 50 or 60 or more in Canada.

16 So we'll get rid of volatility. We get rid of
17 pollution. We get energy security. And we stop climate
18 change from going further. So we accomplish five different
19 goals at once by following this transition. But it really
20 is on the backs of policymakers to make sure that this
21 doesn't get stuck. And, you know, give it little pushes
22 when it needs to. Make sure the skids are all greased so,
23 everything can keep moving at an exponential rate.

24 CHAIR HOCHSCHILD: Yeah, well that sounds pretty
25 good to me and to all of us here.

1 Did you have one more?

2 VICE CHAIR GUNDA: Yes, okay in closing I'm just
3 thinking about -- (indiscernible) I think you just
4 reiterated the need for enabling actions by the
5 policymakers so, I really appreciate it. Thank you.

6 CHAIR HOCHSCHILD: Yeah. Thank you, Dr. Farmer,
7 to you and your team at Oxford for this remarkable work and
8 for sharing with us. Thanks for joining.

9 With that we will turn now to Item 4, Information
10 Item on Opportunities to Catalyze Private Investment in
11 Clean Technology. And welcome, Anthony Ng and some
12 students from UC Berkeley, some of whom I think I met when
13 I spoke at your class a few weeks ago. So thank you for
14 joining us. Anthony?

15 MR. NG: Great, yeah thank you, Chair. Good
16 morning Chair and Commissioners. Anthony Ng with the
17 Research and Development Division. So several months ago,
18 the CEC had a unique opportunity to partner with the UC
19 Berkeley School of Public -- or sorry, the Goldman School
20 of Public Policy -- to partner with their students who used
21 to research topics that were relevant to the work we do
22 here at the CEC. Of course R&D, we jumped at the
23 opportunity and we were fortunate to be paired with a great
24 student team who looked at a core question of how do we
25 catalyze greater amounts of private investments to support

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1 greater deployments of energy technologies.

2 As you know, within R&D, we support the
3 development and demonstration of a lot of technologies, but
4 we're going to need significant investments from the
5 private sector to really reach the scale and level of
6 deployments that we need.

7 So here to present the research, of the results
8 of their research, I'd like to introduce our great student
9 team: Joyce Wei, Kelly Varian and Will Toaspern.

10 MS. VARIAN: Hello. I'm Kelly Varian and I'm
11 happy to be here with Joyce Wei and Will Toaspern. As
12 Anthony mentioned, we're students at UC Berkeley and we've
13 had the privilege of working with the R&D team this fall.
14 Today we'll share the highlights of our research, but we've
15 also submitted a report if you'd like to go deeper or see
16 real world examples of some of the financial strategies
17 we're going to go over. Next slide, please.

18 So our research objective, as Anthony said, was
19 to look into how the Commission can catalyze private
20 investment in scaling and deploying clean tech, with policy
21 goals to decarbonize the state, stimulate economic
22 development, and advance equity. Next slide, please.

23 Our research methodology was to do a stakeholder
24 analysis to look at relevant literature, to interview
25 experts in the VC space, CEOs of clean energy tech

1 companies, and public servants in other states, then
2 finally do a policy analysis to make some recommendations.
3 Next slide, please.

4 So the CEC currently has several successful
5 programs in the early stages of product development, so we
6 focused on the later stages on the road to bankability.
7 And we'll be going through the six strategies that we come
8 up with later in the presentation. Next slide, please.

9 So we tested each mechanism with the following
10 criteria. So how vital is it for the CDC or a public
11 agency to step in? How effective is the strategy in
12 mobilizing private funds? How risky the strategy is from
13 the point of view the CEC? And can the mechanism help
14 assist in economic development, specifically in California.
15 And how the mechanism can help with equitable impact for
16 Californians. Next slide, please.

17 MR. TOASPERN: Okay, so the first strategy we
18 want to talk about is Predevelopment Funding. Pre-Dev
19 Funding refers to basically all the work that needs to
20 happen before the construction of an infrastructure or an
21 industrial project in a clean energy technologies
22 development. The CEC's role here would be to competitively
23 select clean energy projects, and then provide financial
24 support and technical assistance support. Financial
25 support coming through the grants' loans, loan guarantees,

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1 other mechanisms.

2 In analyzing this, we see the Predevelopment
3 really needs public intervention in a lot of cases, due to
4 the fact that it is oftentimes the highest risk phase of
5 project finance capital. And by helping to move projects
6 through this high-risk phase, a lot of private capital can
7 be mobilized to finance the rest of the project finance
8 capital stack, and really move to construction and start
9 putting Californians to work.

10 We believe there's an important implication here
11 with equity as well as Pre-Dev Funding has a lot of
12 influence over which projects go forward and where, which
13 can have a lot of influence the CEC can have over the
14 siting of clean energy projects.

15 MS. WEI: The next slide, please. Our second
16 strategy is what we're calling 1st Deployment Demonstration
17 Funding, so this is really focusing on testing and
18 demonstrating large scale production.

19 This requires a large capital outlay and comes
20 with a lot of uncertainty, so there's a lack of private
21 investment. So we see the CEC stepping in similar to what
22 they've done with the RAMP program. Coming in with a grant
23 and then having a similar equity match from the project
24 developer. This does mean higher risk and lower private
25 investment at this phase. However, a larger role can help

1 the CEC be more involved in domestic production and
2 ensuring equitable implementation. Next slide.

3 MR. TOASPERN: A Blended Fund model would look
4 like a private equity model that's used in a lot of
5 developing world contexts in which a public entity actually
6 provides first loss finance to capitalize a fund that goes
7 and invests in clean energy projects and technology
8 development. Likely the CEC would need to procure a third-
9 party manager to actually manage the fund and bring in the
10 other capital from private sources. But the CEC would have
11 some control over where investments are targeted
12 geographically, which tech sector etc.

13 The need for public intervention might not be as
14 high here, there is a lot of VC activity in this space,
15 although maybe not in the ways the CEC would potentially
16 prioritize. The mobilization potential of private capital
17 as high as you could capitalize with lots of other private
18 sources. And while the CEC takes high risk positions in
19 the fund different ideas about the risk of the portfolio
20 could be made. This might not create as much near-term job
21 creation, and equity would probably come through the
22 investment criteria that the CEC would set as one of the
23 main partners in the front. Next slide.

24 MS. WEI: So we've come up with a few loan
25 products that the CEC could get involved in: on-lending,

1 loan syndication, loan aggregation, loan guarantees. Not
2 necessarily for the CEC to offer but to get involved in and
3 help compliment ongoing programs.

4 In speaking with our expert interviews, we've
5 found that the clean energy tech space is dominated by VCs
6 and equity finance, and there's a lot of opportunity for
7 debt financing. So the CEC can help step in and provide
8 education on the loan process and debt financing, as well
9 as help streamline loan processes by helping to connect
10 borrowers and lenders and help with things like equity
11 assessments and the admin side of things. This would allow
12 for private investment to come in, which in turn would mean
13 lower risk for the CEC who wouldn't have to put in as much
14 money in funding these projects. And allows the CEC to set
15 equity requirements and help provide assistance on ensuring
16 economic development as well. Next slide.

17 MS. VARIAN: Okay. The fifth strategy we'd like
18 to recommend is Green Bonds. Green Bonds are debt
19 issuances for green projects that typically have tax
20 incentives for investors. And the California Treasurer's
21 Office is already creating a Green Bond Market. So we
22 believe that the CEC could support the launch of this
23 program and connect the Treasurer's Office staff with clean
24 energy products that are ready to scale.

25 There's of course, a need for government

1 intervention to find ways to finance public infrastructure,
2 and the Treasurer's Office projects this program will raise
3 billions. This would be at no risk to the CEC and presents
4 an opportunity to spur economic development and prioritize
5 infrastructure projects with equitable community benefit.
6 Next slide.

7 Finally, we believe that the CEC is uniquely
8 positioned to support the creation of, and take a leading
9 role in nonprofit run public-private coalitions. These
10 could accelerate the deployment of target clean energy
11 technologies such as energy storage. The coalition
12 organizers could convene members, offer knowledge sharing,
13 and provide financing and advocacy support.

14 We spoke to some folks at NYSERDA who said their
15 program NY-BEST has been very successful in accelerating
16 their battery industry. The CEC could also partner with
17 other state and federal agencies to leverage additional
18 public funds. This could include the Treasurer's
19 Office, like I mentioned, but also economic development
20 agencies at the state and federal level.

21 Public intervention would make sense, because the
22 private market is unlikely to create these coalitions.

23 And finally, these strategies also like many of
24 our others, create opportunities for equitable economic
25 development. Next slide.

1 MR. TOASPERN: Great, in the final minute here
2 we're just going to do a little bit of analysis and
3 recommendations.

4 So we just decided these are very different
5 strategies, so just sort of listed what are some of the top
6 strategies for each of the criteria we were looking at.
7 The need for public intervention -- we felt like Pre-Dev
8 Funding in public-private coalitions is a place where the
9 state would uniquely be able to take a role.

10 For mobilization potential, the Blended Fund in
11 particular could mobilize a lot of private capital very
12 quickly, as well as loan products.

13 Low risk, we feel that green bonds and loan
14 products, because the CEC would play more of an admin and
15 support role would probably have the lowest risk for the
16 CEC. We feel like first deployment demonstration projects
17 in green bonds have high impact to be able to put
18 Californians to work and create California economic
19 development.

20 And then from an equity standpoint we feel like
21 Pre-Dev Funding and public-private coalitions give the CEC
22 the most influence and potential to advance the goals that
23 are important to the agency. Next slide.

24 We know that there's a lot more to consider and
25 we really think that the CEC should consider sort of a

1 suite of strategies moving forward from what we've
2 presented today. So we presented some recommendations that
3 we feel like could sort of cut across all these strategies
4 and potential approaches.

5 First, sort of related to the last presentation,
6 really a focus on deployment. The technology exists to
7 make the clean energy transition and deploying it in
8 California is really the next and most important step.

9 We really feel that all these strategies should
10 be paired with technical assistance. And during our
11 conversations with people who have received CEC support,
12 that technical assistance was really valued.

13 We think equity incentives can and should be
14 embedded across these strategies and approaches to embed
15 advanced racial economic justice through the clean energy
16 transition.

17 And then finally, making sure that we're
18 complementing and leveraging other public programs that the
19 state is taking on, local governments are taking on, or for
20 instance, federal financing opportunities and maybe some
21 that come to the IRA.

22 We really hope that this report sort of starts as
23 a jumping off point for more conversations and
24 collaboration and coalition building to achieve these
25 important goals. And we really thank you all for the time.

1 CHAIR HOCHSCHILD: Well, thank you so much.
2 Before we move to questions I wondered, could each of you
3 just share a little bit about yourselves? Maybe where
4 you're from, what year in your program you are, and what
5 your area of interest is?

6 MS. VARIAN: Okay. Great, so as I said I'm Kelly
7 Varian. I'm a Master of Public Affairs student at the UC
8 Berkeley Goldman School of Public Policy. My background is
9 in strategy and management consulting, and I'm really
10 interested in getting involved with the clean energy
11 transition.

12 CHAIR HOCHSCHILD: And are you from California
13 or?

14 MS. VARIAN: I'm from California. Yes, I'm from
15 the Bay Area.

16 CHAIR HOCHSCHILD: Okay, great. Great.

17 MS. VARIAN: Thank you.

18 MS. WEI: I'm Joyce Wei. I'm a first year
19 Master's in Public Policy student. I grew up in the South
20 Bay. I spent some time working in the financial sector
21 doing commercial lending. And now I'm trying to use that
22 for good instead of helping rich people get loans.

23 MR. TOASPERN: My name is Will Toaspern and I'm a
24 first year MPP student. My dad's side of the family is
25 from the Bay, but I grew up in Denver.

1 My background is in an anti-poverty organizing
2 and community policy work. And so part of the reason for
3 coming to school is sort of to see how the clean energy
4 transition can most benefit communities that have been left
5 out of economic and racial justice.

6 CHAIR HOCHSCHILD: Great. Yeah, well thanks to
7 all three of you. We are hiring at the Energy Commission
8 and we're looking for superstars like you guys. We are
9 actually going to be adding about 220 positions over the
10 next year or so. So Drew, go get these guys.

11 Let me open it up for any questions. Yeah,
12 Commissioner Vaccaro, please.

13 COMMISSIONER VACCARO: So first of all thank you
14 so much for the presentation, and just the thoughtfulness
15 and the breadth of the work. I love to see this, because I
16 think when people who aren't part of our organization are
17 looking at it from a distance right, that's where we see
18 things. And so really appreciate what you've presented.

19 I'm the Attorney Member of the Commission. So I
20 tend to listen and hear things like this and listen for the
21 legal frameworks, right? And so I'm just wondering -- and
22 I didn't read your report -- so it could be in your report
23 and so that's my caveat. So if you're like, "Silly lady,
24 it's already there," I didn't read it. But I'm wondering,
25 do you look at where the California Constitution, or where

1 any statutes come into play, for how we implement some of
2 this? Or what we might need to look at policy from a
3 different perspective. What laws, what regulations, what
4 types of action do we need to put structure around this, so
5 that we might actually be able to achieve it? Whether it's
6 the Energy Commission or another state agency.

7 Because I appreciate you starting the
8 conversation with it's not necessarily the Energy
9 Commission, you're really looking at where state agencies
10 and where the state could be involved. So I'm just
11 wondering if there's any intersection and what you looked
12 at, and sort of the legal framework as well. Or if that's
13 still a place where Energy Commission can pick up and maybe
14 start looking at that and thinking about those things.

15 MS. VARIAN: I can just quickly say that I think
16 that would be an excellent next step. That was not a
17 primary focus of our research.

18 MR. TOASPERN: I do think we did look at sort of
19 other best-case examples in which other state governments
20 were able to do this. So it is in the realm of
21 possibilities.

22 I think just narrowing in on one piece,
23 specifically, would be the ability for the CEC to get
24 returns on some of these investments, and what kind of
25 mechanisms would need to be set up to make that happen. I

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1 think we believe that the ability to get a revolving loan
2 fund of some type in any of these strategies really would
3 increase the potential for mobilization. It increases your
4 impact. I think that, specifically is an area where more
5 legal analysis would need to be done on can the CEC do
6 that? Or would it look like some partnership with, for
7 instance, in the Blended Fund a third-party manager. Or
8 with the iBank or Treasurer's Office somewhere else, to be
9 able to set up those financial mechanisms for that loan
10 type of vehicle.

11 COMMISSIONER VACCARO: Great, thank you.

12 CHAIR HOCHSCHILD: Yeah, Vice Chair Gunda?

13 VICE CHAIR GUNDA: I just wanted to say thank you
14 so much. First of all, thanks to our R&D team for hosting
15 you all, for the work that you all did, it was really
16 helpful. I think every time we have a presentation like
17 this it just gives a fresh perspective, or look back on
18 what we're doing.

19 So I think one specific question, I really liked
20 how you characterized the CEC's investment vehicles and
21 then the different programs. You can kind of answer this
22 or we can talk later, but one of the things that CEC has
23 been given more and more money over the last few budget
24 cycles is really kind of scaling the demonstrations and
25 accelerating, right? So we have this billion-dollar fund

1 that we're trying to put some contours around on how to
2 spend, to really scale and potentially get into the
3 bankability stage that you guys talked about.

4 So I think my broad question is, when we talk
5 about technology investments one thing that I didn't
6 necessarily see here is what Dr. Farmer said in the
7 previous one. And we've been thinking about the state's
8 investment opportunity in enabling an ecosystem, right? So
9 where do you capture that? For example, whether the state
10 takes a broad role in developing transmission in the state
11 right, or providing a large amount of interconnection
12 opportunity, or even resources for work like that. Where
13 do you guys see that falling in the kind of work you do and
14 any thoughts on that would be helpful. Or we can talk
15 later, but thank you.

16 MR. TOASPERN: I think that's really where the
17 state, as a state entity rather than say specifically a
18 private profit-seeking entity can set directionality for a
19 lot of the investment. Whereas there is a lot of private
20 capital flowing into this space, but it's probably going to
21 the places where profit is highest. I think, as these
22 mechanisms are developed, and then redeveloped, in sort of
23 that policy feedback loop that happens with a procurement
24 process or whatever kind of mechanism would happen for that
25 money to go out, the CEC could be making more strategic

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1 sector or geographic or type of technology criteria, using
2 the same mechanisms that we put forth. That can kind of go
3 into the regulatory structure and updatable regulatory
4 structure of the different mechanisms. That would
5 influence directionally where that private capital then
6 flows.

7 I think that that might be kind of a general.
8 But that was kind of the way we were thinking about it, in
9 terms of the CEC having that kind of global view of the
10 ecosystem, that private investors might not have or be
11 thinking in those ways.

12 VICE CHAIR GUNDA: Great, thank you so much. And
13 as the Chair mentioned, I look forward to you guys working
14 at CEC.

15 CHAIR HOCHSCHILD: Any other questions?

16 COMMISSIONER MCALLISTER: Yeah. I just wanted to
17 say thanks. I think the Goldman School has a really
18 important role in UC Berkeley, across all the all the
19 divisions and departments across UC Berkeley, and just the
20 collaborative nature. And the fact that a lot of the
21 traditional discipline departments are realizing over time,
22 as they should, that there's a heavy policy component to
23 the kind of work they do. And I think really that
24 integrative work that the Goldman School has cultivated,
25 and some of the professors, the practitioners that they've

1 managed to bring on the faculty, have been -- you know,
2 Robert Reich, for example, and just others that have this
3 deep, practical, grounding is just invaluable for the whole
4 community.

5 I did my graduate work in Berkeley and took
6 several policy classes, and they just really enriched my
7 life. And I got a lot of respect for sort of that track as
8 a way -- you know, you kind of all have had careers doing
9 specific work. And I think that Goldman overlay is going
10 to serve you right as professionals and move you forward
11 your careers, and also really valuable for the Energy
12 Commission when you come work for us.

13 So thanks for the work, and then obviously a
14 great object lesson of that value we just heard about.
15 Thanks for bringing your brains to this, and you and all
16 your colleagues. Thank you.

17 CHAIR HOCHSCHILD: Yeah. And I agree with my
18 colleagues and will just share that for me the energy field
19 has been an incredibly rewarding career, because it touches
20 everything. It's at the heart of what we need to do to
21 address climate change, but also the equity issues. And
22 that's really at the heart of our strategy and I think the
23 state strategy is really lifting the communities that have
24 been hit hardest by pollution as we transition to clean
25 energy. So I wish you guys well and thank you again for

1 this fresh thinking, much appreciated.

2 Thank you, Anthony.

3 So with that we'll turn now to Item 5, the 2022-
4 2023 Investment Plan Update for the Clean Transportation
5 Program. Welcome, Patrick Brecht.

6 COMMISSIONER MCALLISTER: Actually, just to add
7 on that last item, just thanks to Anthony and the team for
8 cultivating that work. I think really thanks a lot for
9 bringing that forward and working with the students to
10 bring that to us.

11 CHAIR HOCHSCHILD: We've had a great relationship
12 with Stanford, so it's nice to see Cal in the house.

13 COMMISSIONER MCALLISTER: Our Legal CCO also
14 periodically works with USD Law School to do some legal
15 content there, and so Commissioner Vaccaro is aware of
16 that. We have such an incredible state with all these
17 wonderful, incredible schools. And it's great to have
18 access to that, so we want to keep that up.

19 CHAIR HOCHSCHILD: Good point.

20 Thank you, Anthony.

21 MR. NG: Yeah.

22 CHAIR HOCHSCHILD: Patrick, good morning.

23 MR. BRECHT: Good morning. It's not fair that I
24 have to follow Oxford and Berkeley.

25

1 Good morning Chair, Vice Chair, and
2 Commissioners, my name is Patrick Brecht. I'm the project
3 manager for the 2022-2023 Investment Plan Update for the
4 Clean Transportation Program.

5 Today, we are seeking your approval of the
6 Investment Plan Update, which includes proposed funding
7 allocations for fiscal year 2022-2023 and planned funding
8 allocations for the subsequent fiscal years.

9 If approved, the current Lead Commissioner Report
10 version, originally published on November 29, will be
11 reissued as a Final Commission Report. Next slide.

12 Now the transportation sector is responsible for
13 approximately 50 percent of statewide greenhouse gas
14 emissions and significant degradation of public health and
15 environmental quality due to air and water pollution.
16 Reducing air pollution from transportation is critical to
17 achieving a more environmentally just society, given that
18 air quality burdens fall disproportionately on vulnerable
19 and disadvantaged communities.

20 In order to reduce negative impacts to public
21 health and the environment to meet emission reduction
22 goals, the Clean Transportation Program, which provides
23 investments that enable a cleaner, healthier transportation
24 system was established by California Assembly Bill 118 in
25 2007. The Program is funded through a small surcharge on

1 California vehicle registrations and provides up to \$100
2 million per year.

3 The program, and the consistent 100 million
4 investment that it provides is scheduled to expire at the
5 end of 2023 unless extended by the Legislature. Next
6 slide.

7 Now in the fourteenth year, the Clean
8 Transportation Program has provided over \$1 billion in
9 funding for a broad spectrum of zero-emission vehicles and
10 infrastructure, alternative fuels and technologies and
11 workforce development projects. And as you can see from
12 this slide, there's a very broad spectrum of projects that
13 we've had. Next slide.

14 Now this slide shows key outcomes from the
15 program through Spring 2022. The program has also been an
16 essential part in making California a leader in near- and
17 zero-emission transportation.

18 The program has funded over 17,000 installed or
19 planned chargers for plug-in electric vehicles sufficient
20 to meet the 2025 250,000 goal.

21 It created innovative and efficient block grants
22 for both light-duty and medium heavy-duty ZEV
23 infrastructure.

24 It funded 86 regional readiness planning grants,
25 regional readiness implementation grants, and medium- and

1 heavy-duty ZEV blueprint grants for communities and fleets
2 that are ramping up for the adoption of ZEV technologies.

3 We've also supported the largest network of
4 hydrogen fuel stations in the nation, with 153 funded and
5 planned to fund hydrogen-fueling stations. Of these
6 stations, 13 will accommodate medium- and heavy-duty
7 vehicles as well as passenger vehicles. Sufficient funding
8 to reach 2025 200 Hydrogen stations.

9 It funded 27 manufacturing projects supporting
10 in-state economic growth while reducing the supply-side
11 barriers for ZEVs, ZEV components.

12 The program has created workforce training for
13 more than 22,000 trainees and 277 businesses.

14 It launched 71 projects to promote the production
15 of sustainable, low-carbon alternative fuels in California,
16 with a cumulative annual production capacity equivalent to
17 more than 158 million gallons of diesel fuel.

18 Additionally, the program has leveraged more than
19 \$730 million private and other public funds. Next slide.

20 The Clean Transportation Program has already
21 provided significant benefits to California and positioned
22 the state as a leader in zero emission transportation.

23 These achievements benefit Californians by reducing
24 greenhouse gas and emissions and improving air quality,
25 reducing dependence on petroleum, and supporting economic

1 and workforce development.

2 The program also leverages private and other
3 public funds, which means that we're using Clean
4 Transportation Program funds wisely.

5 Investments made through the Clean Transportation
6 Program and General Funds provided through recent budget
7 acts are foundational to meeting the state's ambitious
8 policy goals. Next slide.

9 Now I'd like to discuss what the program's
10 Investment Plan Update, what the program Investment Plan
11 is, and how it was developed.

12 Each year since the fiscal year 2020-2021, the
13 CEC has prepared a multi-year Investment Plan that presents
14 anticipated allocations for future fiscal years. The
15 Investment Plan identifies funding allocations for general
16 categories as opposed to individual projects. Projects
17 funded by the Program must be consistent with the
18 priorities identified in the Investment Plan.

19 Specifically, the Investment Plan identifies how
20 each fiscal years' funds will be allocated across different
21 fuels, vehicle sectors, and supporting activities such as
22 workforce development. The Investment Plan also describes
23 potential allocations for future fiscal years to provide
24 greater visibility and improve planning.

25 The allocations reflect consideration of state

1 and federal policies and regulations. As well as
2 coordination with state agencies, such as the California
3 Air Resources Board and the California Public Utilities
4 Commission, the California State Transportation Agency, and
5 the Governor's Office of Business and Economic Development.
6 Next slide.

7 This Investment Plan was developed through a
8 rigorous public process that included workshops and review
9 of formal comments.

10 This Investment Plan benefitted tremendously from
11 guidance from the Clean Transportation Program Advisory
12 Committee, which was expanded in 2020 to better reflect
13 California communities, including environmental justice
14 communities, public health organizations, rural and tribal
15 communities, labor and workforce training groups.

16 Additionally, the CEC staff consulted with the
17 Disadvantaged Communities Advisory Group for guidance and
18 recommendations on how to improve program effectiveness as
19 it relates to disadvantaged communities and other
20 vulnerable and underrepresented groups.

21 The CEC revised and developed the Investment Plan
22 update based on the feedback received and will also use
23 this input to inform future solicitations. Next slide.

24 The program continually works to increase the
25 participation of --

1 COMMISSIONER MONAHAN: Hang on for one second, I
2 think we have a slide -- oh, there we go.

3 MR. BRECHT: I'm sorry. Next slide. Yeah.
4 There we go, very good.

5 The program continually works to increase the
6 participation of and bring benefits to disadvantaged and
7 underrepresented communities across a diverse range of
8 geographical regions. The CEC also seeks to effectively
9 engage communities disproportionately burdened by pollution
10 and improve economic resiliency, including rural and tribal
11 communities.

12 This Investment Plan seeks to provide more than
13 50 percent of funds to projects that benefit low-income and
14 disadvantaged communities.

15 Consulting with the CEC's Public Advisor's
16 Office, Tribal Program and the Tribal Lead Commissioner for
17 assistance with outreach and promotion of transportation-
18 related funding opportunities to tribes.

19 Staff is planning a public process to define,
20 measure, track, and target more community benefits. And
21 this process will explore community benefits that go beyond
22 project location and GHG reductions, such as health,
23 mobility options, economic, and more. The first public
24 workshop for community benefits was held on November 29.
25 Next slide.

1 This Investment Plan Update proposes historic
2 investments across a range of zero emission vehicle fuels,
3 technologies, and supporting activities such as
4 manufacturing and workforce development.

5 This graphic provides a visual of total funding
6 of approximately \$2.9 billion for Fiscal Years 22/23
7 through 25/26. These investments reflect both one-time
8 general funds from the State Budget Acts of 2021 and 2022
9 as well as Clean Transportation Program funds.

10 And I should not that General fund allocations
11 are prescriptive and cannot be modified, where as the Clean
12 Transportation Program can.

13 The investments are in addition and complementary
14 to federal investments through the National Electric
15 Vehicle Infrastructure or NEVI program, of which
16 California's allocation is expected to be \$384 million.

17 Next I'll describe some of the proposed
18 investments in each of these categories. Next slide.

19 The Investment Plan Update allocates just over
20 \$900 million to support light-duty passenger EV charging.
21 This includes \$299 million of General Funds for equitable
22 at-home charging for multifamily residents and priority
23 communities, including rural areas that have limited access
24 to charging infrastructure.

25 The program's original funds will provide \$30.1

1 million in the current fiscal year and \$13.8 million in the
2 remaining half fiscal year, which along with last year's
3 cumulative investment of \$270.1 million, should be
4 sufficient to meet the state's goal of having 250,000
5 chargers by 2025.

6 Additionally, General Funds provide \$558.5
7 million over the next four fiscal years to build out a
8 broad network of grid-integrated, high-powered fast
9 chargers to support travel across the state and to
10 supplement federal NEVI funding for corridor fast charging.

11 In the current fiscal year, the Investment Plan
12 identifies more than \$30 million from Program funds and
13 \$237 million of general funds for light-duty EV charging
14 infrastructure. Next slide.

15 The Investment Plan allocates \$1.7 billion for
16 medium and heavy-duty ZEV infrastructure—which includes
17 both hydrogen refueling and EV charging—over the next four
18 years.

19 The Budget Acts of 2021 and 2022 require the CEC
20 to fund ZEV infrastructure for specific categories, which
21 are \$406 million for drayage trucks; \$198.5 million for
22 transit buses; \$404.25 for school bus ZEV infrastructure;
23 \$465.05 for truck, bus, and off-road equipment; and \$150
24 million for ports.

25 The CEC is allocating an additional \$44 million

1 of Clean Transportation Program funding for medium and
2 heavy- duty ZEV infrastructure. These funds will support
3 the deployment of thousands of ZEV drayage trucks, school
4 buses, transit buses, and other medium- and heavy-duty
5 vehicles within the state.

6 This fiscal year, the plan proposes investing
7 over \$30 million of program funds and \$683 million in
8 General Funds in medium- and heavy-duty ZEV infrastructure,
9 which reflects the need to swiftly transition the most
10 polluting vehicles toward zero-emission technologies in the
11 most sensitive regions of the state. Next slide.

12 Assembly Bill 8 directs the CEC to allocate \$20
13 million annually, not to exceed 20 percent of the funds
14 appropriated by the Legislature, from the Clean
15 Transportation Program to deploy hydrogen fueling stations
16 until there are at least 100 publicly available stations in
17 operation. This Investment Plan allocates \$90 million
18 specifically for hydrogen refueling infrastructure, \$20
19 million of which will be invested this fiscal year. This
20 will be sufficient to meet and exceed the 100-station goal
21 set by AB 8, while additional General Fund investments from
22 last year will help the state reach the 200-station goal.

23 The Budget Act of 2022 requires the CEC to fund
24 hydrogen infrastructure at \$20 million per year for three
25 years starting in Fiscal Year 2023-2024. This new funding

1 from the Budget Act of 2022 will allow the state to further
2 expand access to hydrogen infrastructure, including for
3 medium and heavy-duty vehicles. Next slide.

4 And with a new category here, the \$97 million for
5 emerging opportunities allocation highlighted here,
6 includes funding from the General Fund for sectors that are
7 only beginning to transition to zero-emission technologies,
8 including zero-emission aviation, locomotive, and marine
9 vehicles.

10 This allocation will also support vehicle-grid
11 integration efforts, such as mitigating electric vehicles'
12 charging during peak capacity or high carbon intensity
13 hours, as well as bidirectional charging to actively
14 support the grid. Next slide.

15 To support the development of clean, low carbon
16 fuels, the Investment Plan allocates a total of \$15 million
17 of Clean Transportation Program funding over the next two
18 years. These investments could support a variety of bio-
19 derived fuels including ones produced from forest wastes,
20 as well as low carbon hydrogen production.

21 This fiscal year includes \$10 million of program
22 funds, which complement other funding and incentive
23 programs including the low carbon fuel standard. Next
24 slide.

25 This Investment Plan Update includes \$118 million

1 of General Funds to support expansion of in-state ZEV-
2 related manufacturing to help keep California at the
3 forefront of this critical growing market. An additional
4 \$10 million of Clean Transportation Program funding will
5 support ZEV workforce development, of which 5 million will
6 be invested this year.

7 These investments will prioritize disadvantaged
8 and low-income communities to support more equitable
9 achievement of the state's zero emission transportation
10 goals. Next slide.

11 And with that, staff recommends approval of the
12 2022-2023 Investment Plan Update. This will approve the
13 plan's proposed funding allocations for fiscal year 2022-
14 2023, and signal the planned funding allocations for the
15 subsequent fiscal years. Staff also recommends a
16 determination that this plan is exempt from CEQA.

17 Thank you and I am happy to answer any questions
18 you have. And I just want to mention that we have, I think
19 about 12 speakers would like to speak about the plan.

20 CHAIR HOCHSCHILD: Thank you, Patrick.

21 Why don't we go to public comment, then open up
22 to questions after that if that's all right? Dorothy, any
23 public comment?

24 MS. MURIMI: Thank you, Chair. So some quick
25 instructions for those in the room. Use the QR codes

1 located in the back of the room and for those on Zoom, use
2 the raise hand feature. It looks like an open palm. And
3 for those joining by phone, press *9 to raise your hand and
4 *6 to unmute on your end.

5 Comments may be limited to three minutes.
6 Engagement such as Question and Answer is available offline
7 by contacting CEC staff or the Office of the Public
8 Advisor, Energy Equity, or Tribal Affairs.

9 Once we've called on your name open your line on
10 your end. Unmute, state and spell your name, and give your
11 any affiliation, if any.

12 We'll start in the room. Seeing no comments,
13 we'll move on to Zoom. Let's start with Gia Vacin. And
14 apologies if I've misstated your name. Please unmute on
15 your end and you may share your camera.

16 MS. VACIN: Good morning. Thank you. Good
17 morning, Commissioners.

18 MS. MURIMI: I'm sorry, Gia, we can't hear you.

19 MS. VACIN: Oh, okay. Can you hear me?

20 MS. MURIMI: No, we cannot.

21 MS. VACIN: Okay.

22 MS. MURIMI: Let's go on to Lori Pepper and then
23 we will come back to you, Gia.

24 MS. VACIN: Sounds good.

25 MS. PEPPER: Good morning, everyone, can you hear

1 me?

2 COMMISSIONER MONAHAN: Dorothy, I think
3 something's wrong with the speaker in here, because people
4 can hear Gia online, but not in the room.

5 MS. MURIMI: Okay. Gia, could you test that
6 again?

7 MS. VACIN: Yes, can you hear me?

8 MS. MURIMI: Yes, they can.

9 MS. VACIN: Okay, great. Thanks for sorting that
10 out.

11 Good morning, Commissioners. I'm Gia Vacin,
12 Deputy Director for ZEV Market Development at GO-Biz. I
13 think that just starting off to say that many of us, I
14 think in in the room and elsewhere, have a general sense of
15 the kind of major and meaningful investments that the CEC
16 has been making under the Clean Transportation Program.
17 But every time I read these Investment Plan updates, and I
18 see all the accomplishments compiled into a list, it's
19 always really a great reminder of everything that's
20 happening and it's a lot. And it's reassuring.

21 So I wanted to acknowledge the CEC staff and
22 leadership and express my appreciation just for all the
23 hard work and focus to effectively deploy this
24 unprecedented ZEV budget. And consider how we can better
25 leverage federal and private investments as well.

1 So just a few points here, and perhaps I'm
2 stating the obvious in this first one. But I think that
3 continuing a multi-year approach is really wise, and has
4 provided consistent signals about the state's commitment
5 and helped create better clarity and certainty for
6 stakeholders. And that's been a really meaningful shift
7 that we've noticed since it's gone into this multi-year
8 approach.

9 I also appreciate the emphasis on inclusion,
10 diversity, equity and access. Both in the funding
11 commitment, but also in thinking about how to more
12 meaningfully identify metrics that can ensure that these
13 investments are in fact enhancing equity in California, and
14 then building in flexibility to adjust as we learn and
15 evolve.

16 And I just wanted to note that SB 1291, that was
17 passed this year, places a ZEV equity advocate on our ZEV
18 team at GO-Biz. And so we're really looking forward to
19 further supporting the CEC's efforts, and the state's
20 efforts, as we expand our team there so -- and offer as we
21 as we move forward with that position.

22 We agree with the focus on leaning in on medium
23 and heavy-duty, while also not letting up on the light-duty
24 side. So it's important to ensure that we have dedicated
25 dollars for light duty in both technologies. And while co-

1 locating infrastructure where it's appropriate will be
2 important, we also just need to ensure that the required
3 changes that we're asking for -- passenger vehicle drivers
4 -- to make aren't too dramatic. And that things need to be
5 safe etcetera, which I know is also on your radars and
6 important to you as well.

7 And my last couple of points are really around
8 some of the -- I guess what I'm calling holistic or
9 creative aspects of the Investment Plan. First, I love
10 that the plan is using this portfolio approach to invest
11 and leverage federal and state dollars in a complementary
12 manner, to meet our goals and also to spur additional
13 private investment. And this is really excellent.

14 And along these lines I think that there's
15 opportunity here to accelerate transmission distribution,
16 which is super important in what we're trying to accomplish
17 here. And it's also key that we ensure that there's enough
18 flexibility built into the plan to enable California to
19 invest in some of the truly transformational projects, such
20 as those that are being proposed for the federal hydrogen
21 hubs through arches. And I know that's not known yet, but
22 that we have the flexibility to be able to invest in those
23 kinds of things as well.

24 And then we also have some additional capacity at
25 GO-Biz, to focus on the federal connection more so, we're

65

1 looking forward to continuing our collaboration with CEC to
2 secure more federal funding for ZEV transportation along
3 those lines as well.

4 And lastly, I'm glad to see included this
5 exploration of alternative funding mechanisms. I think
6 this type of thinking will really help with optionality and
7 flexibility to invest dollars in ways that can even more
8 effectively help move the market.

9 So just all in all, again congratulations on an
10 excellent Investment Plan Update. And GO-Biz looks forward
11 to working together to help ensure that these investments
12 can continue to transform and scale the market. Thank you.

13 MS. MURIMI: Thank you, Gia.

14 And then next we have Lori.

15 MS. PEPPER: Good morning, everyone. Thank you
16 so much for the opportunity to speak in support of the
17 Investment Plan.

18 I'm Lori Pepper, the Deputy Secretary for
19 Innovative Mobility Solutions at the State Transportation
20 Agency. And I represent Secretary Omishakin on the Clean
21 Transportation Program Investment Plan Advisory Committee.

22 I'd first like to thank Commissioner Monahan and
23 her team for all the work that they did. And continue to
24 do to develop the plan, which includes a lot of robust
25 stakeholder outreach and engagement activities throughout

1 the year.

2 And I also want to separately acknowledge and
3 thank the Commission for leading the creation of the Zero
4 Emission Vehicle Infrastructure Plan or the ZEV. And the
5 ZEV and the Investment Plan really established the state
6 goals, which make program implementation easier in that all
7 of us can better understand how the puzzle pieces fit
8 together to achieve those goals.

9 One of those programs is the NEVI program that
10 was referenced earlier, that was created through the
11 Bipartisan Infrastructure Law. And CalSTA and Caltrans are
12 appreciative of the partnership being created with the CEC
13 to implement that program.

14 So at CalSTA, we evaluate our actions on what
15 Secretary Omishakin calls the Core 4. These are the
16 principles on which all our actions are based, and they are
17 in no order: safety, equity, climate action and economic
18 prosperity. And so the steps that CEC has taken over the
19 years to ensure that the battery charging and hydrogen
20 fueling stations awarded, create a network to serve all
21 Californians as well as the related investments described
22 earlier during the presentation, align very well with our
23 Core 4. The outcomes from the network created are also
24 expected to make progress in each of our Core 4 areas.

25 I also want to call out the workforce training

1 and development investments. As we all know, we already
2 have the workers here to build, maintain and operate these
3 stations in the state. We just need to ensure that they
4 have the appropriate skill sets to do those jobs.

5 Finally, this plan helps bolster and coordinate
6 the funding that we are receiving from both the state and
7 federal budgets. And does so in a thoughtful manner, to
8 not just deploy ZED infrastructure to support adoption, but
9 to also help achieve state goals and standards and other
10 areas as well.

11 So thank you again for the chance to speak. I
12 appreciate the opportunity to be a part of the Advisory
13 Committee and I'm happy to support the Investment Plan
14 before you today.

15 MS. MURIMI: Thank you, Lori.

16 We will have Lisa Macumber followed by Adrian
17 Martinez.

18 MS. MACUMBER: Good morning, Commissioners.
19 Thank you for the opportunity to be here today. My name is
20 Lisa Macumber. I'm the Chief of the Equitable Mobility
21 Incentives Branch at the California Air Resources Board.
22 And I'm here to share our strong support for the adoption
23 of this year's Investment Plan Update.

24 The plan before you today, is an important piece
25 of the overall portfolio that's moving the state closer to

1 zero emissions across the entire transportation sector and
2 bringing cleaner air and better opportunities for low
3 income and disadvantaged individuals.

4 Last month, our Board approved the fiscal year
5 2022-2023 Funding Plan for the clean transportation
6 incentives, which paired with today's proposal represents a
7 total of over \$4 billion invested in this year alone
8 towards building a zero emission future, through
9 significant light-duty, medium- and heavy-duty vehicle
10 deployments, critical charging and fueling infrastructure
11 and needed investments in demonstration, manufacturing and
12 more. But the most important piece of these investments
13 really is the strong commitment to support marginalized
14 communities through direct investments and improved
15 outreach across the board.

16 I want to applaud the Commission for such a
17 thorough plan and for emphasizing the importance of
18 meaningful, measurable, equitable outcomes. We appreciate
19 the partnership forged between our two agencies and look
20 forward to implementing these investments alongside the
21 commission and the other agencies charged with improving
22 the health and wellbeing of all Californians.

23 Thank you again for the opportunity to speak and
24 congratulations to the staff and the Commission on today's
25 accomplishments.

1 MS. MURIMI: Thank you, Lisa.

2 We'll have Adrian Martinez followed by Samantha
3 Houston.

4 MR. MARTINEZ: Hi. Good morning, members of the
5 commission. My name is Adrian Martinez. I'm a Senior
6 Attorney with Earth Justice, but I'm here today on behalf
7 of the Disadvantaged Communities Advisory Group on which I
8 serve.

9 First, I want to thank the staff of the Energy
10 Commission. First, the staff that helped support the DACAG
11 but also the staff that worked on the Clean Transportation
12 Plan for many years. Patrick and other folks have engaged
13 with us and it's been a very important dialogue to provide
14 input on this critical investment. This is a historic
15 plan. I don't think we've seen investments like this ever
16 and so it will provide an immense opportunity to address
17 climate pollution, air pollution and advance equity.

18 We provided significant comments throughout the
19 process, but overall we support the effort to focus on zero
20 emissions. We think that's a very important part. We
21 expressed some suggestions around hydrogen funding. We
22 expressed support for focusing on government fleets,
23 because we think it's important to invest in the
24 government. And as we use these funds, making sure that
25 school districts, transit agencies and other entities

1 receive funds.

2 We provide input on the need to address off-road
3 equipment. We are appreciative that this plan includes
4 some additional efforts to clean up off-road equipment.

5 Overall, we appreciate -- and one of the final
6 things in our letter that we provided was we asked that the
7 staff and the Commission continue to engage with the DACAG
8 through implementation, because there are important efforts
9 around equity. Particularly like DD programs, programs
10 around ports, programs around transit agencies and we think
11 we have a lot of value that we can provide as this is
12 implemented. And we look forward to seeing projects get
13 funded and address the inequities and disadvantaged
14 communities.

15 Thank you for the opportunity to talk today.

16 MS. MURIMI: Thank you, Adrian.

17 We'll have Sam Houston, followed by Catherine
18 Garcia. And apologies if I have misstated your name.

19 MS. HOUSTON: Hello, thank you very much Chair,
20 Vice Chair, Commissioners and fellow stakeholders. My name
21 is Sam Houston and I'm with the Union of Concerned
22 Scientists.

23 The Union of Concern Scientist is pleased to see
24 an Investment Plan Update that reflects meaningful
25 investment to move California towards its climate change

1 and air quality goals, with many of the dollars directed
2 toward low-income and disadvantaged communities. We think
3 overall, the plan provides the correct high-level direction
4 and is going to going to help get us to where we need to
5 go.

6 Of course, many of the important details will
7 play out in implementation, which is why engagement of the
8 advisory group and particularly the DACAG is so important,
9 as well as this ongoing process that Patrick mentioned, for
10 the community benefits framework. That framework can and
11 should influence the implementation of the program moving
12 forward. We look forward to that framework that will
13 advance the measurement of benefits as well as the
14 accountability of benefits flowing to the communities
15 beyond just the physical location of infrastructure.

16 And with that I'll say approving this plan today
17 is a critical step to keep up the momentum to build on
18 successful programs and develop additional program
19 opportunity. Thank you.

20 MS. MURIMI: Thank you, Sam.

21 We'll have Katherine Garcia followed by Michael
22 Pimentel.

23 MS. GARCIA: Hello, good morning. Thank you so
24 much for hosting this business meeting. I am Katherine
25 Garcia from the Sierra Club, and I lead the Clean

1 Transportation for all campaigns. I'm delighted to read
2 this update and to hear the presentation today and I
3 strongly support this plan. Thank you to staff and
4 leadership for preparing this update, for leading
5 stakeholder engagement throughout the year, and for
6 reviewing our comments.

7 The plan highlights the successes from the Clean
8 Transportation Program investments this year. And I
9 appreciate the funding that will be instrumental for
10 deploying zero emission cars, trucks and buses, going
11 towards manufacturing and workforce development.

12 It's so critical that we urgently scale the
13 market. And it's important to note that investments today
14 spur the manufacturing of ZEVs in California, not only
15 benefit communities in California, but also serve as a
16 model for communities in other states and across the
17 country through federal investments.

18 I'm particularly pleased to see the funding for
19 medium- and heavy-duty vehicles that are zero emission.
20 These are key for reducing emissions in disadvantaged
21 communities and communities of color. I think it is also
22 extremely important to be aligned with our policies. I
23 also, am pleased to see emerging opportunities such as rail
24 listed in this update.

25 Thank you again for your work to advance clean

1 transportation in California, and for creating a template
2 for the rest of the country. Thanks.

3 MS. MURIMI: Thank you.

4 We'll have Michael Pimentel followed by Eileen
5 Tutt and then Miles Muller.

6 MR. PIMENTEL: Good morning, Chair Hochschild and
7 Commissioners. I'm Michael Pimentel, Executive Director of
8 the California Transit Association. We are a nonprofit
9 organization representing more than 220 transit affiliated
10 organizations throughout the nation, including 85 transit
11 and rail agencies here in the State of California.

12 Now our mission as an association, is to advocate
13 for policies and funding support that advance public
14 transit across a variety of metrics. And increasingly,
15 that work has translated into support for state and federal
16 policy and investments that facilitate the transition to
17 zero emission transit vehicles across all modes.

18 Now my association and our members are vocal
19 supporters of, for example, the California Air Resources
20 Board's innovative Clean Transit Regulation, which aims to
21 transition all transit buses in California to the EV
22 technologies by 2040. And we're now working internally and
23 with external bodies like CARB and the Commission to
24 establish the policy and funding framework and mechanisms
25 necessary to transition passenger locomotives and ferries

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1 to zero emission technologies as well.

2 With that as the context, I'm here today to voice
3 the California Transit Association's enthusiastic support
4 for the adoption of the fiscal year 2022-2023 Investment
5 Plan Update for the Clean Transportation Program.
6 Specifically, we support the multi-year investments
7 included in the plan for clean trucks, buses, and off-road
8 equipment, ZEV infrastructure, medium and heavy-duty ZEV
9 infrastructure, transit bus ZEV infrastructure, hydrogen
10 refueling infrastructure, and emerging opportunities.

11 I will note that because of the support from
12 organizations like this one, the work that we have done as
13 an association and as an industry has allowed for us, with
14 regards to transit buses, to have as many zero emission
15 transit buses in operations or on order here in 2022, as
16 CARB had projected we would have in 2027. So this
17 demonstrates the great success that investments like those
18 that are brought online through plans like this one can
19 facilitate.

20 Now, I'll note that over the last few years, I
21 have had the privilege of helping to shape these Investment
22 Plans through my seat on the Commission's Advisory
23 Committee for the Clean Transportation Program. And it's
24 because of that, that I can attest to the fact that this
25 plan reflects the input of a broad range of stakeholders

1 including California's transit agencies. And will support
2 our industry's continued goal of transitioning to zero
3 emission transit vehicles, again across all modes. And as
4 codified or soon to be codified in CARB's ICT regulation,
5 commercial harbor craft regulation, and proposed in use
6 locomotive regulation.

7 Now, as I close, I do want to show great thanks
8 and appreciation to Commissioner Monahan, to Patrick Brecht
9 and the remaining Commission staff, for all their work in
10 navigating what is sometimes disparate feedback from the
11 stakeholder community and still delivering a strong
12 Investment Plan. I want to thank you for this opportunity
13 to be before you this morning and look forward to your
14 support for this adoption of the plan. Thank you.

15 MS. MURIMI: Thank you, Michael.

16 We'll have Eileen Tutt, followed by Miles Muller.

17 MS. TUTT: My name is Eileen Tutt. I'm with the
18 Electric Transportation Community Development Corporation,
19 also representing the California Electric Transportation
20 Coalition, and on the Advisory Committee.

21 First I want to start by thanking the California
22 Legislature, the Governor and the Energy Commission for
23 this historic investment. And it really is a historic
24 transformation in our transportation sector. I fully
25 support the adoption of this plan today. I do want to

1 especially thank you for recognizing the importance of
2 investment in light-duty infrastructure, in addition to
3 medium- and heavy-duty.

4 We are nowhere near an equitable access to
5 electric vehicles for all Californians. We still need to
6 focus on multi-unit -- anyone who does who either rents or
7 doesn't have access to a plug and off-street parking,
8 really cannot drive an EV right now. These investments are
9 important. I don't want to see this as a competition
10 between medium and heavy-duty and light-duty vehicles. In
11 order to fully transform the market, we need to make sure
12 that these communities have access to electric vehicles as
13 well as especially in poor communities, electric trucks.
14 We still have a long way to go to ensure equity and that
15 everybody benefits from electric vehicles.

16 I want to especially thank David Hochschild,
17 Chair Hochschild, who pointed out at the beginning that we
18 need to focus on equity. And Lead Commissioner Monahan who
19 made equity a centerpiece of the new, revised advisory
20 committee. So I feel like the focus of this of this
21 Investment Plan is on equity and where it should be and
22 really am happy to see that. That is the true
23 transformation is making the shift from oil to electricity
24 fuel in a way that's equitable. That will be the win if we
25 can do it in California. The rest of the world can follow

1 us or certainly the rest of the US.

2 So with that, I just want to thank you so much
3 for allowing me to participate on the advisory committee.
4 And I urge you to support and adopt this plan today.

5 MS. MURIMI: Thank you, Eileen.

6 Next, we have Miles Muller followed by Bill
7 Elrick.

8 MR. MULLER: Good morning, everyone. Miles
9 Muller on behalf of the Natural Resources Defense Council,
10 here in strong support of the Investment Plan. We
11 appreciate the opportunity to provide comments today, and
12 all the work of the Commission and staff for developing the
13 Investment Plan. So building off the historic \$10 billion
14 State Budget Package, this Investment Plan sets out
15 unprecedented levels of investment in clean transportation.
16 This funding will provide significant support for critical
17 zero emission vehicle and infrastructure programs,
18 unlocking billions in public health, climate and job
19 benefits for all Californians.

20 Notably, the Investment Plan includes roughly 1.7
21 billion in funding to support medium- and heavy-duty ZEV
22 infrastructure, which appropriately reflects the importance
23 of electrifying the most polluting vehicles in the state.
24 And providing critical air quality and health benefits to
25 local communities disproportionately impacted by diesel

1 emissions. This investment is also critically important in
2 light of the climate and transportation goals set by
3 California's executive orders. And state regulations like,
4 the advanced clean trucks, and advanced clean fleets roles.

5 We also commend the Investment Plan's commitment
6 to equity, ensuring that more than 50 percent of the funds
7 go to projects that benefit low-income and disadvantaged
8 communities. The CEC should continue to prioritize
9 investments that directly benefit low-income disadvantaged,
10 rural and tribal communities and ensure that these
11 investments achieve direct, meaningful and assured benefits
12 to priority populations.

13 So ultimately, we thank you again for the
14 opportunity to provide comments today, as we all work
15 together to help California achieve its climate, air
16 quality and equity goals.

17 MS. MURIMI: Thank you, Miles.

18 Next we'll have Bill Elrick followed by Zac
19 Thompson.

20 MR. ELRICK: Great, thank you. The Hydrogen Fuel
21 Cell Partnership both thanks and congratulates CEC on this
22 comprehensive plan. In this Investment Plan, CEC in the
23 State of California has set the building blocks for the
24 creation of a sustainable energy system, the first in the
25 world. And California is making great strides to the

1 transition of 100 percent zero emission vehicle future
2 through CEC leadership and funding, which includes battery
3 and hydrogen fuel cell electric vehicles across all the
4 weight classes.

5 There's tremendous momentum behind hydrogen,
6 nationwide right now. Especially due to the US hydrogen
7 HUDs \$7 billion investment to bring the cost of renewable
8 hydrogen to \$1 a kilogram produced by 2030. Hydrogen, at
9 this production cost is at least on par and probably lower
10 than gasoline.

11 Industries will have an economic incentive to
12 transition to clean hydrogen, which is the greatest way to
13 make a sustainable, lasting, market-driven clean energy
14 economy. California leads the national hydrogen marketing
15 in transportation. And our organization has now
16 transitioned into the National Hydrogen Fuel Cell
17 Partnership to help carry that leadership across North
18 America. Achieving the 2025 goal with 200 hydrogen fueling
19 stations outlined in the CTP Investment Plan, will improve
20 the vehicle customer experience and is an excellent start
21 to achieving the partnerships 2030 1,000 station, million
22 fuel cell vehicle, sustainable market vision.

23 Investment in medium and heavy-duty hydrogen
24 infrastructure, and continued investment in the light-duty
25 infrastructure, will accelerate the rate of all ZEV

1 adoption. Just as Eli Whitney demonstrated interchangeable
2 parts for mass production and cost reductions, CEC's
3 continued investment across light, medium, and heavy-duty
4 hydrogen applications recognizes that these are all inter-
5 dependent upon each other and they help enable California
6 to reach its ZEV and environmental goals. Much like the
7 synergistic relationship of expanding wind, solar and
8 bioenergy market development.

9 The Hydrogen Fuel Cell Partnership congratulates
10 CEC on the forethought built into this Clean Transportation
11 Program and creating an agnostic, equitable ZEV future and
12 new energy economy that supports state goals and continues
13 California's global leadership position.

14 Thank you for the opportunity to speak, for the
15 ability to serve on the advisory committee. And especially
16 for all the staff's hard work put into developing this
17 excellent plan.

18 MS. MURIMI: Thank you.

19 Next, we have Zac Thompson.

20 MR. THOMPSON: Thank you. Good morning,
21 everyone. Zac Thompson with East Bay Community Energy.
22 And I also serve on the advisory committee for the Clean
23 Transportation Program Investment Plan.

24 I just wanted to voice support on behalf of EBCE,
25 for the adoption of the Investment Plan Update, and our

1 appreciation for the work CEC staff has done and continues
2 to do in updating and implementing this plan. We think
3 it's a great plan. It will obviously be critical to
4 advancing transportation electrification across the state,
5 at the scale and the pace we need. So it's obviously a
6 tremendous amount of funding. And there's a lot to
7 consider and navigate through in thinking about how that
8 funding can be utilized effectively and holistically across
9 all aspects of the transportation electrification market.

10 So I just wanted to commend CEC staff for their
11 effort and their thoughtfulness in doing that. Again, I
12 strongly support the Investment Plan update, and many
13 thanks to you, the Commissioners, and to Patrick, and the
14 whole team in general. Thank you for your time.

15 MS. MURIMI: Thank you.

16 So next, we have Armando Ramirez. Your line has
17 been unmuted. Please state and spell your name for the
18 record and you may begin your comment.

19 MR. RAMIREZ: I'm sorry, I mistakenly clicked the
20 "raise hand" there.

21 MS. MURIMI: Oh, thank you.

22 Next, we have Licha Lopez. Your line has been
23 unmuted. Please state and spell your name for the record
24 and you may begin your comment.

25 MS. LOPEZ: Hi, good afternoon. This is Licha

1 Lopez, L-I-C-H-A L-O-P-E-Z, with PG&E. Can you hear me by
2 the way?

3 MS. MURIMI: Yes, we can. Thank you.

4 MS. LOPEZ: Well, no, thank you. We at PG&E
5 support the adoption of this Investment Plan. And we also
6 greatly appreciate the Commissioners and the staff
7 assistance, including language that makes utilities
8 eligible to receive funding for capacity investments, which
9 are necessary to support electric vehicles infrastructure.

10 As the plan recognizes, this will help moderate
11 electric rates, which is a critical objective in ensuring
12 decarbonization of the transportation sector. So thank you
13 very much.

14 PG&E is committed. It's very committed to
15 transportation electrification and we hope to continue
16 making investments in the grid's local distribution
17 capacity, that will enable the flowing more power to those
18 locations where charging stations will be deployed. So
19 thank you all and thanks very much.

20 MS. MURIMI: Thank you for that comment.

21 Seeing no more comments in the room or on Zoom,
22 Chair, I hand the mic back to you.

23 CHAIR HOCHSCHILD: Well, thank you to all the
24 stakeholders and staff for the presentation and the
25 comments. And we'll turn it over to Commissioner

1 discussion starting with, Commissioner Monahan.

2 COMMISSIONER MONAHAN: Thanks, Chair and Patrick,
3 and team -- Tammy Haas and Charles Smith were very involved
4 in this all along the way.

5 I just want to acknowledge how transformational
6 this plan is. In terms of level of investment, of course,
7 it's 30 times what our budget was in 2019. So that's just
8 an eye-popping number. I would say that it is commensurate
9 with the level of ambition in the state. We are seeking to
10 zero out emissions from all sources of transportation in
11 the next 15 to 25 years.

12 Historically, I would say lack of investment by
13 the auto and vehicle industry largely, was the biggest
14 obstacle to zeroing out emissions from transportation. Now
15 I wouldn't say that. Now it's infrastructure. We need to
16 build out infrastructure in a way that's attentive to the
17 needs of communities and ensures that people are not left
18 behind. That's going to be expensive. Especially for
19 people who live in apartment buildings we need to make
20 charging or access to hydrogen, convenient, affordable, and
21 ensure that nobody gets left behind.

22 So this Investment Plan took a lot of outreaches,
23 as you've heard from all the stakeholders that spoke and I
24 really commend all the participation by our stakeholders.
25 It takes a lot of work to show up at these meetings. One

1 of them had to be in person, which was a comically
2 difficult amount of work for Patrick and the team to pull
3 together. We had to make sure we had a quorum. It was
4 hard. We were begging people to show up for our meeting,
5 and they did. All the sister agencies, CalSTA, GO-Biz,
6 CARB, also the California Transit Association. You know,
7 they've been critical and really highlighting how we have
8 to work together. We can't be individual government
9 agencies. We have to be deep collaborators. And we are
10 doing that in our grant programs, especially with the Air
11 Resources Board.

12 So I want to also thank the DACAG for
13 participating. I'm really excited that they want to
14 participate, not just in this Investment Plan and the
15 laying out of the different categories of investment, but
16 also in how we implement each one of those categories of
17 investment. I mean, that's where the real work is going to
18 happen. So I just encourage broad participation in that.
19 We're going to need help and support to make sure we do it
20 right.

21 With that, I just want to say I look forward to
22 your comments and questions. I would ask you to ask hard
23 questions. This is a lot of money on the table and we want
24 to make sure that everybody is engaged in this process and
25 supportive of the direction that that we're going.

1 I also want to highlight this is a multi-year
2 funding plan. We have Clean Transportation Program dollars
3 as Patrick said, that are about \$100 million per year that
4 are set to expire at the end of next year. Those are the
5 monies that we have to play with, I would say, in the
6 Investment Plan. The other categories are set by the
7 Legislature and the Governor. And the funding in future
8 years depends on authorization by the Legislature and the
9 Governor, so we can't assure that those monies will
10 necessarily be there. We can rest assures that the monies
11 for this fiscal year are stable, but it's going to be every
12 year that we'll see how this process plays out.

13 So with that, I'll turn it over to my fellow
14 Commissioners for comments and questions.

15 CHAIR HOCHSCHILD: Let's go to Vice Chair Gunda.

16 VICE CHAIR GUNDA: Yeah, I want to just echo many
17 of the comments that Commissioner Monahan said. And
18 Commissioner Monahan, thank you to you and your vision on
19 this as well. Thank you so much for your leadership.

20 And, Patrick, that was a wonderful presentation.

21 Thanks to all the stakeholders for coming, both
22 participating but also supporting today.

23 I wanted to get your thoughts, for the record, on
24 how we're thinking about a few things to help future proof
25 in our investment strategy. So given that the

1 electrification is a core strategy of transportation, it is
2 an incredible opportunity and a boon if it plays out well
3 for future proofing the grid reliability. Especially on
4 (indiscernible) and now the whole spectrum of that. So I
5 wanted to get your thoughts on -- given that we drew broad
6 strokes on how we were going to invest but there's a lot of
7 details to be worked out as commentators noted.

8 How are you seeing the intersection with several
9 other monies we have right now that might manifest, or
10 might not manifest? There are some uncertainties with the
11 Legislature and the budget, but if everything were to come
12 together what's the vision and the pathway to integrate the
13 investments to really future proof every dollar that kind
14 of incrementally supports the broader vision of the state's
15 decarbonization strategy?

16 COMMISSIONER MONAHAN: Maybe I'll take a stab at
17 it first and then, Patrick, you can embellish.

18 So we are thinking about ways that we can build
19 out infrastructure in a grid friendly manner. And there
20 will be a solicitation coming out soon that is focused
21 specifically on opportunities to have EVs not just willy-
22 nilly supportive of the grid, but very focused with
23 measurable grid benefits.

24 And we're looking at ways that we can standardize
25 through some nerdy 1511-8 Standards with the chargers that

1 we fund. We're also looking at -- and I mean the
2 Legislature is telling us to, and we want to, engage more
3 on the customer experience and the reliability of the
4 network. So we're requiring a higher uptime of the
5 chargers and looking deeper at the customer experience and
6 how to improve it.

7 In terms of -- we're learning as we go around DC
8 fast charging, and the balance between Level 2 kind of
9 slower charging, and DC fast charging. We're seeing it
10 play out that people want fast charging. They want it more
11 and more. But that's not the most grid friendly strategy,
12 so we're also looking at opportunities to build in storage
13 and sometimes solar. Especially in bigger facilities when
14 it comes to medium and heavy-duty, it's going to be a big
15 issue.

16 I would say this is evolving work. We're going
17 to have to work closely with you, Vice Chair Gunda, and
18 others to get the Commission to make sure that we are
19 moving forward in a way that, as you say, "future-proofs"
20 and is also grid friendly.

21 CHAIR HOCHSCHILD: All right, Commissioner
22 Vaccaro, please.

23 VICE CHAIR GUNDA: I just want to close?

24 CHAIR HOCHSCHILD: Oh, sorry.

25 VICE CHAIR GUNDA: I just want to say incredible

1 work. Thank you to the team. I haven't really worked on
2 an Investment Plan until the recent monies we've gotten
3 into kind of (indiscernible) really recognize the
4 difficulty in pulling together so many stakeholders and
5 getting the parts together. Incredible work, looking
6 forward to supporting it. Thank you, to you and the entire
7 team.

8 COMMISSIONER VACCARO: Yeah, so I don't have any
9 questions. Maybe just a few observations.

10 I think first and foremost, I just want to
11 acknowledge the incredible thought leadership that's come
12 out of your office, Commissioner Monahan. You have truly,
13 I think, set a new bar for how we go about bringing equity.
14 Like we've been talking about it, but you're really
15 modeling and showing how you truly bring equity into the
16 programs and the initiatives. You've shown not just the
17 thought leadership, but you and the team working on the
18 Investment Plan, have shown leadership in ways that are
19 important. Which is that openness, the inclusivity, the
20 being open to the robust and sometimes challenging
21 conversations when we're looking at how we move forward for
22 California and how you include all the voices of
23 Californians.

24 And so this is really -- we've heard it this
25 morning, already. It's historic for the dollars. It's

1 historic and, I think a great model moving forward for so
2 much of the work that we do. So really I just want to
3 thank you, Commissioner Monahan, your team in your office
4 and the staff team for this work. It's really very
5 important.

6 And I've had the benefit recently of doing a much
7 deeper dive into the Clean Transportation Program and the
8 Investment Plan. I'm sort of at a point in my professional
9 career, as some of you know right now, where I'm getting a
10 number of questions in areas that are not the Lead
11 Commissioner areas that I usually have ready answers for.
12 And I have just found that as I've been engaging with staff
13 the way that they approach the problem solving, the way
14 that they explain what you all are doing is incredibly
15 impressive. It gives me great confidence and it's enabled
16 me to have a solid foundation under my feet as I've been
17 engaging on these topics as well, so well done everyone.

18 CHAIR HOCHSCHILD: I would like to associate
19 myself with Commissioner Vaccaro's comments: very, very
20 well said. I do have a question, Patrick, for you really
21 and the staff. Just when you look ahead, what are the
22 things you are most worried about? What are the biggest
23 challenges to implementation?

24 MR. BRECHT: Well, making sure that we get it
25 right. That's probably the biggest challenge, our work.

1 We try to get it right by having workshops and engaging the
2 public. And we really encourage the public and
3 stakeholders including, DACAG etc. to work with us to make
4 sure that we get the solicitations correct. And that were
5 the dollars are being handled properly, and wisely, and in
6 a caring way.

7 So that's I think the biggest challenge, is
8 making sure that we're getting the dollars out the door in
9 an efficient way, in a quick way, but also in a very caring
10 and thoughtful way.

11 CHAIR HOCHSCHILD: Good, and then any updates on
12 the federal money? I think it's 384 million. What's the
13 timing on that?

14 MR. BRECHT: I don't know the timing.

15 COMMISSIONER MONAHAN: I might be closer to that.
16 And so the final guidance isn't yet available. My
17 understanding is that it'll be available soon. And our
18 team has been working very closely with CalSTA and Lori
19 Pepper's team on that. Ben de Alba, my former Advisor, is
20 actually in the Fuels and Transportation Division for that
21 work.

22 CHAIR HOCHSCHILD: Great, great.

23 Commissioner McAllister?

24 COMMISSIONER MCALLISTER: I just want to pile on
25 and say amazing work. And not just the substance of it,

91

1 but the communications and just the nurturing of the
2 stakeholder community, which is large in this case. And I
3 just kind of wanted to make a comment along the lines of
4 that stakeholder group is different from the stakeholders
5 that I tend to work with in the Efficiency Division, and
6 those of us who work on this sort of building side of load
7 and load flexibility. Commissioner Monahan and I always
8 say, okay we're going to have to coordinate on load
9 flexibility, because of transportation and buildings.

10 And I think it's evolving such that
11 transportation is opening the path for a real consideration
12 of load flexibility, and active communication and grid
13 management at scale as we really get into this
14 transformation in an accelerated way. And so the
15 harnessing of that potential is going to depend on, as you
16 point out and many of the commenters pointed out, a very
17 coherent state policy.

18 And we're a standards-making body. And so in the
19 Buildings and Appliances we're used to that role and now
20 with flexibility, we also are used to that role. And then
21 I guess -- obviously I want to encourage that the staffs
22 from the two Divisions -- Efficiency and Transportation --
23 coordinate on that vastly different stakeholder groups.

24 So I guess my question really has to do with sort
25 of how other challenges in terms of -- you know, the

1 industry tends to want to own -- you know, there's a lot of
2 intellectual property issues when you talk about how say, a
3 car or a building or appliance attaches to the grid. And
4 so do you have a sense of what our standards making
5 authority or our kind of our role could be in ensuring that
6 all of these vehicles and other devices that are connected
7 to the grid, can really be harnessed in an efficient way.
8 And what our role as a standards-making body might be
9 there?

10 COMMISSIONER MONAHAN: Poor Patrick, he's like
11 this is out of my -- when Jeffrey Lu (phonetic) was here we
12 should've had this conversation.

13 I do think there'll be a role for standards,
14 eventually. The question is when? And it's pretty early.
15 Right now, we've been funding work from this group called
16 CharIN who is convening our medium- and heavy-duty
17 stakeholders to see if there can be alignment around
18 standards for charging in the medium and heavy-duty space.
19 We want to encourage innovation. We don't want to stifle
20 it too early by getting standards that are onerous, that
21 aren't necessarily tailored for what we need. So I think
22 there is a real opportunity, but we just need to do it in a
23 stepwise, careful way.

24 COMMISSIONER MCALLISTER: Yeah, I'm asking
25 because I'm trying to get a sense of our longer-term path.

1 You mentioned these technologies that can help mitigate the
2 peak effects and have local batteries, and local solar and
3 all that is great. To some extent, a standard that's well
4 conceived could help -- or rates that are well conceived,
5 there are lots of ways to do this. That they would
6 stimulate the market for those sorts of solutions if the
7 economic incentive moved in that direction. And so I think
8 there is a lot of food for thought going forward for the
9 medium term, I guess we're talking about then.

10 I feel very confident that staff can have that
11 conversation and manage it well when the time comes. So I
12 have lots of confidence in you and the team, so thank you.

13 CHAIR HOCHSCHILD: Yeah, you have one more
14 question? Yeah, Vice Chair Gunda?

15 VICE CHAIR GUNDA: It's just a follow up from
16 Commissioner McAllister.

17 I as we think through the transition,
18 Commissioner Monahan, I think one of the critical pieces
19 from the grid side -- and I don't know how we get there --
20 but the grid side is to really unlock the grid friendliness
21 of the various electric loads.

22 And to Commissioner McAllister's point, I think
23 beyond the investment strategy of demonstrating and
24 potentially moving towards the large scale that we want to
25 enable the state what are some structural issues that we

1 ought to be -- I think there's a legislative element to
2 that. But is there anything that we as an agency can do
3 through the investment or policy planning, that really
4 unlocks that gap between -- I think we have some good
5 demonstration projects. I'm so grateful to see the
6 demonstration in San Diego with the buses this year. And
7 just in general, the relationship with PG&E, GM and Ford.
8 How do we -- I mean, what is the point from today to rapid
9 acceleration of the scale of grid friendliness of this?
10 Given the piece of what I'm kind of looking at this through
11 the lenses. You know, we're at 5,000 to 6,000 megawatts in
12 a needle peak struggle today and that could grow to a
13 10,000-megawatt needle peak in 2035, or even 2030.

14 Introducing that we have both the load following
15 opportunity, there are some rates that we can kind of
16 modify that enough to load follow. But there's this huge
17 place from there to actual grid response, whether it's to
18 the top, the V2G, or VG1, VG2. How does that stack and
19 what are the different pieces that we need to enable I
20 mean, given this incredible opportunity that we as an
21 agency have, and the Investment Plan has to push that
22 needle? So I totally agree and any comments from you would
23 be helpful.

24 COMMISSIONER MCALLISTER: Yeah, I think we don't
25 have all the answers here, but we do have some strong

1 authority. I mean, we have the Flexible Demand Appliance
2 Standards. On so the on the list of things that we will
3 get to is potentially at least, EV chargers. That will
4 involve a lot of stakeholders that kind of are at the table
5 for pool pump controls, right? You know, and for water
6 heaters. And so I think the authority is there, and how we
7 use it is kind of the core essence to my question to
8 everyone. Is really when the time may come when we don't
9 want to force it. We don't want to put a round peg in a
10 square hole. So we have that.

11 And then we have the EPIC approach for developing
12 sort of for a consensus based or pilot project-based
13 development, like we did with open ADR. That's a standard
14 now that is in very wide use across the globe. But it has
15 to be a standard that the stakeholders actually think is a
16 help and not a hindrance. And so I agree with Commissioner
17 Monahan; it's very subtle work. But we do have the
18 authority and if we want to use it. And that to some
19 extent the threat of regulation brings people to the table
20 and kind of gets folks to think hard about stuff.

21 And so I think we should keep that on the table,
22 right?

23 VICE CHAIR GUNDA: Yeah, I kind of highly
24 encourage Patrick, as we think through this. And
25 Commissioner Monahan is knowledgeable about this more than

1 any of us. But on the transportation the opportunity for
2 the DIBA (phonetic) money, right? There's a \$700 million
3 money pocket there. And then there is this \$1 billion
4 investment opportunity through that setup. Or what parts
5 of that money potentially could enable that in a
6 complementary nature for this right, so how do we talk
7 through that?

8 I think for us having guidance on how do we carve
9 out the broad strokes on these investment dollars, so we
10 could put it in the transportation program to help with
11 grid friendliness will be incredibly helpful. And that's
12 the spirit of the discussion here.

13 COMMISSIONER MONAHAN: Well, and just to maybe to
14 close the loop on this. I mean, what you're raising is
15 there's three ways we can think about this with the
16 technology aspect of it, the standards aspect, and a market
17 pricing aspect. And each one of those is a lever that we
18 can pull. We need to, I would say, more deeply explore.

19 What I would suggest is, and maybe it's through
20 the IEPR process or it could be just a workshop, but a
21 joint one where we bring at least our three offices
22 together to talk about these intersection points. And just
23 to make sure that we're understanding the opportunities.

24 And as I said, the solicitation will be coming
25 out that will give us some information, at least on the

1 technology market aspects of this. And that would be an
2 opportunity, maybe we could build from that. So wait for
3 that solicitation, see what we get, and then have a meeting
4 that brings our offices together. A public meeting.

5 VICE CHAIR GUNDA: Yeah, I think one closing
6 thought on the record given that we don't have these
7 conversations on record, but I'm also thinking about --
8 from the investment strategy standpoint there's a couple of
9 pieces, right? The Legislature was asking certain things
10 about retirement whether it's Diablo or OTC or whatever we
11 want to retire -- the way I read the legislation in broad
12 strokes is, okay if we give you a billion dollars could you
13 replace this? And then the question becomes how do you
14 spend the billion dollars to bring in 2 or 3000 megawatts
15 to the table of grid friendliness, or supporting the needle
16 peak or however. And how do we integrate that kind of
17 thought process, right?

18 And then the one other piece that I'm thinking
19 through is, is we've been having some conversations with
20 cities. What would be a large-scale demonstration of scale
21 project? Is it a block grant opportunity? Or do we want
22 to challenge the industry? Right, here's \$50 million or
23 \$100 million, bring us 200 megawatts, right? You do it
24 your way. But that it has to intersect with the CTP
25 program and the broader trajectory of the goals.

1 And I'm just kind of thinking about how do we
2 really unlock in terms of the urgency, showing the
3 Legislature --

4 CHAIR HOCHSCHILD: Like a challenge?

5 VICE CHAIR GUNDA: -- what is feasible, yeah like
6 a like a massive challenge grant. So anyways, I just
7 wanted to throw that out. Thank you.

8 CHAIR HOCHSCHILD: That's a very creative idea.
9 Unless there are other comments on Item 5 seeing none, I
10 welcome a motion on Item 5 from Commissioner Monahan.

11 COMMISSIONER MONAHAN: I move to approve Item 5.

12 CHAIR HOCHSCHILD: Commissioner McAllister, do
13 you second?

14 COMMISSIONER MCALLISTER: I second.

15 CHAIR HOCHSCHILD: All in favor say aye.
16 Commissioner Monahan.

17 COMMISSIONER MONAHAN: Aye.

18 CHAIR HOCHSCHILD: Commissioner McAllister.

19 COMMISSIONER MCALLISTER: Aye.

20 CHAIR HOCHSCHILD: Vice Chair Gunda.

21 VICE CHAIR GUNDA: Aye.

22 CHAIR HOCHSCHILD: Commissioner Vaccaro.

23 COMMISSIONER VACCARO: Aye.

24 CHAIR HOCHSCHILD: I vote aye, as well. That
25 passes unanimously. Congratulations and thank you to

1 Commissioner Monahan, congrats!

2 With that, we'll break for lunch. Why don't we
3 reconvene at 1:15 here. Thanks.

4 (Off the record at 12:11 p.m.)

5 (On the record at 1:16 p.m.)

6 CHAIR HOCHSCHILD: Thank you, Dorothy. And
7 welcome back. Congratulations to France. It looks like
8 it'll be France and Argentina in the World Cup Final on
9 Sunday, so best of luck.

10 We are not going to consider Item 6 per the
11 agenda. And we'll turn now to Item 7, Certification of
12 Home Energy Rating System Provider and Data Registry
13 Applications for ConSol Home Energy Efficiency Rating
14 Services, Inc. Welcome to Matthew Haro.

15 (Audio issues and off-mic colloquy)

16 MR. HARO: Hello, my name is Matthew Haro. I'm a
17 Mechanical Engineer in the Efficiency Division. I'm here
18 to present on Item 7, approval of Home Energy Rating System
19 or HERS Provider and Data Registry Applications for ConSol
20 Home Energy Efficiency Rating Services Inc., or CHEERS.
21 Next slide.

22 So this program provides several benefits to
23 Californians. It provides a means to verify a project's
24 compliance with the Energy Code. It provides a means to
25 protect consumers from poor equipment installations. And

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1 it supports the state's decarbonization goals through
2 compliant installation of efficiency measures. Next slide.

3 So HERS provider applications are reviewed and
4 approved under the California Code of Regulations Title 20.
5 HERS providers are required to carry out primary functions
6 such as training and certifying HERS raters to conduct
7 third-party field verification and diagnostic testing, and
8 training and certifying whole house raters to perform
9 voluntary home energy ratings.

10 HERS providers are also responsible for
11 performing quality assurance of the raters that they
12 certify. HERS providers respond to complaints from
13 homeowners and other parties by establishing and operating
14 a complaint response system.

15 Finally, HERS providers collect and maintain data
16 related to the program. Most of this data is provided to
17 the CEC in annual reports or upon request. The residential
18 data registry applications are reviewed and approved under
19 the Title 24 Energy Code.

20 Residential data registry has two main functions.
21 First, it retains and validates user input data from
22 document authors or responsible persons.

23 Second, it generates official compliance
24 documents, which are used to demonstrate compliance with
25 the Energy Code. An EDDS or External Digital Data Source

1 service is an optional data exchange service used by
2 authorized users to upload data to a registry that
3 registers Energy Code compliance documents. Next slide.

4 So staff respectfully requests the Commission
5 approve the Executive Director recommendation to certify
6 CHEERS as a HERS provider under the 2022 Energy Code, which
7 would authorize CHEERS to train and certify field
8 verification and diagnostic testing raters only. And to
9 approve CHEERS to operate a residential data registry for
10 single family residential and non-residential compliance
11 documentation. And to approve CHEERS's utilization of two
12 external digital data source services.

13 CHEERS has partnered with the Energy's Best
14 Online Scheduling System or BOSS software and Archon Energy
15 Solutions Compass software. This recommendation excludes
16 the residential data registry approval for low-rise
17 multifamily compliance documentation. As an interim
18 solution, the CEC has published a regulatory advisory on
19 how to address low-rise multifamily projects until a
20 registry is approved that is capable of processing low-rise
21 multifamily forms. This concludes my presentation and I'm
22 available for questions.

23 CHAIR HOCHSCHILD: Thank you. Let's see if we
24 have any public comment on Item 7.

25 MS. MURIMI: Thank you, Chair.

1 So for individuals wishing to comment, if you are
2 in the room use the QR codes located in the back of the
3 room. If you are on Zoom, go ahead and use the raise hand
4 feature. It looks like an open palm. And for those that
5 are joining by phone, press *9 to raise your hand.

6 Comments are limited to three minutes or less per
7 speaker. Engagements such as questions and answer are
8 available offline by contacting the CEC staff or the Office
9 of the Public Advisor, Energy Equity, and Tribal Affairs.
10 Once called, unmute on your end, state and spell your name
11 and give your affiliation if any.

12 So we'll start with Kevin Kane. Please state and
13 spell your name and give your affiliation. You may begin
14 your comment.

15 MR. KANE: Thank you. Can you hear me okay?

16 MS. MURIMI: Apologies, Kevin. We cannot hear
17 you.

18 MR. KANE: How about now, can you hear me now?

19 MS. MURIMI: Try that again, Kevin.

20 MR. KANE: Testing, testing, can you hear me?

21 (Off mic colloquy re: audio issues.)

22 MS. MURIMI: Yes, we can hear you now.

23 MR. KANE: Oh, fantastic.

24 So thank you very much for the CEC. I just
25 wanted to extend CHEERS's sincere appreciation for all the

1 work over the past few months and getting our system
2 certified. And I'm looking forward to future collaboration
3 as we finalize the low-rise multifamily.

4 Finally, I'd like to also make reference to our
5 collaboration on the 2025 Code as well. We're looking
6 forward to collaborating more with the CEC on that, and how
7 we can help be somewhat of a conduit between the CEC and
8 the market that we serve. Potentially, the fact that some
9 of the ideas and suggestions that have been listed can
10 actually be collaborated well with that market and shared
11 for a good execution. So thanks very much. We really
12 appreciate it and we look forward to working with you guys,
13 going forward. Thank you so much.

14 MS. MURIMI: Thank you for your comment.

15 Seeing none in the room, and no more on Zoom,
16 Chair, I'll hand the mic back to you.

17 CHAIR HOCHSCHILD: We'll go to Commissioner
18 discussion, over to Commissioner McAllister.

19 COMMISSIONER MCALLISTER: So thanks very much,
20 Matthew, I appreciate that. And the whole team, Lorraine,
21 Joe, the whole team that has worked so hard to bring this
22 forward. And this is through delegated authority, through
23 the Executive Director, but I've been paying very close
24 attention to it.

25 And we've asked the providers to do a lot, so

1 this item and the next item, to do a lot to get ready for
2 the code that goes into effect on January 1 -- the 2022
3 Code.

4 And then also in parallel, and the speaker was
5 referring to this, the sort of revamping of our field
6 verification diagnostic testing procedures going forward as
7 well. So that's a whole different track that also is a big
8 investment. So I just want to acknowledge both CHEERS and
9 CalCERTS for all the effort to keep those parallel trains
10 running down the track. It's a lot of effort and we know
11 we're asking a lot, but we also have a lot of urgency. And
12 so we're all kind of nose to the grindstone on this and the
13 collaboration is extremely important.

14 So this has kind of been a race to the finish.
15 And you heard that the low-rise multifamily is pending.
16 And that's because -- kind of largely at my direction.
17 I'll cop to it. We were hearing from stakeholders that we
18 needed to have a more integrated solution for multifamily,
19 the multifamily sector. It's kind of been historically
20 part lumped into the residential and part lumped into the
21 non-residential. And so we kind of carved that out so that
22 the multifamily developers could have resources that were
23 tailored to them and help their projects.

24 And so that is taking a little bit. It's a big,
25 big lift that's sort of on top of the normal code update

1 cycle activities. So that low-rise piece has taken a
2 little bit longer, and that'll work itself out in the next
3 couple of months. But I'm really happy to be at this
4 point. Thank to CHEERS for building the tools to allow
5 full compliance with the 2022 Code and I'm happy to support
6 this item.

7 CHAIR HOCHSCHILD: Unless there are other
8 Commissioner comments, I welcome a motion on Item 7 from
9 Commissioner McAllister?

10 COMMISSIONER MCALLISTER: I move Item 7 Second.

11 CHAIR HOCHSCHILD: Is there a second, Vice Chair
12 Gunda?

13 VICE CHAIR GUNDA: Second Item 7.

14 CHAIR HOCHSCHILD: Okay. All in favor say aye.
15 Commissioner McAllister.

16 COMMISSIONER MCALLISTER: Aye.

17 CHAIR HOCHSCHILD: Vice Chair Gunda.

18 VICE CHAIR GUNDA: Aye.

19 CHAIR HOCHSCHILD: Commissioner Vaccaro.

20 COMMISSIONER VACCARO: Aye.

21 CHAIR HOCHSCHILD: Commissioner Monahan.

22 COMMISSIONER MONAHAN: Aye,

23 CHAIR HOCHSCHILD: I vote aye as well. Item 7
24 passes unanimously.

25 We'll turn now to Item 8, Certification of HERS

1 Provider and Data Registry Applications for CalCERTS.

2 MR. HARO: And I'll also be presenting on this
3 item. I'm here to present on Item 8, Approval of HERS
4 Provider and Data Registry Applications for CalCERTS, Inc.
5 This is the second HERS provider being recommended for
6 approval today. Next slide.

7 Like the previous item, the HERS program benefits
8 Californians by providing a means to protect consumers,
9 verify compliance with the Energy Code and support the
10 state's decarbonization goals. Next slide.

11 And again like the previous presentation, HERS
12 provider applications fall under Title 20 of the California
13 Code of Regulations. HERS providers train, certify and
14 oversee whole house raters, and field verification and
15 diagnostic testing raters. HERS providers operate a
16 complaint response system and collect and maintain data
17 related to the program. Residential data registry
18 applications fall under Title 24 of the California Code of
19 Regulations. A residential data registry records and
20 validates data and generates official compliance documents.
21 Next slide.

22 Staff respectfully requests the Commission
23 approve the Executive Director recommendation to certify
24 CalCERTS Inc as a HERS provider under 2022 Energy Code,
25 which would authorize CalCERTS to train and certify field

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1 verification and diagnostic testing raters and approve
2 CalCERTS to operate a residential data registry for single
3 family residential and non-residential compliance
4 documentation. As before, this recommendation excludes the
5 residential data registry approval for low-rise multifamily
6 compliance documentation.

7 Again, as an interim solution, the CEC has
8 published a regulatory advisory on how to address low-rise
9 multifamily projects until a registry is approved that is
10 capable of processing low-rise multifamily forms. Thank
11 you. This concludes my presentation. I'm available for
12 questions.

13 CHAIR HOCHSCHILD: Thanks. Any public comment on
14 Item 8?

15 MS. MURIMI: Thank you, Chair.

16 So once again for those in the room use the QR
17 codes located in the back of the room. For those on Zoom,
18 use the raise hand feature. It looks like an open palm.
19 For those joining by phone press *9 to raise your hand.
20 Comments are limited to three minutes or less for speaker.

21 And engagement such as Question and Answer is
22 available offline by contacting CEC staff or the Office of
23 the Public Advisor, Energy Equity and Tribal Affairs.
24 Please unmute on your end. Once called on, state, spell
25 your name and give your affiliation if any. We'll start

1 with Shelby Gatlin. Please state, spell your name. You
2 may begin.

3 MS. GATLIN: My name is Shelby Gatlin, S-H-E-L-B-
4 Y G-A-T-L-I-N. I'm the Chief Operating Officer at
5 CalCERTS. I want to thank the Commission and the
6 Commission staff for all the work that's been put into this
7 code cycle and the new requirements that have come out for
8 our approval process. We've worked really well together
9 with both teams, the Compliance Team and the Building
10 Standards Team, on the tools needed for the 2022 code
11 cycle.

12 I also want to thank the Commission for investing
13 in the resources to grow the HERS program. Commissioner
14 McAllister referenced several rulemakings that are going
15 on, but also the tools that were developed for the 2022
16 code cycle to help with the application process to look at
17 both the data registries and the HERS program as separate
18 components of a bigger element.

19 So I appreciate everybody's time and attention on
20 this and look forward to working with the Commission going
21 forward. We know that residential buildings are an
22 essential component of grid stability, and the HERS
23 program's work for that is really important. And we are
24 proud to partner with the Commission and the HERS program.

25 MS. MURIMI: Thank you.

1 Seeing no more comments on Zoom and none in the
2 room. Chair, I hand the mic back to you.

3 CHAIR HOCHSCHILD: Over to Commissioner
4 McAllister.

5 COMMISSIONER MCALLISTER: Great. I won't repeat
6 everything I said the last time, because it's a similar
7 analogous item. But thanks to Shelby and CalCERTS, and
8 Charlie and the whole team there.

9 And this is, as Shelby pointed out, this sort of
10 move towards digitization is happening here and so this is
11 a step in that direction. We're going to be doing a lot
12 more of that with the goal of really having a much better
13 insight into the housing market and the characteristics of
14 the houses that are actually being built, so we can use
15 that to help build the Building Code going forward. These
16 tools are important and that we want to make life as easy
17 as we can for the builder and then for the local
18 jurisdiction. So that's an ongoing effort, but this is a
19 great milestone to be reaching, to be adopting these items.

20 CHAIR HOCHSHCHILD: I had a question for you, or
21 maybe for staff as well just as I support this item. But
22 just on a related point I think it's important and
23 strategic for us to gain an accurate understanding of the
24 level of non-compliance with codes as I'm hearing, still on
25 the market, but pretty wide variations on what compliance

1 truly is. As high as 20 percent from people that I have
2 great respect for, and then I am hearing other numbers that
3 are lower. And I know there were some efforts underway in
4 the Division to do an assessment. I'm wondering what is
5 the cumulative assessment of all new construction, how
6 compliant are we with code?

7 COMMISSIONER MCALLISTER: I mean I would say to
8 the extent there are problems, there are definitely
9 problems, in the existing buildings and retrofits. You
10 know, largely HVAC gets a lot of the attention, I think
11 that's justified. And there's a lot of cost structure of
12 getting a singular appliance replaced, like a water heater,
13 an HVAC system or furnace or whatever.

14 That kind of sometimes causes a race to the
15 bottom where contractors give two prices, one with a permit
16 and one without. So that retrofit market is a place where
17 these upgrades over the digitization, and sort of giving
18 more rigor to the compliance process, while we also make it
19 more streamlined and less costly is going to help solve
20 that.

21 And then also some more public accountability or
22 tracking of some nature of the equipment, particularly HVAC
23 systems that come into the state, so that we know how much
24 equipment is coming into the state and where. And then
25 triangulating that with the actual permits that get pulled

1 and pointing out the difference, and really starting to run
2 that to ground. That will create some transparency.

3 On the new construction, I would actually say
4 that compliance is pretty darn good. Certainly, in the
5 non-residential it's very good.

6 I don't think we have a whole lot of evidence
7 that the New Construction Code, certainly in developments
8 that major builders are doing like production builds, I
9 think we're quite confident that compliance is high in
10 those.

11 So it might vary a little bit by the local
12 jurisdiction, and how much attention they were paying and
13 inviting a little gaming and that kind of thing. But I
14 think that's a pretty minor element.

15 CHAIR HOCHSCHILD: I think, wasn't
16 (indiscernible) trying to do an assessment of that. Like
17 of --

18 COMMISSIONER MCALLISTER: Let's see, I guess
19 maybe I'll look to Lorraine who's in the room here. But
20 and maybe, Matthew, you know a little bit about that?
21 Okay, yeah.

22 MS. WHITE: Good afternoon, Chair, Commissioners.
23 My name is Lorraine White. I'm the Branch Manager for the
24 Standards Compliance Branch.

25 We are looking at doing an assessment to

1 determine how well we're doing with compliance. We have
2 been over the last couple of years collecting the data that
3 the registries have been verifying through their HERS
4 Raters program. It is a wealth of information on how the
5 market's performing. It also gives us an insight to the
6 amount of underground market that we are going to be
7 dealing with. It unfortunately is not the only source of
8 information were going to need in order to do a good
9 assessment in that marketplace.

10 We have plans to work with local agencies, to do
11 a lot more outreach. Of course, that's the next step.
12 Right now we're trying to rollout of the 2022 Building
13 Codes up and then running. But the importance of
14 determining that level of compliance is critical to our
15 ability to support the decarbonization goals. Because if
16 we can ensure that the folks that are particularly involved
17 in the retrofit market are doing the job to the standards,
18 then we're confident we're going to be able to make those
19 savings. So part of it is reaching out to partners who are
20 in the field, the builders, the contractors, folks outside
21 of the rater programs, in order to understand what that
22 depth is.

23 We also look to talk to manufacturers. We have a
24 project that's underway we're scoping right now to
25 determine how we can work with manufacturers on getting a

1 better sense of how much product is coming into California.
2 And how we would be able to track that and what we'd be
3 able to do with that information, confidently assessing
4 solutions for non-compliance.

5 So there's a lot of work that's going to be going
6 on in the Standards Compliance Branch and, and the HERS
7 program is just a very small part of our mission to address
8 true implementation and compliance with the Building Code.

9 CHAIR HOCHSCHILD: Great. Thank you, fully
10 support that.

11 COMMISSIONER MCALLISTER: Yeah, so thinking
12 something very similar -- I think Lorraine is sort of
13 echoing it's really about making sure we have good data.
14 And right now I mean there's really -- we asked the
15 registries to give us the data sort of on an episodic
16 basis. But the tools that we'll be building will just
17 always keep the Energy Commission with a window at all
18 times to how that marketplace is evolving. And just have a
19 constant and always up-to-date database of the actual
20 equipment that's going into actual buildings, getting
21 actual permits.

22 And so I think that in the new construction
23 there's not a lot of evidence that non-compliant equipment
24 is being installed. And so that's why I'm kind of
25 confident in that section of the marketplace. But the

1 existing buildings is where you really -- even legislation
2 is going to be required to give us the direction and
3 resources to build these tracking systems that that
4 Lorraine is referring to. And give them the resources they
5 need to actually go out and collect that data proactively
6 in the marketplace, which we don't currently do.

7 We don't know exactly how much equipment is
8 coming in. And there's a lot of variability at the local
9 level, at the building departments about what permits are
10 being pulled by whom and for what projects. And so that
11 regime needs a lot more resources and needs to be a little
12 more hardwired. It can be just ad hoc.

13 So we'll have much greater resources in the next
14 couple of years, but there's going to be a long
15 conversation about how we utilize our authority properly.
16 Because it's not an easy thing to do to collect that
17 information.

18 VICE CHAIR GUNDA: Yeah, I just wanted to take
19 the opportunity, Matt, thank you for the presentations.
20 And I wanted to congratulate the teams about ConSol and
21 CalCERTS. Lorraine, nice to see you.

22 Just in the spirit of what the Chair just raised
23 and Commissioner McAllister's comments, as the Efficiency
24 Division considers developing the assessments and such,
25 it'd be really good to see the opportunity for how to use

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1 the IMD data. Now that the IMD data is coming I think
2 there's a whole wealth of potential virtual assessments for
3 compliance. I think it'll be helpful for forecasting, grid
4 support, all sorts of stuff. So I just want to elevate and
5 support the work that you're planning to do. Thank you.

6 MS. WHITE: Thank you, Commissioner. We are
7 looking at the IMD data. It will be a wonderful window in
8 the performance of our standards.

9 CHAIR HOCHSCHILD: Great, well thank you.

10 And I welcome a motion from Commissioner
11 McAllister on Item 8.

12 COMMISSIONER MCALLISTER: I'll move Item 8.

13 CHAIR HOCHSCHILD: Commissioner Vaccaro, would
14 you want to second?

15 COMMISSIONER VACCARO: Yes, second.

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

18 COMMISSIONER MCALLISTER: Aye.

19 CHAIR HOCHSCHILD: Commissioner Vaccaro.

20 COMMISSIONER VACCARO: Aye.

21 CHAIR HOCHSCHILD: Vice Chair Gunda.

22 VICE CHAIR GUNDA: Aye.

23 CHAIR HOCHSCHILD: Commissioner Monahan.

24 COMMISSIONER MONAHAN: Aye.

25 CHAIR HOCHSCHILD: I vote aye as well. That item

1 passes unanimously.

2 We'll now move to Item 21 (sic), Danish Energy.

3 Let me welcome Alana Sanchez.

4 MS. SANCHEZ: Thank you, Commissioner. Excuse me
5 while I read from my notes. They say, "Good morning," but
6 good afternoon.

7 Good afternoon, Chair and Commissioners. My name
8 is Alana Sanchez, and I'm the International Relations
9 Senior Advisor here at the California Energy Commission. I
10 lead the Commission's international work with a lot of
11 support from my fellow advisors, CEC staff and leadership,
12 as well as our international partners, and our interagency
13 international team. Next slide.

14 As California works to accelerate the progress on
15 the state's 2030 climate goals and achieve carbon
16 neutrality by 2045 it makes sense to engage with friends
17 and colleagues around the world, particularly those that
18 have similar ambitions. After all, we're all in this
19 together. Our Governor has repeatedly called for bold
20 action on climate change and with ambitious targets for
21 renewable energy, energy efficiency and buildings, and zero
22 emission vehicles and infrastructure, California is helping
23 to lead the way to a clean energy future.

24 Climate change knows no borders and the
25 devastating impacts affect us all. In California, we've

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1 witnessed years of increasing drought followed by extreme
2 weather events and wildfire. And in California we're doing
3 all we can to grow our economy and transition our energy
4 systems away from fossil fuels, and toward a better balance
5 with nature and the communities that we serve.

6 We are not alone. Nations and some national
7 regions including cities, states and provinces are all
8 working diligently to transition to clean energy economies.
9 As the world shifts from a global economy based on fossil
10 fuels to a new clean green economy there is a lot of
11 opportunity to learn from each other and from our
12 international partners. Together we can help align
13 policies and standards that will stimulate market growth
14 and rapidly scale clean energy technologies.

15 Similar to California, the nation of Denmark is a
16 leader in the climate and energy space and has demonstrated
17 a proven commitment to fighting climate change. Denmark
18 has established national energy and climate goals and is a
19 leader in both offshore wind and energy efficiency to areas
20 specifically highlighted in the Memorandum of Understanding
21 before you today. Further, Denmark has proven to be a
22 strong ally in the fight against climate change and is
23 committed to working with global partners in an effort to
24 accelerate the clean energy transition worldwide.

25 Working internationally allows us the opportunity

1 to gain a broader perspective of the energy landscape and
2 how we fit into it. It also provides us the ability to
3 learn valuable information that can lead to better decision
4 making, particularly in the development of policy and
5 planning. Next slide.

6 California and Denmark have been working together
7 for a while now. In 2017, Denmark became a national
8 endorser of the Under2MOU. In fact, Denmark has quite a
9 few agreements with California including some with our
10 sister agencies. In my role here at the CEC, I first had
11 the privilege of working with Denmark in 2018, in advance
12 of Commissioner McAllister's visit to Scandinavia for the
13 Clean Energy Ministerial CEM9. Our Danish counterparts
14 rolled out the red carpet for the Commissioner and this was
15 the beginning of a beautiful relationship.

16 In 2018, the CEC and the Danish Energy Agency
17 also signed an MOU focused on the development of offshore
18 wind energy, signed by former CEC Commissioner Karen
19 Douglas. The initial term of this MOU was about two years
20 long and was extended for an additional two years in
21 November 2020.

22 In February 2019, the Danish energy agency sent a
23 small delegation to California on an energy efficiency
24 factfinding visit. And this visit and the energy audits
25 that followed laid some of the groundwork for engagement

1 between the Danish Energy Agency and the California Energy
2 Commission. And established the foundation for a second
3 MOU which was signed by Chair Hochschild in October of the
4 same year, 2019. The MOU focused primarily on energy
5 efficiency in buildings.

6 Shortly after the MOU signing in late 2019, the
7 CEC and the Danish Energy Agency developed an action plan
8 for engagement and began meeting online regularly to ensure
9 progress on action plan deliverables. To maximize
10 productivity of these agreements the Danish Energy Agency
11 has a dedicated Energy Attaché, based at their Innovation
12 Center in Palo Alto. The Energy Attaché, Klaus Beckman,
13 works alongside Consul General Jesper Kamp and leads a
14 dedicated team of policy and technical experts. The
15 California=Denmark teams worked diligently throughout
16 COVID, throughout the whole pandemic, and even hosted joint
17 webinars, workshops and exchanges.

18 Both 2021 and 2022 were exciting years for this
19 cooperation and provided quite a few opportunities for both
20 online and in person engagement. Now, with both existing
21 MOUs about to term out, we are ready to consolidate the two
22 MOUs into one and keep the momentum going. We have
23 reserved time in early February for Chair Hochschild and
24 Director General Böttzauw to sign the MOU virtually online.
25 Next slide.

1 We've learned a lot from our Danish counterparts
2 and in turn have been able to share some of our expertise
3 as well. Although this new MOU will focus primarily on
4 offshore wind, energy development, and energy efficiency
5 and buildings, there will still be room to explore
6 additional areas of mutual interest if jointly agreed upon.
7 In the past additional areas of exchange have included
8 industrial decarbonization, particularly in the
9 agricultural food production space, hydrogen development,
10 power to x, energy storage, zero emission vehicles and
11 infrastructure planning.

12 The key areas of focus specifically included in
13 the areas of cooperation of this MOU include sharing
14 knowledge and solutions about the constraints and
15 challenges of planning, permitting and construction of
16 offshore wind energy facilities. Sharing knowledge and
17 approaches to energy efficiency and decarbonization of the
18 industrial sector. And sharing knowledge about the
19 challenges and solutions to implementing energy efficiency
20 and decarbonization measures and residential and commercial
21 buildings. Next slide.

22 All eyes are on California. Under Governor
23 Newsom's leadership, California has taken the most
24 aggressive action on climate change our nation has ever
25 seen. California's commitment to long-term forward-looking

1 policies makes our state a global leader in the fight
2 against climate change. As California moves farther away
3 from fossil fuels and transitions to clean energy it is the
4 collective effort from all interested parties, government
5 leadership, policymakers, innovators, academics, industry
6 experts, community representatives, and the public we
7 serve, and of course our international partners. This will
8 continue to drive our decarbonization efforts
9 (indiscernible).

10 Sharing California's values will remain at the
11 heart of the work we do with a focus on equity and
12 community resilience as we strive to achieve a clean energy
13 future for all. California and the California Energy
14 Commission is committed to implementing proactive solutions
15 to the climate crisis and to working with international
16 partners to do so. It's true, we are stronger together.

17 It's an honor to serve the people of California
18 and to work with friends and partners from around the globe
19 to accelerate the achievement of our shared energy and
20 climate goals. I am proud to be part of the California
21 Energy Commission team and I want to acknowledge the CEC
22 leadership and staff, the Commissioners, the advisors, the
23 division liaisons, deputy directors and all our amazing
24 staff, for their ongoing engagement and support for our
25 international work.

1 Finally, I would like to recognize our
2 interagency and international partners for their continued
3 collaboration. For the Governor and the lieutenant
4 Governor's leadership in the international climate space,
5 and the energy space. And huge thanks to the Innovation
6 Center of Denmark, Consul General Kamp, Claus Ekman and the
7 Danish Energy Agency team for their continued dedication
8 and leadership in this partnership. We are grateful for
9 this collaboration and we look forward to the coming year
10 and continuing this good work.

11 Thank you, Chair. Thank you, Commissioners.
12 This concludes my presentation and I'm available for any
13 questions.

14 CHAIR HOCHSCHILD: Thank you, Alana. We'll go to
15 public comment on Item 21. [sic]

16 MS. MURIMI: Thank you, Chair.

17 Once again, for individuals that are on Zoom go
18 ahead and use the raise hand feature. For individuals that
19 are in the room utilize the QR codes located in the back of
20 the room. And for those joining by phone press *9.
21 Comments may be limited to three minutes or less per
22 speaker.

23 Once again engagement, such as Question and
24 Answer is available offline by contacting CEC staff or the
25 Office of the Public Advisor, Energy Equity and Tribal

1 Affairs. Once we call on your name, unmute on your end.
2 State and spell your name. Give your affiliation, if any,
3 and you may begin. We'll start with Claus Ekman. You may
4 begin.

5 MR. EKMAN: Thank you. Can you hear me?

6 MS. MURIMI: Yes, we can.

7 CHAIR HOCHSCHILD: Yes, (indiscernible) great.

8 MR. EKMAN: Claus Ekman, I am the Energy Attaché
9 posted by the Danish Energy Agency here in California to
10 work on the MOU with the CEC. And I just would like to
11 take the opportunity to express our high appreciation for
12 the collaboration with the CEC over the last couple of
13 years. The knowledge exchange and the best practice
14 sharing is of high value for us, both when it comes to the
15 topics of offshore wind energy efficiency in industry and
16 buildings, and all the other topics we've been diving into
17 with the CEC.

18 And I also want to take the opportunity to
19 congratulate the CEC and the State of California for their
20 achievements in the green energy transition of your leading
21 role in the efforts to achieve a zero-carbon economy. We
22 are very much looking forward to continuing our efforts
23 with the CEC under this new MOU. Thank you.

24 MS. MURIMI: Thank you, Claus.

25 And seeing no comments in the room, and no

1 comments on Zoom, Chair I hand the mic back to you.

2 CHAIR HOCHSCHILD: Yeah, well thank you, Claus.
3 Thank you, Alana.

4 Just a few words of gratitude to Denmark. We
5 entered this partnership in a spirit of humility and
6 friendship and collaboration. And I've been really
7 inspired by what I've been able to see in Denmark. They
8 have 500 offshore wind turbines installed. They have so
9 many offshore wind turbines that they are now
10 decommissioning and repowering the early versions of the
11 turbines.

12 And as we enter this incredibly exciting chapter
13 on offshore wind in some reports, Commissioner Vaccaro is
14 going to be releasing shortly, we want to learn. And we
15 want to learn from those who have the most to teach. And I
16 think Denmark's in an excellent position.

17 I'm particularly grateful for the chance to tour
18 both the Port of Esbjerg, where they've done substantial
19 port upgrades there to support the deployment and
20 maintenance operations for their offshore wind fleet. But
21 also to see offshore wind manufacturing, wind blade
22 manufacturing there, and some of the other exciting things
23 they're doing on carbon captures.

24 So I'm excited to advance this partnership today
25 and I will open it up to any other colleagues.

1 Commissioner McAllister?

2 COMMISSIONER MCALLISTER: Yeah. Thank you, Claus,
3 I really appreciate that and Alana, for the presentation.
4 And I would also like to thank my Advisor, Bryan Early for
5 doing a lot of facilitation of some of the relationship
6 too.

7 But it's amazing to me the impact that Denmark is
8 having globally, just punching way above your weight in
9 terms of population. But just really leading the way on a
10 lot of different topics and particularly in industrial
11 energy efficiency, industrial process improvement,
12 decarbonization, and buildings generally, but also embodied
13 carbon in buildings. Just really leading the way and
14 providing a lot of thought leadership there.

15 And we have a lot to learn from Denmark. And I
16 think we can take these ideas and really make them viable
17 in bigger markets, because we are a big state with a big
18 economy. But that leadership and how -- that
19 directionality and sort of the technical path forward,
20 professional path forward, I think is something that
21 Denmark is providing global leadership in. So we're lucky
22 to be partnering with you and the whole team and just
23 really enjoy the interaction and collaboration. It's going
24 to continue to be fruitful going forward.

25 CHAIR HOCHSCHILD: Yeah, Commissioner Monahan.

1 COMMISSIONER MONAHAN: Yeah, I want to build on
2 that. I was lucky enough to be able to go to Denmark with
3 my then Advisor Mona Badie, who's now our Public Advisor,
4 and several folks -- one from Commissioner McAllister's
5 office in the Efficiency Division. And really it was very
6 inspirational. I just learned a lot and that I want to
7 thank actually Commissioner McAllister for being point at
8 the Commission, for helping forge that relationship.

9 And Claus, I haven't met you yet, but I look
10 forward to meeting you. And I just want to say that we in
11 California, really value these international partnerships.
12 I mean, we can't work in silos and we want to be able to
13 learn from the best. And we want to export our solutions
14 to other countries as well, so we view ourselves as a
15 nation state, nearly the fourth largest economy in the
16 world, and look forward to working together.

17 COMMISSIONER MCALLISTER: Here, here. And I left
18 out one thing I wanted to say. When I went over there a
19 few years ago, just the treatment and the reception was
20 tremendous. And I think that spirit has continued today.

21 And I wanted to thank a key staffer who's not
22 here with us, working on this anymore, but who was really
23 key to helping the relationship flower and flourish, and
24 that's Beau Resgard. (phonetic). We would just like you
25 to send our best to him. And he's back in Denmark with his

1 family and just a real positive impact on the whole
2 relationship. And then really he's unique in some ways,
3 but I think it's just emblematic of our positive
4 relationship and the excellent collaboration. So thank you
5 very much.

6 CHAIR HOCHSCHILD: Commissioner Vaccaro.

7 COMMISSIONER VACCARO: Thank you. So, Alana,
8 thank you so much for the presentation. And I want to echo
9 all that's been said and share that I'm very supportive of
10 this MOU. I've had the privilege of the past several
11 years, working very closely with a number of our DEA
12 counterparts in the offshore wind space. And they have
13 been incredibly generous with their time, with their
14 information. We have forged, I think not only very
15 productive, professional relationships, I feel that we are
16 friends as well.

17 Most recently, we had the benefit of the input
18 from the Danish Energy Agency on our transmission offshore
19 wind workshop. That we've really been spending a lot of
20 time bringing them into conversations with our sister
21 agencies as well. So I'm not as involved in the energy
22 efficiency space, but I've been in so many of the meetings
23 as we've developed the work plan, as we've been
24 implementing the work plan. And right now we are
25 developing a new work plan. And so I thank you, Alana, for

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1 helping keep us all together. My Advisor, Eli Harland, I
2 think has really been glue as well in that relationship on
3 the offshore wind piece of this and so, very supportive.

4 CHAIR HOCHSCHILD: Vice Chair Gunda?

5 VICE CHAIR GUNDA: Yeah, just wanted to add to --
6 and so first of all, Alana to you. You know, these
7 relationships take a lot of time and to develop, and I just
8 want to commend you and the team for -- not only Denmark,
9 but all the countries and sub-nationals that we work with,
10 in cultivating that respect and camaraderie and confidence
11 with each other is excellent. So thank you for all the
12 work there.

13 I just wanted to state my gratitude to colleagues
14 from Denmark during the visit this summer that I got to
15 experience the offshore wind development. I think it's a
16 testimony to how the Danish Energy Agency and colleagues
17 there have very similar values and goals in the end. And
18 it becomes easy to work with colleagues that share the same
19 goals and values, so I just want to congratulate the staff
20 on pulling this together. I also look forward to working
21 with colleagues from Denmark, not only to identify areas,
22 but one of the things we briefly discussed was, the
23 emerging needs for data and resource planning, and how we
24 continue to share knowledge on both those things. So I
25 look forward to supporting this so, thank you.

1 CHAIR HOCHSCHILD: Great with that, Vice Chair
2 Gunda, would you be willing to move Item 21 (sic)?

3 VICE CHAIR GUNDA: Yep, I move Item
4 (indiscernible).

5 CHAIR HOCHSCHILD: Commissioner Vaccaro, would
6 you be willing to second?

7 COMMISSIONER VACCARO: I second.

8 CHAIR HOCHSCHILD: All in favor say aye.
9 Vice Chair Gunda?

10 VICE CHAIR GUNDA: Aye

11 CHAIR HOCHSCHILD: Commissioner Vaccaro.

12 COMMISSIONER VACCARO: Aye.

13 CHAIR HOCHSCHILD: Commissioner McAllister.

14 COMMISSIONER MCALLISTER: Aye.

15 CHAIR HOCHSCHILD: Commissioner Monahan

16 COMMISSIONER MONAHAN: Aye.

17 CHAIR HOCHSCHILD: I vote aye as well. That Item
18 passes unanimously. Thank you, Alana.

19 We'll turn now to Item 9, minutes of the November
20 16, 2022 Business Meeting. Any public comment on that?

21 MS. MURIMI: Thank you, Chair.

22 So reiterating instructions, once again. For
23 individuals in the room go ahead and use the QR codes
24 located in the back of the room. For those on Zoom, go
25 ahead and utilize the raise hand feature. It looks like an

1 open palm. For those joining by phone press *9 to raise
2 your hand and *6 to unmute on your end.

3 Once again, comments are limited to three
4 minutes. Engagement such as question and answer is
5 available offline by contacting the staff or the Office of
6 the Public Advisor, Energy Equity, and Tribal Affairs.

7 Once called on open your line. State, spell your
8 name, and give your affiliation if any, and you may begin
9 your comment. Seeing no Q and A -- seeing no raised hands
10 in the room and no raised hands in Zoom, Chair, I hand the
11 mic back to you.

12 CHAIR HOCHSCHILD: Okay, unless there's comments
13 on the minutes, Commissioner McAllister, would you be
14 willing to move Item 9?

15 COMMISSIONER MCALLISTER: Move Item 9.

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

18 COMMISSIONER MONAHAN: I second.

19 CHAIR HOCHSCHILD: All in favor say aye.
20 Commissioner McAllister.

21 COMMISSIONER MCALLISTER: Aye.

22 CHAIR HOCHSCHILD: Commissioner Monahan.

23 COMMISSIONER MONAHAN: Aye.

24 CHAIR HOCHSCHILD: Vice Chair Gunda.

25 VICE CHAIR GUNDA: Aye.

1 CHAIR HOCHSCHILD: Commissioner Vaccaro.

2 COMMISSIONER VACCARO: Aye.

3 CHAIR HOCHSCHILD: And I vote aye, as well.

4 We'll turn now to Item 10, Lead Commissioner and
5 Presiding Member Reports. Commissioner Monahan has
6 suggested since we have another December meeting coming up
7 shortly that we push any Commissioner updates to that
8 meeting and just focus on thank yous, unless there's anyone
9 who has burning items they really want an update on.
10 Otherwise we'll just focus on the thank yous. Is that okay
11 with everyone?

12 Why don't you start us off Commissioner Monahan.

13 COMMISSIONER MONAHAN: Thank you, Chair. And I
14 want to say I have to leave at about 2:45 to go to a press
15 conference on the CTP Investment Plan. So I might be
16 leaving. So sorry to miss some of the thank yous,
17 potentially.

18 Well, this is a wonderful time when we get to say
19 thank you. I really -- the first time when I started at
20 the Commission, and I was like wait, what is this? Now
21 three years in I've come to really appreciate it. And I
22 like Noemi's idea actually of having names up there, so we
23 don't have to read everybody's name, because I think it can
24 get long.

25 But I just want to start with my office. And

1 first I want to focus on my previous advisors. I had a big
2 change-over this year with both of my advisors leaving kind
3 of simultaneously and two new advisors coming in. So first
4 I just want to thank my previous advisors. I want to start
5 with Ben De Alba, who joined my office at the very
6 beginning of my tenure here. He really helped me acclimate
7 to the Energy Commission, understand the ins and outs, and
8 adjust to this role. He's the key organizer for the port's
9 collaborative, he helped oversee medium to heavy-duty
10 investments, and just kept the trains running on time. So
11 I really appreciate all he did for me in the beginning.

12 Mona is -- Mona Badie who's sitting back there in
13 the dark, is now our Public Advisor. And I just want to
14 thank Mona for all she did to help me with the DACAG, help
15 me with my travels, with stakeholder engagement, with the
16 advisory committee, with SPPEs, one of Mona's favorite
17 things to navigate. And she was just a wonderful
18 colleague. Always gave me her opinion with exclamation
19 points, which I really appreciate. And was just a great
20 travel partner as well so thanks, Mona.

21 And lastly, Catherine Cross, who I put admin plus
22 because she is like the whisperer, the CEC whisperer. She
23 knows all the ins and outs, so Catherine is the one you
24 want to have tea with. And she brings a lot of competence,
25 deep knowledge, and she's always willing to help. So I

1 really am thankful for Katherine.

2 So I have my new advisors and they're both here
3 in person, which is so fun. Sarah Lim, who comes from DC
4 as you all know, and really has jumped in headfirst. She
5 didn't know anything about California, knew a lot about of
6 course Congress and DC, but California has been a new
7 animal. She's just jumped right in. She helped with my
8 other advisor, Ben, pull together a paper, like a
9 background document before we had the workshop with the oil
10 industry. And it was like guys should have all had one of
11 these documents, it was amazing. I spent many hours in the
12 night going through each link to be well prepared. So
13 she's bringing her sharp legal and political instincts to
14 bear and really helping me hone mine.

15 And Ben Wender, who brings deep expertise in
16 transportation, but also lifecycle analysis, and he's very
17 funny. He's willing to help with just about anything.
18 He's very humble, but could work on his ego I think. But
19 he's just a wonderful colleague. So I really appreciate
20 both of my new advisors.

21 So when it comes to the Division I work mostly
22 with it's the Fuels and Transportation Division, of course.
23 Can we move to the next slide? So here's a lot of people,
24 so I'm not going to name all the names, but I'm going to
25 name a few.

1 I'm going to start with Hannon who directs the
2 Division. And I just want to say I could not ask for a
3 better partner than Hannon. I wish he were here in the
4 room with me. He's entrepreneurial and visionary, but he's
5 also deeply practical and diligent. He takes his
6 responsibilities as a leader seriously and he models
7 professionalism and accountability. But he also seeks joy
8 and humor wherever he can. So he balances those two. I
9 continue to be surprised by him and to learn from him. And
10 I'm just grateful for his partnership.

11 Melanie Vail who's joined us pretty recently, and
12 she's managing the day-to-day operations. And while I
13 haven't worked with her I hear nothing from Hannon but,
14 "Oh, my gosh. I'm so happy Melanie is here." Sorry, Drew.

15 And the managers are also just great to work
16 with. Charles, Elizabeth, Mark. They've all stepped up.
17 You've all seen a 30-times increase in budget that's just
18 hard to navigate and it takes diligence. And it takes a
19 lot of hard work to hire up and get the right staff to be
20 able to manage this money. And they're all just wonderful
21 in their own different ways.

22 I'm going to mention some of the big projects
23 that FTD is managing. And I will circulate this and maybe
24 my team can help me too, FTD, so they can see the names.
25 You saw today the advisory committee and the Investment

1 Plan has a whole body of work. That takes a lot of
2 management.

3 Then there's a body of work around identifying
4 community benefits and equity. And that's something I'm
5 really excited about and the team is taking on. I'll call
6 out Larry Rillera, who I think you guys know, who is
7 leading some of that work and has just been amazing on the
8 EV Charging Infrastructure Strike Force Equity Group as
9 well. And Taylor Marvin, who's taking on project management
10 for that. I appreciate that body of work.

11 The ZEV Manufacturing Awards, which I think the
12 Chair also loves, which will be coming soon to a business
13 meeting. Jonathan has been the lead for that but there's
14 been other folks involved, as you'll see on the slide, as
15 well.

16 And then there's been really an expansive number
17 of reports of research that the team has been involved
18 with. And this is research that sometimes or mostly it's
19 requested by the Legislature, but sometimes by our sister
20 agencies. So this new report on the Zero Emission
21 Infrastructure Plan, the ZEIP, that actually was just
22 extra. And I'm just kind of amazed given all the work that
23 we have, that the team was willing just to take it on. And
24 they did. So Thanh, Madison, Mark, thank you for helping
25 with that, pulling that together.

1 And then the reports that you've seen, sort of
2 the hydrogen public infrastructure report for light duty,
3 the so called AB 8, that now has evolved with time and now
4 includes international data. The SB 1000 report on equity
5 when it comes to charger distribution that Tiffany's lead.
6 There's a new report on hydrogen for medium and heavy-duty
7 that Kristi is leading. And then of course, the 2127
8 analysis of 2030 charger needs. That's Mark, Mike,
9 Nicolas, Adam, Davis and Micah. And that's a huge body of
10 work.

11 So It's a place where I think FTD is intersecting
12 with EAD and together with Vice Chair Gunda we're trying to
13 make sure that those intersections are very intentional,
14 and that we're incorporating EAD's work into what's being
15 published, like in 2127, so that we are one agency. We're
16 not individual divisions within an agency.

17 Charger reliability has been a huge workload. I
18 mean, it kind of came in a storm. So there's a team of
19 folks working on just making sure that we're doing a better
20 job monitoring the reliability of chargers.

21 There's a bunch of innovative funding programs.
22 That's actually our bread and butter is funding. So again,
23 we've there's a lot of folks involved but REACH, REV,
24 ENERGIZE, Communities in Charge, CaleVIP, Blueprint and
25 School Bus, we've just got a lot of different innovative

1 redwoods, innovative grants, that are managed by a really
2 great diligent set of teammates.

3 On vehicle grid integration, Jeffrey and Keil
4 have been just amazing. And both of them, I'm pinging them
5 all the time with questions. They respond on a dime to my
6 many questions and have been leaders in taking that on.

7 And lastly, tire efficiency. So there's I want
8 to thank the Chair and Ken Rider for pushing this one, but
9 we're looking at tire efficiency and again that'll be
10 coming your way soon. But a group a group of folks --
11 Sebastian has led it, but Ken has been involved. Tim,
12 Bill, Jontae are all involved in that body of work. So
13 thanks to everybody on that one.

14 So let's move on to other divisions. Next slide.

15 I've been working more and more with other
16 divisions as my portfolio has evolved. And so ERDD, I've
17 been now working a fair amount together with Commissioner
18 McAllister on the hydrogen program and industrial decarb.
19 And I just appreciate the teams that are leading on that
20 and the new work that we're doing to roll out new grant
21 programs takes a lot of creation, creativity and
22 innovation. And both teams, the hydrogen and industrial
23 decarb are really, I think, looking at this from an
24 entrepreneurial way. And really trying to figure out how
25 we can have the biggest impact not just in the state, but

1 potentially migrate beyond the borders of California.

2 The transportation research team has been great,
3 and I'm sure they're mad at me for the loss of one of their
4 brethren. But Peter, Rey, Mei and Katelynn have all been
5 wonderful to work with.

6 Erik on the battery pilot line facility has been
7 really fun to work with as well. And so it's been
8 wonderful to see, to have more touch points with ERDD and
9 to be able to learn from the team and all the work that
10 they've been doing. I think Jonah and his leadership is
11 all part of that equation of creating a healthy team
12 environment.

13 From EAD my favorite tool the ZEV dashboard, I'm
14 a little obsessed with it, it could be a problem. And some
15 of the creative work that's been happening on the demand
16 forecast side, which Quenton has been leading, but Heidi
17 and Jesse and Liz, others are all involved in that. And
18 just really it's so fun to meet with them and nerd out on
19 talking about transportation demand forecasts. So I get a
20 little jealous of Vice Chair Gonda for the fact that he
21 gets to do this every day.

22 So now I want to move to communications.
23 Lindsay, she's not here in the room, but what an amazing
24 person. What a lucky thing for us to have somebody who is
25 so creative and a force for helping us tell our story. I

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1 just really appreciate all she does. And Toan who now much
2 to my surprise is also a great announcer of things. His
3 voice is showing up on a lot of our videos. And he's the
4 one I worked with on transportation communications. So
5 Toan, just thank you. If you're listening in, you're a joy
6 to work with and I really appreciate all you do.

7 Government Relations -- I guess Anna has left the
8 room, but we do have Alana. And it's been fun working with
9 you on international stuff, Alana, whether it's China or
10 Denmark. Japan, I guess, is what's coming next. But I
11 really appreciate all your diligence and the support you
12 provide in that.

13 And Anna too on -- we've worked with Anna over
14 the years around AB 8 reauthorization, and maybe we'll be
15 working with her again. We'll see on that issue. But she
16 also has been super helpful and thoughtful in helping us
17 navigate the government relations side.

18 So on admin and financial services, I want to
19 thank Damien, who recently joined. And he's been a rock
20 star on the budget. So who knew that finances could be so
21 fun? And I really want to say Damien's awesome.

22 On the IT side, Giana has been my go-to. Where
23 is Giana, she's here somewhere. There she is, that little
24 hand. But thanks, Giana, for all the help that you give
25 the many times when I'm texting her saying "help me" and

1 she always answers. Also Jerome and Joseph too have been
2 having great helps.

3 So from the Counsel's Office, Linda, you're
4 amazing. And I just want to say thank you for all that you
5 do to make sure that we are legally circumspect, but also
6 that you're pushing the envelope, pushing us. And the fact
7 that you did all this extra work for the advisory
8 committee, that you personally were working nights and
9 weekends, I just want to say thank you from the bottom of
10 my heart. That really mattered to me. I really cared
11 about that issue, and you stepped up. And I really just am
12 grateful for that.

13 So there's a number of folks in the Counsel's
14 Office that supports the Fuels and Transportation Division,
15 and then you could see all their names up there. Allan,
16 Samantha, Cory, Kristina on the FTD side. For my ethics,
17 Renee. On the SPPE front, which has been really an
18 evolution for me, Kristin, Renee, Deborah and Susan have
19 all been great. You have a good team, Linda, that you're
20 cultivating and I know you want to expand it further.

21 From the Public Advisor side, so did we already
22 lose Noemi? Oh, she left? Oh, too bad. All right, well I
23 mean Noemi has helped elevate all of us I would say. And
24 me personally, to improve our public engagement to be more
25 attentive to communities, and just to be more creative in

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1 how we engage. To actually bring IEPR to the people and
2 just really helping internally and externally make us more
3 diverse, more attentive to diversity issues, kinder, which
4 I can work on, and more thoughtful. So I'm really
5 appreciative to Noemi. Katrina, as well with all the work
6 she does and how she's helped us navigate tribal
7 communities. Dorothy, you're amazing. You're always
8 there, working hard with no drama helping us engage with
9 the public so, thank you.

10 All right, and now the Executive Office. Drew, I
11 want to thank you for always being there for me whenever I
12 had a question. For always helping me, for always coming
13 with your creative hat and bringing ideas and concepts that
14 I wouldn't have entertained otherwise. I always listen to
15 your counsel and take it seriously. And you're always
16 there for me so, thank you.

17 And Carousel on the EEO side. I think Noemi
18 calls them good trouble. And Carousel, I wouldn't even say
19 trouble, but Carousel just has brought so much spirit and
20 enthusiasm and her big heart, but also practical guidance
21 to me and to the organization has been helpful.

22 And Heather, I think we all just love Heather in
23 terms of Heather always shows up and works hard and tries
24 to fulfill whatever Commissioners she's working with needs
25 on the IEPR. And I think all of us come with different

1 needs, so it must just be head spinning for her. At some
2 point when she retires we'll have to take her out and hear
3 all the horror stories of each of us. But Heather's
4 amazing.

5 So and I also want to appreciate my fellow
6 Commissioners, all of you. I just feel very privileged to
7 be here, working with you. I think all of us come at this
8 with a deep, profound commitment to cleaning up the
9 environment and to making it a safer place for our kids and
10 for everybody's kids. And I learned from each of you. I
11 try to sometimes model myself after each of you in
12 different ways. And I feel like this is a very precious
13 role we have, a very precious time. And we need to
14 collaborate and work with each other to make sure that we
15 can be as successful, and the organization can be as
16 successful as it should be. That's all.

17 CHAIR HOCHSCHILD: Thank you.

18 Commissioner McAllister.

19 COMMISSIONER MCALLISTER: Well, a hard act to
20 follow. I may have -- so I just dumped all the names on
21 one slide. Let's see, my slide might be coming up here
22 pretty soon. Hopefully it made its way in. There we go.
23 I just listed all the names rather than by topic or
24 anything. And I'll sort of talk us through it.

25 You know, obviously my primary -- part of my

1 portfolio is overseeing the Efficiency Division. There's
2 just incredible diversity of work that goes on there. But
3 I want to just start out. There are actually two little
4 news items I just have to do now before thank you, because
5 they reflect the incredible team that we have in Efficiency
6 Division, and everyone that relates to the Efficiency
7 Division. And that's the fact that we are again, for the
8 second time running, the number one state in the ACEEE,
9 State Energy Efficiency Scorecard.

10 So there were big events a couple weeks ago on
11 that and Commissioner Shiroma represented California on
12 that, and just got a lot of great press. And we extended
13 our lead, and we're sort of further ahead of Massachusetts
14 than we were two years ago.

15 So that doesn't just happen. That is a sum total
16 of a whole bunch of points on which we get graded. And
17 there's just a huge number of factors that go into that.
18 And we got 47 out of 50, so not a whole lot of room for
19 improvement, although obviously we always need to move
20 forward and improve. So that's sort of context.

21 And then we did finally join the Building
22 Performance Standard Coalition, this national coalition,
23 that the White House formed 18 months or so ago. And we're
24 by far the biggest jurisdiction in that. I think that's
25 sending a big signal to the to the marketplace, to the

1 world, that buildings are really going to have to step up
2 and really improve consistently for the next decade.

3 So the Efficiency Division. First, the Deputy of
4 Efficiency, Mike Sokol, is just a gem. Just an incredible
5 amalgam of skills from keeping track of a lot of details.
6 Lots of granular stuff goes on in the Efficiency Division,
7 but he keeps an integrated view of things, is very
8 supportive staff, is a mentor, sort of pushes staff. He
9 gives staff chances to shine and really pushes them, but at
10 the same time supports them so that they can succeed. So I
11 really, really appreciate Mike.

12 A few highlights of the Division, just in terms
13 of the staff, Christine Collopy, Mike's Deputy, just an
14 incredible mentor. She got the staff award for mentorship
15 and that was so well deserved. She is a key administrative
16 leader and just knows where all the bodies are for all the
17 programs over all the years and she's just an institutional
18 treasure.

19 Jennifer Nelson really has gone deep, and just
20 all in on her leadership around building decarbonization.
21 It's a tough topic, a very wide-ranging topic and she's
22 really embraced it. And that's going to be key for our
23 programs going forward.

24 Peter Strait, the new Manager of the Appliances
25 Office, just brings a wealth of knowledge. He's very

1 effective in his job and is a very fast talker as some of
2 you have noticed, and so he gets a lot done during the
3 course of eight hours.

4 Stefanie Wayland, a new addition that came in to
5 lead the Load Management Standards and just did a fantastic
6 job getting those across the finish line and is leading
7 implementation. And is just such a visionary. We're so
8 lucky to have her.

9 Javier Perez, he stepped into the Building
10 Standards leadership role. And he's doing a great job and
11 doing a bunch of other stuff at the same time, including
12 organizing an interagency effort that I'm leading with
13 housing and climate -- housing and decarbonization,
14 interagency working group.

15 David Johnson is now my adviser, but also took on
16 an important leadership role in the Appliances Office just
17 very quickly. Super smart and an incredibly quick study,
18 and very important for water efficiency. So he'll continue
19 to do that.

20 Elizabeth Butler is the Contracts Lead for the
21 Division. She has executed the largest batch of
22 solicitations in funding that has been administered through
23 the Efficiency Division in recent years. So the process
24 challenges she has overcome, and really lent some rigor to
25 that process.

1 Bruce Helft has lots of leadership on the
2 Flexible Demand Appliance Standards and is a consistent
3 voice in that office to help reach caps when we've had some
4 funding or leadership changes, and staff changes.

5 Hengbing Zhao has quietly and consistently led
6 the Division's data and analytics activities sort of behind
7 the scenes, sort of an unsung voice. And so thank you very
8 much, Hengbing. Including the development of the HERS data
9 collection and CCR repository.

10 Thao Chau is the Technical Lead on Controlled
11 Environmental Horticulture, so all the vegetables and weed
12 that's grown in California. We're starting to regulate
13 those loads and it's a learning curve for us and I think
14 productive with Thao's leadership.

15 Daniel Wong stepped into the technical leadership
16 role on compliance innovation and has really learned a lot
17 of details and is harvesting a lot of opportunities for
18 innovation there, so on the compliance front.

19 Morgan Shepherd, another new advisor. She really
20 jumped into the Load Management Standards as well, and the
21 developing of the Midas rates database.

22 Joe Lawyer, (phonetic) one of his team's items
23 came up earlier today. The lead on the ATTCP Mechanical
24 Implementation for 2022 and is the lead technical staff on
25 the Field Verification Diagnostic Testing. It was very

1 detailed efforts and Joe really keeps that up.

2 We heard from Matthew Haro as well and the
3 compliance efforts that he's leading are just critical.

4 Bach Tsan relatively new to state service, but
5 has become the go-to technical lead on all things heat
6 pumps. So he rolled up his sleeves immediately upon coming
7 to the Commission.

8 Gavin Situ is support on the Low Management
9 Standards, and also really led the ACEEE work to help show
10 our best our best face in that ranking work.

11 Amber Beck has shown consistent leadership and
12 high-quality work on linking us to media, on outreach and
13 education with the Efficiency Division, and the ADA work to
14 make sure our website is all compliant. So thanks, Amber.

15 Payam Bozorgchami, who's the Technical Lead
16 working with Javier on the Building Standards and the code
17 development. And works nationally on a lot of the IECC
18 code processes and so they really benefit from Payam's
19 expertise as well.

20 I want to acknowledge also Heriberto Rosales and
21 Ronnie Raxter, who have, over the last number of years,
22 contributed a lot to the Efficiency Division, but are now
23 over at ERDD, both of them. Heriberto got the SB 68
24 website development started. And Ronnie was in the field
25 verification diagnostic testing and helped to get our

1 buildings benchmarking database up and running.

2 With respect to the Efficiency Division, I want
3 to just call out the legal team that has supported that
4 Division.

5 Jimmy Qaqundah and Kirk Oliver, Matt Chalmers,
6 have just consistently been available to help walk through
7 what are a lot of detailed efforts at the Efficiency
8 Division, so really just fantastic in different ways. Real
9 core staff for the Efficiency Division and helping us get
10 what needs to be done, done.

11 Let's see, I wanted to key up a few
12 accomplishments that the Division has done. So in terms of
13 hiring and onboarding, I wanted to call out Michael
14 Shewmaker, Trevor Thomas, Kyle Grewing and Che Nyendu,
15 really helped on the staffing efforts.

16 The Energy Code supporting documents for 2022,
17 again Bach Tsan, Haile Buchaneg, RJ Wichert, Michael
18 Shewmaker, Muhammad Saeed, Bach Tsan and Payam Bozorgchami.

19 The CBEC, or the modeling work in support of
20 Energy Code. It's really highly technical work and RJ,
21 Michael Shewmaker, Che Geiser, Tao Chau, Haider Alhabibi,
22 Trevor Thomas and Haile Buchaneg on that.

23 The 2025 prerulemaking, which is really hitting
24 its stride right now, the energy accounting work that we've
25 been working on hard for the last six months or so, Erik

1 Jensen, Danny Tam, Payam and Javier as well.

2 Outreach and education, it's an amazing team
3 we've got with Chris Olivera and Aimee Brousseau, Allen
4 Wong, Gagandeep Randhawa, Erik Jensen and Che Nyendu.

5 Let's see, I think on the existing buildings
6 front, we have a bunch of new staff that started this year,
7 that are doing great work. Stefanie Wayland, who is the
8 Load Management Lead as I said, Sue Lee, Diana Moneta. I'm
9 really excited to have Diana. Owen Howlett also coming
10 back to the Energy Commission. Bee Marie is a Student
11 Assistant and Cameron Lanzarote, a Student Assistant as
12 well on the benchmarking front.

13 The 2021 IEPR, you know reaching back to the
14 beginning of this year, but the 2021 IEPR and its adoption:
15 Heather Bird, Heriberto, Kristina Dulaglo, Tiffany Mateo,
16 Gabe Taylor, Michael Kenny, really drove that.

17 Load Management Standards, again Stefanie, Gavin,
18 Kirk, Corinne Fishman on the process side, just invaluable
19 as well as Tiffany and Heather.

20 And CCO, again Kirk Oliver but also Mike Murza,
21 who contributed to that tremendously, who will be back with
22 us at some point here in the next year.

23 The Equitable Building Decarb Program, just sort
24 of getting legislative support and kicking that program
25 off: Jim Nelson, Tiffany, Christina, Jacob Wahlgren.

1 And also from the Renewable Energy Division:
2 Deana, Larry Froess, Erica, Chuck, and Hally Cahssai.

3 We are getting there. Let's see, so I want to
4 move on to other divisions here. Well, actually let me
5 finish with the Standards Compliance Office and with the
6 Appliances Office. So a lot of accomplishment in the
7 Standards Compliance Office, and I just wanted to
8 acknowledge that staff. Lorraine we heard from, and Joe
9 Lawyer I have mentioned, Matthew Haro. But also Daniel
10 Wong, Julie Roberson, Maxwell Crosby, Kenzo Minami, Charles
11 Offerman, Armando Ramirez and Elmer Martell. Just that
12 team has accomplished so much this year so, thanks to them.

13 On the Appliances front: Ho Hwang, Livinus Ishaya
14 and Brian Shea in the FTS team were all hired in 2022. And
15 in the commercial fans and blowers, Alex Galdamez, as we've
16 seen several times at this meeting.

17 Our pool pump controls, Nich Struven and the rest
18 of the FTS team.

19 Water Efficiency rulemakings, I wanted to
20 acknowledge Jessica Lopez there for toilets and dipper
21 wells and landscape irrigation controllers. All those are
22 coming forward.

23 And then on the electronics front, we have a rock
24 star on that with Soheila Pasha, as well as general service
25 fluorescent lamps and just keeping our Appliance Standards

1 current and vital. So that's the Efficiency Division.

2 There's a lot of collaboration going on between
3 Efficiency Division and the Renewable Energy Division,
4 particularly on equitable building decarb. And then also
5 the finance programs that sit now in Renewable Energy
6 Division.

7 So first I want to acknowledge Deana who's just a
8 rock star and I don't know how she gets all this stuff done
9 she gets done, but there's a lot on her plate right now
10 with these new programs, with a huge infusion of budget
11 funds, including building decarb. So thanks to Deana in
12 hiring a bunch of great people and really creating a node
13 of expertise there. That's very powerful.

14 In the Admin, really, we rely on Armand Angulo
15 and Gigi Tien. Prop 39, Christopher Meyer, and Balraj
16 Sandhu, Monica Rudman and Ron Yasny. That program, which
17 is really wrapped up now and has been a shining light for
18 our competence in program administration.

19 The ECCA program: Matthew Jones, Marites Antonio
20 and Shawn Lockwood. The Cal EHP program, (phonetic) a new
21 program that's sort of the analog of the build program, or
22 market rate new construction, Hally Cahssai and Richard
23 Gibbs.

24 The build program itself, it's affordable new
25 construction multifamily. That's Camille Remy-Obad, Larry

1 Froess, Erica Chac, Adriana Dominguez, Susan Mills, Myoung-
2 Ae Jones and Steven Van.

3 CalSHAPE: Jonathan Fong, on the team, Houston
4 Garnier, Blake Campbell, Scott Polaske, Theresa Daniels,
5 Rene Kastigar, Zollyn Edjon, David Velazquez, O'Shea
6 Bennett, Victor Yakshin, Cenne Jackson and Kelsey Knight.
7 Just an incredible team, that program is an incredible
8 success. So thanks to all the ERDD people.

9 ERDD, so it's great to be partnering with the
10 Chair on ERDD and also chunks of it with Commissioner
11 Monahan as well.

12 On hydrogen, Kevin Uy is coming into his own,
13 leading that subject matter that subject. Daphne Molin and
14 Rizaldo Aldas as well.

15 On industrial Virginia Lew and Ilia Krupenich.
16 Ilia is awesome, as is Virginia. And the ethnic program
17 Virginia Lew and Cyrus Ghandi. The gas planning, Daphne
18 Molin and Nicole Dani.

19 The annual report, really Molly O'Hagan, Tiffany
20 Solorio and Jessie Rosales put that together, so thank you.

21 And cross cutting programs support, Doris
22 Yamamoto and Lisa Cortez really helped support that whole
23 division. And Jonah Steinbeck is just, you know after Lori
24 tenHope left I just think really his wings have grown
25 steadily. He's helping that that Division just be all it

1 can be and really step up in these incredible times of
2 opportunity.

3 So almost wrapping up here. So Executive Office,
4 I won't repeat what Commissioner Monahan said, but I did
5 want to just thank Drew, and Linda, as well as Heather.
6 Just for all the amazing leadership and just keeping on top
7 of all these details. I mean I feel like part of our
8 brains sit in the Executive Office, and then run as a nice
9 optimized hard drive that we don't have to really do much
10 with, so keeping track of things very competently and
11 capably.

12 I also want to just thank Jason Harville, our
13 data work is starting to flower and I think come into its
14 own and come out into the light. And really the
15 opportunities, the possibilities, are becoming clearer to
16 more and more people inside and outside the Commission.
17 That is really largely due to Jason's effort, keeping that
18 ball moving forward and growing that resource, making it a
19 resource that has the right capabilities, is done in an
20 incredibly robust and professional way, is safe and secure,
21 meeting all those cybersecurity protocols. Jason really
22 has set us up for success. And I think Vice Chair Gunda
23 and I are both just extremely excited about the
24 possibilities there and using IMD and all also data for
25 incredibly powerful policy assessment and planning in a

1 bunch of different areas. So Jason, just you are
2 acknowledged and seen.

3 On IT, I would just second a thanks to Jerome
4 Lee. He's just always helping free us from our Luddite
5 tendencies. He's just very capable, no drama, just getting
6 it done and helping us solve our technical problems.

7 Noemi, as Public Advisor, especially on language
8 diversity, and just diversity generally, together with
9 Carousel, just a total treasure. Thanks Noemi.

10 Dorothy, thank you as well, you're just an
11 exemplar of organization for these meetings and for
12 everything you do.

13 I would also second the kudos to Lindsay, just
14 incredibly high-level professional that's helping us get
15 our message out into the world and just so effective. So
16 thank you, Lindsay. And also Damien as well on the budget.
17 Whenever we need to know something, he seems to know it or
18 be able to find it out very fast and keep a lot of plates
19 spinning in the budget. It's very complex.

20 So wrapping up, I wanted to thank my two former
21 advisers that left me, left my office in 2022, Fritz Foo
22 and Bill Pennington. And welcome my new Advisors, David
23 and Morgan, and then thank also my ongoing Chief of Staff,
24 Bryan Early. But Fritz is over in ERDD now. And Bill is
25 back in the Efficiency Division. And they're both, I

1 think, rowing really hard and getting a ton of stuff done.
2 Bill on the Building Code and everything related and Fritz
3 keeping on hydrogen and other topics and ERDD.

4 Let's see, so with that the final person I wanted
5 to thank is Linda, who just left a little while ago. But
6 the quality of person and professional that is Linda
7 Barrera is just remarkable. And I think we're all
8 impressed with her. But just the integrity that she brings
9 to the Chief Counsel role is an incredible example to all
10 of us. And so we get the products we need, and she watches
11 out for the Commission, but does it in a way that I think
12 is just exemplary in terms of just her ethical grounding,
13 and her care.

14 So I will wrap it up there. Thanks very much.

15 CHAIR HOCHSCHILD: Vice Chair Gunda.

16 VICE CHAIR GUNDA: Thank you, Chair. Yea, this
17 is the time of the year to reflect on all the
18 accomplishments and share the sense of gratitude we have
19 for each other and everybody that supports the work that we
20 do here.

21 So I wanted to start with the 30,000-foot level.
22 We kind of do work plans a year ahead and look at all the
23 work we have, look at staff resources and how many
24 resources we need and what contracts we have to do. This
25 year we just blew past 100 percent of what we planned for.

1 You know, I started the year thinking I'm going to be
2 leading the IEPR and then I have reliability, which will be
3 a full plate. And then we had some staff time and
4 resources we thought through.

5 Starting with May revise, when the Governor put
6 out the budget just before that, supporting the May revised
7 budget of this incredible work that the Legislature and the
8 Administration has done in providing tools for reliability,
9 all the way from the point. We then added the Diablo
10 conversation. And then we had the heatwave. Then we went
11 into the petroleum prices and the crisis around that. So
12 it's been one thing after another this year and most of
13 that work was unplanned and not foreseen.

14 So I want to start by saying a big thank you to
15 the CEC family, and how much each one had to stretch this
16 year to really make things happen. It takes a lot of
17 people, especially in those unplanned, rapid work.
18 Especially when we're still working through the COVID
19 constraints and young parents trying to take care of kids
20 and many of us are taking care of our elders and other
21 people who need support. So just a big thank you.

22 I mean this opportunity of thanking everybody
23 doesn't do enough justice to just share the deepest of the
24 sentiments of gratitude and togetherness we feel as an
25 agency, and the common cause we all fight for every single

1 day.

2 So I have a lot of names. This is the only
3 opportunity we get, but maybe I'll just put it in a
4 document with all the names. I didn't do the same job as
5 Commissioner McAllister and Commissioner Monahan did. Such
6 a wonderful idea to actually have the slide and have the
7 names pop.

8 So usually most of my thank yous, I end with my
9 office, but I want to just begin with my office today. It
10 has been an extraordinary year, as I just mentioned. And I
11 want to thank the team in our office Ben Finkelor, who
12 started this year. What an incredible opportunity to work
13 with him. It's been an incredible pleasure to have him on
14 the team and continue to support us.

15 We had two interns, fellow working in our office
16 this year, John Reed and Aga Thikrowtha (phonetic) both
17 have done tremendous work as well (indiscernible) sorry,
18 three people. I just wanted a big, big thank you to them.
19 Terra Weeks who was known from the Chair's office to help
20 support the gas decarbonization, kind of a roadmap
21 coalition work that we're all doing in the office. Thank
22 you to Terra.

23 Liz Gill is a tremendous force and is working on
24 the SB 100 and reliability and all those things, so Liz
25 thank you to you. And Erik Lyon who has been really

1 focusing on the demand side work, especially the demand
2 response, the accounting processes around that, and
3 rethinking the opportunity for (indiscernible) and
4 distribute energy resources in the office, incredible mind
5 there. So thank you, Erik, for all your work.

6 And Miina Holloway who supports our office in the
7 in the executive assistant role, but she brings us all
8 together with her heart on her sleeve and supports
9 everybody every day. So Miina, Liz, Terra, Erik, and Ben,
10 we wouldn't be able to do anything that that we
11 accomplished this year without you guys. So thank you so
12 much for all the work.

13 I also want to mention Sudhakar Konala who was an
14 advisor. He has been on an extended leave of absence.
15 Wishing him a speedy recovery and also to his family for
16 all the work he has done over the years for CEC. We
17 continue to send our wishes for his ability to come back to
18 the CEC as quickly as he can.

19 There are a lot of divisions we all work on as
20 the general sentiment this year has been how much our work
21 has coalesced. So now there is no real distinction between
22 the divisions in the work we do. There's a lot of cross
23 cutting work, so rather than naming every one of the
24 deputies I just wanted to start at the top. Management is
25 such a core importance for running an organization. So all

1 the way from the Executive Office to the directors of the
2 divisions to the deputy directors and managers, thank you
3 for all the work you do.

4 And Drew, you -- I don't know, I mean this is
5 probably a time to roast rather than to say thank you to
6 (indiscernible) right now, but just thank you. You're more
7 than just a colleague. You've been a brother in kind of
8 helping me both embrace this role, but also supporting with
9 the clearest clarity of counsel as I try to tackle
10 different issues, and keeping the agency together with a
11 big heart. So thank you for all the work you do. And
12 Linda, who supports you. And all the executive officers
13 that report to Drew, just thank you.

14 And the division directors, I know there's a lot
15 of cross cutting work. Again, that meant you all had to
16 work across the divisions, but also in this COVID
17 environment, which we're still adjusting to the virtual
18 management style and such. So thank you all for the work
19 you're doing.

20 I want to spend a few minutes on the interagency
21 work. As I mentioned, a lot of this work would not be --
22 especially the reliability work we do cannot be
23 accomplished without the incredible coordination, support
24 and camaraderie that we are now seeing under the leadership
25 of Chair Hochschild, President Reynolds and President

1 Elliot Mainzer from CAISO. I mean, it's just a new
2 paradigm on how we all work together. So I just want to
3 note a few outside the organization names. Some are from
4 the Governor's office. We had a big retirement this year
5 Ana Matosantos, the Cabinet Secretary. I just want to make
6 a huge call out for the incredible efforts that she has
7 done in giving the agency the necessary tools to do good
8 work and have reliability.

9 Our former Commissioner, and now the Energy
10 Advisor to the Governor, Karen Douglas, and Anne Patterson,
11 Hesald Miranda, (phonetic) Lauren Sanchez, Christine
12 Hironaka. All of them are an incredible team at the GAO.
13 And the agencies need a lot of support to do the work we do
14 and it's so important that we get that support from the
15 GAO. I just want to be in gratitude to all of them.

16 CNRA, we have an incredible secretary, Secretary
17 Crowfoot, Amanda Hansen, Saul Gomez. And our own Le-Quyen
18 Nguyen, our Assistant Secretary for Energy and just a big
19 thanks. And the former Assistant Secretary for Energy,
20 Matt Baker, who's now at the CPUC, at the Public Advocate's
21 Office. So a big thanks to him.

22 And specifically I want to call out, given the
23 equity focus we all have Secretary Moisés Moreno-Rivera for
24 his leadership on equity.

25 And go down to my Commissioners here. It's a

1 family business and so we have all integrated across the
2 diversity of opinions and cultures and backgrounds we come
3 from. We do work as a family. And this is an incredible
4 opportunity to sit at the dais with all of them. And just
5 day in, day out, work towards a better California for oil.
6 It's just a privilege. Each one of them have supported me
7 both as a person, mentor, colleagues and just the
8 collective wisdom we have here, thank you all for your
9 incredible work that you do.

10 PUC Commissioners Alice Reynolds, Genevieve
11 Shiroma, Darcie Houck, John Daniels and Clifford
12 Rechtschaffen. I want to give a big shout out to
13 Commissioner Rechtschaffen who I think most of you know is
14 leaving at the end of this year, and his advisors Shawn
15 Simon and Sydney George, who have been working with us a
16 lot.

17 It's oftentimes hard for me to dig into that
18 level of clarity on seeing somebody as one of the most
19 remarkable human beings that I've come across. Clifford
20 Rechtschaffen is one of them. From the bottom of my heart,
21 Cliff, thank you for your years of service, the love and
22 generosity you show people and the things that you move for
23 the State of California. I look forward to celebrating
24 your retirement and really roasting you at the soonest
25 opportunity.

1 Our colleagues from CPUC in terms of Liam,
2 (phonetic) Pete Skala, Simon Baker, Alope Gupta, Matt
3 Caldwell, who we all work with. (Indiscernible) Neil
4 Miller, Mark Rockleader, (phonetic) Stacey Crowley and
5 Delphine Hou, who are all partners in the work we do.

6 And finally Chair Randolph from CARB.

7 We also benefited with a lot of support from DWR
8 this year, Director Nemeth and a few staff, Behzad
9 Soltanzadeh, Soltan Jheri (phonetic), Ted Craddock, Jorge
10 Quintero, Tony Meyer, Scott Flake and Joe Ledesma. Thank
11 you for all the work you have done in keeping the lights on
12 for this state.

13 We have a couple of consultants outside of the
14 state apparatus. We have former CPUC Commissioner Mike
15 Florio and Katie Elder who are consultants on the gas side.
16 And I just want to thank them for their work. As well as
17 Sayez Japgar (phonetic) from Workforce Development and Moly
18 Rohimah from GO-Biz. So just those are my high-level names
19 for teams outside.

20 So I want to dig into a few people at CEC. As I
21 mentioned, it's hard to note every single person. But most
22 of my work falls on the shoulders of EAD with a little bit
23 of renewable steam this year, as well as STEP team. So
24 EAD, Aleecia Gutierrez, who's the Director of the Division,
25 for her leadership and for kindness and warmth as she

1 cultivates a new division. It's been a tremendous amount
2 of work.

3 One of the core things that's been happening to
4 the Assessments Division is that we went from a mostly
5 planning division, where we're trying to develop some
6 planning assumptions for the state around procurement and
7 other things to now more policy ideation and policy
8 recommendations team that request a completely different
9 way of thinking, different kinds of analytical tools that
10 we need. And so Aleecia, to you and David Urn, Heidi
11 Javonbach, Amanda Bourdet, (phonetic) for your leadership
12 and management in making sure that it is cultivating that
13 and being a force for good for both the CEC and the rest of
14 the state.

15 A few names that I want to call out, Hilary Poore
16 for her work on the IEPR this year. Jennifer Campagna on
17 the natural gas. Quenton Gee on transportation. Tom Flynn
18 on DER work and the demand response work. Melissa Jones,
19 now in STEP, but really has been a force of nature for us
20 and EAD, and her contributions on a lot of different work,
21 but this year natural gas. Mark Kootstra, Hannah Craig,
22 Chie-Hong Yee-Yang on the analytics required for the
23 reliability analysis, as well as our consultants, Lorenzo,
24 Christophe has been in Navigant.

25 On the data work, Jason Harville was already

1 mentioned, but to reiterate, Jason, thank you for all the
2 work and setting us up for success.

3 On the IEPR team, Heather Raitt, Dennis Costas,
4 Stefanie Bailey, Gale Kravitz, thank you. Thank you so
5 much for making this year's IEPR a pleasure and for all the
6 work you've done to make sure the workshops went well, but
7 also the regional work that we've done this year and making
8 and facilitating all that.

9 Grace Anderson and Chris McLean, I want to note
10 your special work on the western regionalization workshop,
11 which was an important thing that we needed to do. And
12 then the broad regional engagement that Noemi has really
13 helped cultivate along with Katrina. Thank you both for
14 your vision and efforts to making sure we delivered on our
15 work on going regional with IEPR.

16 And so I want to thank Kern County, Imperial
17 Valley, Riverside County and Ventura County, for hosting
18 us, for giving us the experience with boots on the ground,
19 to really be able to tell the story of energy transition.

20 From renewable steam, Deana Carrillo and Ashley
21 Emery, thank you for your work on both shaping the policies
22 around the strategic reserve for the state. And also now
23 taking the incredible role of implementing them and getting
24 us through September 6 this year. Thank you, renewable
25 steam.

1 ERDD, I don't get to work with the ERDD as much,
2 but we are intersecting more and more. Jonah, thank you
3 for your work, Kevin Uy, Virginia Lew, Erik Stokes and Mike
4 Gravely, for your contributions on the IEPR this year, as
5 well as a long duration storage and partnership
6 (indiscernible) issues.

7 FTD Hannon Rasul, the Director. Siting, I can't
8 be more grateful that Elizabeth Huber came in right after
9 Sean Pittard was leaving. It was kind of a panic mode when
10 Shawn was leaving. I think because of his incredible grace
11 and work that he has done over the years for the state, it
12 was worrisome when he was leaving, but Elizabeth thank you
13 for stepping into the shoes and really helping Siting
14 really embrace this broader vision of reliability and
15 resource planning and resource transition for the state.

16 Along with them my work has been intersecting a
17 lot with Erica on the land use screens and the planning
18 work she is leading. So thank you, Erica. And Rhetta
19 deMesa for brief work we've done on SB 100 intersection
20 with some of the opportunities with offshore wind, so thank
21 you.

22 Our CCO has been a backbone and a force this
23 year. Linda Barrera leading from the front again. I have
24 no idea how many days and nights and weekends she has
25 worked this year. I am glad that she continues to enjoy

1 the pain and stay with the CEC. And I hope she doesn't go
2 anywhere with this level of work. But Linda, thank you.
3 Thank you for modeling in what a true leader is and guiding
4 that office so beautifully.

5 And Lisa DeCarlo, it was such a pleasure to work
6 with you directly this year on a number of things that
7 touched reliability.

8 Kristen Driskell, as well as Renee Webster-
9 Hawkins and Susan Cochran, my first work on some of the
10 STEP intersection. So thank you, it was wonderful.

11 I didn't really know before I became a
12 Commissioner, how important the comms team was. I always
13 knew they had a lot of work, but man they're such an
14 important cog in the wheel especially during this
15 transition, to make sure the messaging is right. And that
16 we're able to tell the story of where we are going and
17 reduce confusion and improve transparency. So Lindsay
18 Buckley, for your work, and Sandy Louey for your wonderful
19 work in supporting EAD.

20 I already mentioned Noemi Gallardo. She was
21 formerly in PAO. But Mona, it's a pleasure working with
22 you. She's in the room. You were good at IEPR, but also
23 in embracing this role in PAO. Thank you for your work.

24 And Dorothy Murimi, who I affectionately call
25 "Chief," Chief thank you for your work and embracing new

1 work and always doing that with a smile and respect to
2 everybody.

3 And Katrina Leni-Konig for your work in
4 facilitating the engagement we have been doing with the
5 tribes.

6 This year was definitely an opportunity for me to
7 meet with some of the tribal leaders. I just want to call
8 out Carmen Lucas from the Kwame Laguna tribe of Northfolk
9 Rancheria, Mona Indians at Martinez desert, Indians.
10 Specifically Chair Joseph Morales and Council Member Richie
11 Lopez for their work during the IEPR and supporting the
12 conversations. Thank you to everybody.

13 I'm kind of getting there, government and
14 international relationships. I already mentioned Alana for
15 her support. But also we had a member from the UK, second
16 to our agency, Meesha Patel, in her work in supporting the
17 international engagement. Specifically my international
18 engagement this year intersected with two colleagues from
19 the State of California, Dan Jacobson and (indiscernible)
20 for their work as well.

21 All the DACAG members for your incredible
22 generosity in helping us move forward with equity as a
23 foundation and helping us with the political decisions that
24 we make as an agency. Thank you all.

25 And stakeholders. We have many stakeholders.

1 But I want to call out a couple that I really had an
2 opportunity to not only understand the diversity depth of
3 California, but having the importance of different members
4 at the table, talking it through and how to move along
5 together.

6 Silvia Paz, in the Alianza Coachella Valley,
7 (indiscernible) and Central Coast Alliance United for
8 sustainable economy, Cause Lucas thank you for your work.
9 Laurie Pezzente with DHF for her grace and sharing a story,
10 sitting at the table with Tanya Derevey, to both of them
11 from (indiscernible) and having a conversation on how to
12 move the state forward by finding common ground.

13 So I wanted to acknowledge courageous leaders who
14 are taking the first steps or continue to take the steps in
15 finding common ground and moving the state forward.

16 We have done a lot of regional engagement things,
17 as I mentioned before. I specifically want to call out
18 Chancellor Sonya Christian of the current Community College
19 District, for her embrace of our work, and really
20 continuing a dialogue with us over the last year along with
21 Dave Tisdale and Nicole Parra and the whole team there.
22 Laurie Pezzente (phonetic) from (indiscernible) your
23 foundation as well.

24 And finally to end with this, I just want to
25 thank the Governor and the Legislature for the vision and

1 the courage and boldness to make a number of difficult
2 decisions this year in helping pull the state together.

3 And I want to end with a note of my family
4 without whom I can't do this work. So to Courtney, for
5 taking the time to let me do my work. And my kids for
6 sharing me with the work we do and how long it takes to get
7 the work done. Sometimes I'm an absent father and a
8 partner and to my parents who I haven't seen for three
9 years now, because of COVID. Just my family, my rock. So
10 thank you.

11 CHAIR HOCHSCHILD: Thank you, Vice Chair.

12 Commissioner Vaccaro.

13 COMMISSIONER VACCARO: Thank you, I'm going to
14 keep my remarks fairly brief. I think oftentimes, those of
15 you who work with me here at the Commission, you often know
16 what I think. And I tend to lead and operate from my head.
17 And I think I just have a few brief remarks that are more
18 about how I feel and just sort of from the heart.

19 So I feel truly privileged. I think it's an
20 honor to be able to serve in this role, and to serve the
21 people of California. And today marks just over nine
22 months of my service as a Commissioner. And I feel that I
23 owe a tremendous debt of gratitude to so many of you here
24 at the Commission for helping me learn my new role and
25 transition.

1 I've been here since 2009. I've worked in many
2 different capacities here and it wasn't until this role,
3 that I had greater visibility into how things get done
4 Commission wide and who's involved. And truly, it's
5 everyone.

6 And so instead of calling out specific
7 individuals and divisions, I think I'd really just like to
8 extend my thanks and appreciation to each and every CEC
9 employee, and my colleagues here on the dais. Our staff
10 comes every day, as do you, with creativity, rigor,
11 resilience, perseverance, and determination to meet our
12 climate and clean energy goals. And we do this, every
13 single one of us, while facing personal challenges and
14 adversity, working long hours. We shed tears, we laugh, we
15 develop relationships, and much more.

16 So I think I just want to say that I have a
17 tremendous admiration for the Energy Commission team. And
18 every day it is my privilege to come in and work with every
19 single person who makes this work so meaningful.

20 So with that, thank you

21 CHAIR HOCHSCHILD: Beautifully said,
22 Commissioner, and everyone really.

23 And I'd actually like to begin with all of you as
24 well. And in particular to the ecosystems of support that
25 allow each of you to be in these roles. You mentioned your

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1 family, and I know yours, Commissioner and yours as well
2 and how much we rely on that support, particularly when
3 work gets really stressful.

4 And I know, there's no debate about it in my
5 household, I fall short at home. I wouldn't be able to do
6 this work without my wife and my girls understanding and
7 supporting me. So I'm so grateful for the ecosystem of
8 support you all have to allow you to serve in this way and
9 the way we can support each other as well.

10 Drew, you're literally the last person in the
11 audience, so I will just focus on you. I just am so
12 grateful for the incredible, relentless, relentless energy
13 you bring to everything. And the wheels never stopped
14 turning in ways large and small. You are the driving force
15 behind the implementation and so much of the vision we
16 create.

17 And this agency, I will say it again we are
18 punching above our weight class. We are punching above our
19 weight class. And I'm incredibly proud but that's because
20 of the people we have. And we're so blessed to have you in
21 that role.

22 So my team, my thanks to Jamie Garbo, Ken Rider,
23 Terra Weeks, Kat Robinson, Noemi Gallardo. All of them
24 energetic and relentless. Joe Steinbeck at ERDD, thank you
25 for your amazing leadership. You had big shoes to fill

1 when Laurie left and you've done that along with Angie
2 Goldberg, Eric Stokes, and the rest of the whole ERDD team.
3 I also want to recognize Linda Spiegel, your deputy, Drew.
4 Linda Barrera, Lindsay Buckley on comms, incredible work
5 this year. Anna Ferrera, Mona Badie, Damien Mimnaugh on
6 budget and Dorothy, you've been wonderful.

7 So I will stop there and just to extend my
8 gratitude to the whole Energy Commission family. And again
9 we will do Commissioner updates for the year at our final
10 meeting, which is December 28 if I'm remembering correctly.
11 So we'll turn now to Item 11, Executive Director's Report.

12 (Off mic colloquy re: audio issues.)

13 DIRECTOR BOHAN: Thank you. My apologies got a
14 little thrown off. First Linda B wanted me to share her
15 regrets. She has her team party this afternoon and I think
16 wisely moved to that.

17 I want to just start by thanking you all for your
18 leadership and it really starts with you guys. And it's a
19 great pleasure to be able to serve you. So thank you. And
20 I also want to thank you for acknowledging so many members
21 of our team. I know they really appreciate it.

22 I will second but not repeat all the kudos that
23 you shared. But I do want to mention each of my direct
24 reports individually, I have 15 of them. That's a lot of
25 people to supervise. But when you supervise such dedicated

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1 leaders, it actually is quite easy. You all know
2 management can be very, very difficult and at times it is.
3 But with this team it is sometimes more getting out of the
4 way than it is supervising. So I'm grateful to all them.

5 Deputy Directors first: Rob, Mike and Hannon.
6 You've mentioned all of them. They are now our veteran
7 deputy directors. Each has been with us for over two years
8 and each is just rock solid.

9 Really quickly, Rob's been our steady Eddie, he
10 does all the dirty work that nobody sees in admin and keeps
11 things running there and I'm grateful for all of that.

12 Mike runs one of the more complicated divisions
13 which with a bunch of different things going on, and he's
14 being tapped by different parts of the organization for
15 what he does. Thank you, Mike, for always being nimble.

16 Hannon, as Patti pointed out, is just incredibly
17 entrepreneurial. Is always looking for ways to make our
18 money go further and to advance the ball as cleverly as
19 possible.

20 Aleecia is in the middle. Her two-year
21 anniversary is coming up in March. And Jonah just
22 celebrated his one-year anniversary in September. Aleecia
23 probably has the most complicated division, at least for
24 me. The concepts that her team and she deal with, I find
25 often very, very complicated. She handles them all in

1 juggling a ton of balls.

2 Jonah, it seems like he just started but he's
3 been here over a year. Similarly, there's the breadth of
4 what research takes on is amazing. And he's just
5 consistently even keeled and wonderful to deal with.

6 Deana and Elizabeth are newbies. They just
7 started this year, but both bring a wealth of experience,
8 and you'd never know that they were they're relatively new
9 to their roles. Deana can roll up her sleeves and write a
10 complicated report on the one hand and manage a large team
11 as well. Elizabeth, similarly very detail oriented, makes
12 great relationships particularly with the PUC this year.
13 And that rounds out the deputies that I want to just thank
14 them all individually.

15 Small office directors. Heather is in her 14th
16 year with the Commission, about half of those as our IEPR
17 Lead. You rightly noted her steady leadership. She's calm
18 in the face of constant change and constant disruption.
19 It's just the nature of the IEPR, but she handles it very
20 effectively.

21 Lisa, she built the audit unit and she's been
22 there for over eight years. She's retiring in March. I
23 wish her the best, but I'm already nervous. Those are some
24 big shoes to fill.

25 Jason, thank you for the call outs from some of

1 you. He started in 2018, but he's been in the data unit
2 for just over two years. He's built the best state level
3 energy data operation in the world, best subnational
4 operation in the world.

5 Carousel just celebrated her third anniversary,
6 but it doesn't seem to me like it's three years. I don't
7 know about you, but it seems like she's been here forever.
8 And she's really the pulse of the organization and she will
9 take anyone she her job is to listen. Often its problems,
10 but she brings -- she's a great referee and she just brings
11 that equanimity that that job requires.

12 And Mani (phonetic) has been with us for years
13 but stepped into the lead role in enforcement just this
14 year and is doing a fantastic job. Enforcement is tricky.
15 It's not just about punishment. It's about education, and
16 showing people how to do things properly and not coming at
17 it with just a just an enforcement mindset and she does
18 that very well.

19 Each of these leaders manages a team. Some are
20 bigger than others. But what they all have in common is,
21 and all these leaders have in common, is strong leadership.
22 That's where it starts. They all have subject matter
23 knowledge, some more than others depending on how long
24 they've been in their role. But they all know that they
25 have to understand the subject matter at some level. Each

1 is a strategic and creative thinker. And humility, they
2 all bring humility to this role.

3 Finally, I just want to say our core values at
4 the staff level of SEA, Service Excellence and
5 Accountability, they all exemplify every day. So our
6 client is the public. We serve the public. They don't
7 need reminding of that. Excellence is something we try to
8 do in everything we do, in the products we create and the
9 way we treat people, in the way we manage and treat
10 everyone with dignity, and the way we conduct ourselves
11 regarding equity. That's all, excellence is about a lot of
12 different things.

13 And finally, accountability, the ANFCA,
14 (phonetic) we're accountable to each other. And most
15 importantly though to our client, again the public.

16 Finally, I want to call out my office and
17 Victoria, who mainly supports Linda but helps in multiple
18 ways. Gaylene, who you all know does literally anything
19 that's needed. I think she's probably worked for each of
20 you at some point or another, probably multiple times. I
21 know some longer than others, Commissioner McAllister, but
22 she is just a giant.

23 And Linda, my partner in crime who's always
24 willing to step in, in small ways and large. I can say
25 anything to her, get her advice. She's a straight shooter.

1 She'll sometimes say that's a crazy idea, why would you
2 even think of that? That kind of a kind of advice and
3 counsel and trust, just you can't buy.

4 This core team is also so bright and light and
5 dedicated and just a lot of fun to work with. You
6 sometimes forget a sense of humor and fun are a part of
7 making a day go from incredible slog and a real pain to
8 enjoy more fun. And I like the point you made about us
9 being a family, Vice Chair. It feels that way a lot.

10 In closing I'm grateful to each of these folks
11 who together manage most of the 700 staff that keep this
12 train running. They work every day. They show up and they
13 give it their all. And we're so fortunate. Our strength
14 is our people. And we have some of the best, most
15 dedicated, most hard-working staff anywhere in the world.
16 I'd put this team up against anyone. We pull rabbits out
17 of the hat routinely. And it's a remarkable thing. It's a
18 great honor to serve you, this organization, and ultimately
19 the public.

20 And I finally want to say the same thing about my
21 family. I have my sneaky way of getting a lot of work
22 done, which is in the TV room at night. Sometimes we'll be
23 watching TV and I'm sitting there with my computer,
24 slipping in a few extra tasks that need to get done.

25 And I'll close by saying thank you again very

1 much.

2 CHAIR HOCHSCHILD: Well, thank you so much. I
3 believe the Public Advisor's Report is going to be put off
4 until the next meeting on December 28. So we'll turn now
5 to Item 13, Public comment.

6 MS. MURIMI: Thank you, Chair. So this is the
7 period in the agenda for any person wishing to comment on
8 information items, or reports of the meeting agenda, or any
9 other item. Each person has up to three minutes to comment
10 and comments are limited to one representative per
11 organization. We may reduce the common time depending on
12 the number of commenters. After you're called on, please
13 restate and spell your first and last names, state your
14 affiliation if any. Again for those in the room use the QR
15 codes located in the back. For those joining via Zoom use
16 a raise hand icon and for those calling in press *9.
17 Please do not use the speakerphone feature or it will make
18 it hard to hear you.

19 So I'll begin with those in the room. Seeing
20 none, we'll move onto Zoom. Seeing no comments, Chair, I
21 hand the mic back to you.

22 CHAIR HOCHSCHILD: Okay. I don't believe we're
23 going to go into a closed session, Drew, unless you've
24 heard otherwise. So I think we will not take up Item 14,
25 so we are adjourned. Thanks everybody.

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(The Business Meeting adjourned at 3:09 p.m.)

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CERTIFICATE OF REPORTER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 30th day of December, 2022.



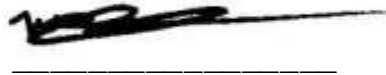
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And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 30th day of December, 2022.



Myra Severtson
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