

DOCKETED

Docket Number:	20-BUSMTG-02
Project Title:	Public Comment on California Energy Commission Business Meetings
TN #:	233920
Document Title:	Transcript of the July 8, 2020 Business Meeting
Description:	N/A
Filer:	Cody Goldthrite
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	7/17/2020 12:44:33 PM
Docketed Date:	7/17/2020

BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

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

REMOTE ACCESS ONLY

The California Energy Commission's June 10, 2020 Business Meeting will be held remotely, consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from the California Department of Public Health to encourage physical distancing to slow the spread of COVID-19. The public is able to participate and observe the meeting consistent with the direction in these Executive Orders. Instructions for remote participation can be found in the notice for this meeting and as set forth below in this agenda.

WEDNESDAY, JULY 8, 2020

10:00 A.M.

Reported by:
Peter Petty

APPEARANCES

Commissioners (Via Remote)

David Hochschild, Chair
Janea Scott, Vice Chair
Karen Douglas
Andrew McAllister
Patricia Monahan

Staff Present: (Via Remote)

Drew Bohan, Executive Director
Darcie Houck, Chief Counsel
Noemi Gallardo, Public Advisor
Cody Goldthrite, Secretariat
Patricia Carlos, Chief Counsel's Office
Nicholas Oliver, Staff Attorney

	Agenda Item
Fritz Foo	2
Steven Kerr	3
John Heiser	4
Danny Tam	5
Kevin Chou	6
Hannah Craig	7
Mike Gravely	8
Jeffrey Sunquist	8
Quenby Lum	9
Tanner Kural	10

Others Present (Via Remote)

<u>Interested Parties</u>	Agenda Item
Sarah White, BW Research	2
Philip Jordan, BW Research	2
Scott Galati, DayZen, LLC, representing Digital Digital Realty	3
Dan Thompson, Terra-Gen	4
Amanda Johnson, LSA Associates	4
James Hendry, SFPUC	6
Amanda Johnson, Imperial Western Products	7
Mark Buhler, Antelope Valley Water Storage	9
Josh Simmons, Prosper Sustainability, LLC	9
Ram Narayanamurthy, EPRI	9
Zora Chung, ReJoule Inc.	10

APPEARANCES (Cont.)

Others Present (Via Remote)

<u>Public Comment</u> (Via Remote)	Agenda Item
Licha Lopez, PG&E	5
Ashley Armstrong, AO Smith	5
Pierre Delforge, NRDC	5
Ankur Maheshwari, Rheem Manufacturing	5
Steven Uhler, Self (comments read into the record)	6
Scott Galati, DayZen, LLC	15

I N D E X

	Page
Proceedings	8
Items	
1. Consent Calendar. (Items will be taken up and voted on as a group. A commissioner may request that an item be moved and discussed later in the meeting.)	9
a. IMPERIAL IRRIGATION DISTRICT	
b. VELOZ	
2. Informational Presentation on the 2020 California Energy and Employment Report	13
3. Lafayette Backup Generating Facility (20-SPPE-02)	33
4. Solar Energy Generating Systems VIII and IX (88-AFC-01C and 89-AFC-01C)	36
5. Heat Pump Water Heater (HPWH) Demand Management Systems	42
6. Renewables Portfolio Standard 2014-2016 Compliance Period 2 Verification Results Report (18-RPS-02)	59
7. Imperial Western Products, Inc. A California Corporation - Food Production Investment Program (GFO-19-901)	67

I N D E X (Cont.)

	Page
8. Assessing Long-Duration Energy Storage Deployment Scenarios to Meet California's Energy Goals - GFO-19-308	70
a. ENERGY AND ENVIRONMENTAL ECONOMICS, INC.	
b. THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, ON BEHALF OF THE MERCED CAMPUS	
9. Demonstrating Long Duration and Title 24-Compatible Energy Storage Technologies - GFO-19-306	83
a. RINCON BAND OF LUISEÑO INDIANS	
b. INDIAN ENERGY LLC	
c. GRID ALTERNATIVES	
d. INDIAN ENERGY LLC	
e. MISSION PRODUCE, INC.	
f. ANTELOPE VALLEY WATER STORAGE, LLC	
g. THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, RIVERSIDE	
h. BOXPOWER INC.	
i. ELECTRIC POWER RESEARCH INSTITUTE, INC.	
10. Validating Capability of Second-Life Batteries to Cost-Effectively Integrate Solar Power for Small-Medium Commercial Building Applications - GFO-19-310	92
a. SAN DIEGO STATE UNIVERSITY RESEARCH FOUNDATION	
b. REJOULE INCORPORATED	

I N D E X (Cont.)

	Page
11. Minutes	101
12. Lead Commissioner or Presiding Member Reports Member Reports	103
13. Executive Director's Report	119
14. Public Adviser's Report	121
15. Public Comment	44, 122
16. Chief Counsel's Report	123
a. Pursuant to Government Code Section 11126(e), the CEC may adjourn to closed session with its legal counsel to discuss any of the following matters to which the CEC is a party:	
i. <i>In the Matter of U.S. Department of Energy (High Level Waste Repository) (Atomic Safety Licensing Board, CAB-04, 63-001-HLW); State of California v. United States Department of Energy (9th Cir. Docket No. 09-71014)</i>	
ii. <i>Communities for a Better Environment and Center for Biological Diversity v. Energy Resources Conservation and Development Commission, and California State Controller, (Alameda County Superior Court, Case No. RG13681262)</i>	
iii. <i>State Energy Resources Conservation and Development Commission v. Electricore, Inc. and ZeroTruck (Sacramento County Superior Court (34-2016-00204586)</i>	

I N D E X (Cont.)

	Page
22. Chief Counsel's Report (Cont.)	123
iv. <i>Natural Resources Defense Council, Inc., et al. v. United States Department of Energy</i> (Federal District Court, Northern District of California, (17-cv03404)	
v. <i>City of Los Angeles, acting by and through, its Department of Water and Power v. Energy Commission</i> (Los Angeles Superior Court, Case No. BS171477).	
vi. <i>In re: PG&E Corporation and In re: Pacific Gas and Electric Company</i> (United States Bankruptcy Court, Northern District of California, San Francisco Division, Case No. 19-30088)	
vii. <i>Chukwuemeka (Emeka) Okemiri v. California Energy Commission, et al.</i> (Sacramento Superior Court, Case No. 34-2018-00246019)	
viii. <i>State Energy Resources Conservation and Development Commission v. HyGen Industries, Inc.</i> (Sacramento County Superior Court, Case No. 34-2019-00252543)	
xi. <i>Olson-Ecologic Testing Laboratories, LLC v. CEC.</i> (Orange County Superior Court Case No. 30-2019-01115513)	
b. Pursuant to Government Code Section 11126(e), the Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published..	
Adjournment	124
Reporter's Certificate	125
Transcriber's Certificate	126

P R O C E E D I N G S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

JULY 8, 2020

10:01 a.m.

CHAIR HOCHSCHILD: Good morning, everyone. And we'll begin on this live Business Meeting. We plan to press ahead with our agenda until 12:45. If we're not done at that time we'll assess whether to continue or take a break for lunch. If we take a break for lunch we will set a fixed time to return. With that, let me ask all of the Commissioners to unmute and join for the Pledge of Allegiance.

(Whereupon the Pledge of Allegiance is recited.)

CHAIR HOCHSCHILD: Thank you. And before we move into the agenda I just wanted to make another appeal to everyone to continue to be vigilant and diligent about using face masks. There's a lot of things we still don't understand about this COVID-19 Pandemic. But one thing about which there is consensus is that wearing face masks helps, so if you're meeting some people as you go about your day and you're outside to please continue to wear face masks and help us all contain this pandemic.

So today's Business Meeting is being held remotely without a physical location for any participant consistent with Executive Orders N-25-20 and N-29-20 and the recommendations from the California Department of Public Health to encourage social distancing in order to

1 slow the spread of COVID-19.

2 The public may participate and/or observe the
3 meeting consistent with the direction in these executive
4 orders. Instructions for remote participation can be found
5 in the notice for this meeting as set forth on the agenda
6 posted to the CEC website link for the Business Meeting.

7 Pursuant to California Code Regulations Title 20,
8 Section 1104(e), any person may make oral comments on any
9 agenda item to ensure the orderly conduct of business.
10 Such comments will be limited to three minutes per person
11 as to each item listed on the agenda that will be voted on
12 today. Any person wishing to comment on information items
13 or reports (non-voting items) shall reserve their comment
14 for the general public comment portion of the meeting
15 agenda and shall have three minutes total to state all
16 remaining comments.

17 So today we're going to be seeking to approve
18 grants in excess \$32 million. I just want to point out
19 building on last Commission's meeting where we did \$93
20 million these are helping our state's economic recovery.
21 And the role of the innovation sector is really, really
22 important. So we're all mindful of the need for that.

23 So let's turn now to the Consent Calendar. These
24 items are typically voted on as a group. However today I'm
25 going to take Item 1b off the consent agenda to address and

1 vote on that separately. So we'll start with Item 1a, the
2 Imperial Irrigation District. Are there any public
3 comments on Item 1a Noemi?

4 MS. GALLARDO: This is Noemi, the Public Advisor.
5 No written comments. I'll defer to Patricia Carlos to see
6 if there's anyone on the line for comment.

7 MS. CARLOS: This is Patricia. There is nobody
8 on the line to comment.

9 CHAIR HOCHSCHILD: Okay. Let's move to
10 Commissioner discussion. So I will just go one by one if
11 you have any comments before we vote. Vice Chair Scott?

12 VICE CHAIR SCOTT: No comments.

13 CHAIR HOCHSCHILD: Commissioner Douglas?

14 COMMISSIONER DOUGLAS: No comments.

15 CHAIR HOCHSCHILD: Commissioner McAllister?

16 COMMISSIONER MCALLISTER: No comments.

17 CHAIR HOCHSCHILD: Commissioner Monahan?

18 COMMISSIONER MONAHAN: No comment.

19 CHAIR HOCHSCHILD: Okay, I'll entertain a motion.
20 Madam Vice Chair, would you be willing to make the motion?

21 VICE CHAIR SCOTT: Yes, I move approval of Item
22 1a.

23 CHAIR HOCHSCHILD: Okay, Commissioner McAllister
24 would you be willing to second?

25 COMMISSIONER MCALLISTER: I'll second.

1 CHAIR HOCHSCHILD: Okay, all in favor?
2 Vice Chair Scott?
3 VICE CHAIR SCOTT: Aye.
4 CHAIR HOCHSCHILD: Commissioner Douglas?
5 COMMISSIONER DOUGLAS: Aye.
6 CHAIR HOCHSCHILD: Commissioner McAllister?
7 COMMISSIONER MCALLISTER: Aye.
8 CHAIR HOCHSCHILD: Commissioner Monahan?
9 COMMISSIONER MONAHAN: Aye.
10 CHAIR HOCHSCHILD: And I vote aye as well. That

11 item passes unanimously.

12 For Item 1b, which is related to a contract with
13 Veloz, I am recusing myself, because I'm currently serving
14 on the Public Policy Advisory Committee of Veloz. I have
15 no personal economic interest related to Veloz. I have not
16 received any reimbursement or per diem for my service on
17 the Advisory Committee. However, to avoid the perception
18 of a conflict of interest I am recusing myself from voting
19 on Item 1b. I will place my device on mute, exit the room,
20 and then the Chief Counsel will text me when the vote is
21 over. And I'll turn it over to Vice Chair Scott.

22 VICE CHAIR SCOTT: All right, good morning.
23 We'll wait until we see that empty chair. Okay, good
24 morning. Prior to the vote on Item 1b, I am also
25 disclosing my role as a founding member of Veloz and that I

11

1 previously served on its Public Policy Board. My service
2 to the organization has ended. I have not received any per
3 diem or reimbursements from Veloz while serving on the
4 Energy Commission as a Commissioner, including in the last
5 12 months. So with that disclosure let's turn to public
6 comment. Let me see, Noemi any public comment on your end?

7 MS. GALLARDO: No written comments. I'll defer
8 to Patricia for anyone on the line. Anyone on the line,
9 Patricia?

10 MS. CARLOS: This is Patricia, there's nobody on
11 the line.

12 VICE CHAIR SCOTT: Okay. All right let's move to
13 the Commissioner discussion. I will call on you one by one
14 to see whether you have comments. I have no comments.

15 Commissioner McAllister?

16 COMMISSIONER MCALLISTER: No, no comment.

17 VICE CHAIR SCOTT: Commissioner Douglas?

18 COMMISSIONER DOUGLAS: No comment.

19 VICE CHAIR SCOTT: Commissioner Monahan?

20 COMMISSIONER MONAHAN: No comment.

21 VICE CHAIR SCOTT: All right, so with no
22 discussion I will now entertain a motion. Commissioner
23 Douglas, would you be willing to move the item?

24 COMMISSIONER DOUGLAS: Yes, I move Item 1b.

25 VICE CHAIR SCOTT: Commissioner McAllister, would

12

1 you be willing to second?

2 COMMISSIONER MCALLISTER: I will second Item 1b.

3 VICE CHAIR SCOTT: All right, so let's now take a
4 vote. I will call on you one by one.

5 Commissioner Douglas?

6 COMMISSIONER DOUGLAS: Aye.

7 VICE CHAIR SCOTT: Commissioner McAllister?

8 COMMISSIONER MCALLISTER: Aye.

9 VICE CHAIR SCOTT: Commissioner Monahan?

10 COMMISSIONER MONAHAN: Aye.

11 VICE CHAIR SCOTT: And I also vote in favor. So
12 it is 4 to 0 approved with one abstention.

13 With that, I will ask our Chief Counsel to kindly
14 text our Chair, so he may return. And we'll pick up with
15 Item 2 when we see him. And you're still muted, David.

16 CHAIR HOCHSCHILD: Thank you, Madam Vice Chair.
17 That was my first virtual recusal, so good to know that can
18 work. Let's move on.

19 So to Item 2, Informational Presentation on the
20 2020 California Energy and Employment Report, Commissioner
21 McAllister if you'd be willing to introduce the presenter?

22 COMMISSIONER MCALLISTER: For sure, so Fritz Foo,
23 an Advisor in my office, will be presenting this item. And
24 with this I guess I'll do a slight preamble, hopefully I'm
25 not stealing any of Fritz's talking points. But many of

13

1 you know I've been involved with NASEO and I'm the current
2 Chair of the National Association of State Energy
3 Officials. And NASEO actually has a really kind of
4 important role in the Washington DC context in that it
5 really makes sure that states are taken care of in the
6 conversation in federal discussions around legislation and
7 other policy issues.

8 And one thing that happened in the change of
9 Administration from Obama to the Trump Administration was
10 that the Department of Energy stopped doing what it had
11 been doing for a few years under Secretary of Energy Moniz,
12 which was developing The U.S. Energy and Employment Report.
13 And that came out some months ago for the nation. And the
14 reason I'm mentioning NASEO is that they picked up as a
15 fiscal sponsor of that work and kept it going. So that
16 there's now this longitudinal effort over now six years, I
17 believe, with the same firm doing it, BW Research. We're
18 going to hear from them now, we're going to hear from them
19 on this item.

20 So a few states like New York, a few other states
21 had in the previous year sponsored some add-on work by BW
22 to do state energy and employment reports. And it had so
23 much value that I wanted to do that for California. And so
24 we figured out a way to partner with the PUC to co-sponsor
25 some follow-on work to build on the great basis that they

14

1 had for the U.S. Employment Report and deepen that work for
2 California. So that report is now out. And it catalogs or
3 it sort of details the energy employment landscape,
4 including a focus on clean energy, so I wanted to give
5 just a little bit of that background.

6 It's a really great research project, it's a
7 great resource for us to have. And as Fritz will discuss,
8 and BW will talk about, it should provide some solid
9 information and demographic and geographical information
10 about the whole energy landscape in California for us to
11 use in our various projects as we think about how to
12 stimulate the recovery from where we are now. And it's
13 worth saying the main survey work was done last year when
14 we were still in sort of the boom time. But there's also
15 an element, a follow-up to see which of those jobs have
16 been shed since then and how we can sort of build back.

17 So with that, thanks for indulging in a little
18 bit of a context there. But I think this is the kind of
19 work that we need to coordinate. We've been coordinating
20 with the Governor's Office and with the Just Transition
21 work in making sure that the kind of language and the
22 approaches are not in conflict for sure and coordinate well
23 and translate well across the various jobs initiatives that
24 the state has. Because obviously the equity issue and the
25 job issue are front and center as we talk about recovering

15

1 from this public health -- or getting through the public
2 health pandemic and then also recovering from it. So
3 anyway that's all I had to say for now, and I'll pass it
4 off to Fritz.

5 So Fritz, I hope I didn't steal too many of your
6 talking points.

7 MR. FOO: Commissioner McAllister, I'm going to
8 pass it off shortly to Sarah White, Phil Jordan. They are
9 some of the representatives that we coordinate with them on
10 and they'll present shortly, but I really want to give them
11 a big thanks. It's been excellent working with them. And
12 I do think a lot of this information will be both
13 interesting and valuable as we have these discussions. So
14 with that I'll pass it over to Sarah and Phil.

15 (No audible response.)

16 COMMISSIONER MCALLISTER: Somebody might be
17 muted.

18 MS. WHITE: Hi, everyone. Can you guys hear me?

19 CHAIR HOCHSCHILD: Yes, we can.

20 MR. FOO: Yes.

21 MS. WHITE: Okay, I guess I'll jump right in here
22 and do a brief methodology of overview. And then maybe
23 Phil will jump in and answer some questions that we have at
24 the end with the data.

25 So basically the data is based on the USEER

1 Employment Report, which is an annual energy employment
2 report that started in 2015 and is now a joint effort with
3 NASEO and EFI. For California we actually had a really
4 good response rate. So we had almost 5,000 businesses
5 participate, which gives us a pretty low margin of error of
6 just over 1 percent, plus or minus 1 percent.

7 And the energy employment is actually broken out
8 into five major technology sectors. So we have electric
9 power generation and then transmission, distribution and
10 storage and fuels, which collectively we refer to as sort
11 of the traditional energy sectors. And then we also
12 include energy efficiency jobs; and motor vehicles, because
13 of the high-end use energy for motor vehicles.

14 And then so other reports have the option to sort
15 of customize employment sectors by sub-technology. So we
16 can include clean energy sub-technologies or alternative
17 energy, and then each state sort of picks their own
18 definition for those. Could we go to the next slide?

19 So this is just the overview of the California
20 Jobs Report for 2019. And as you can see we have the
21 breakdown by the major sectors. And then all the way over
22 to the right we have the total employment for the clean
23 energy sector, which is fairly similar to the Massachusetts
24 Clean Energy Industry Report. But it does exclude some
25 sub-technologies like hydroelectric, nuclear generation,

17

1 and then clean fuels like corn ethanol and woody biomass.

2 So overall we found that California's energy-
3 related sectors have just over 956,000 jobs, which is
4 actually 5.3 percent of the overall workforce in
5 California. And clean energy workers account for 531,000
6 jobs. Could we go to the next slide, please?

7 So here we have sort of a brief demographic
8 overview of California's energy industry compared to the
9 overall workforce average which is fairly similar. The
10 biggest difference we see is there is a lower percentage of
11 white, which is the fourth from the bottom row. And then
12 sort of a higher percentage of two or more races. Could we
13 go to the next slide please?

14 And then so as was mentioned earlier the report,
15 the data collection for the report was done in the last
16 quarter of 2019. And so the data collected is based on
17 sort of the pre COVID-19 pandemic economy. And since then
18 we've done sort of monthly updates on job losses by
19 industry sector to look at COVID-19's impact on the energy
20 industry. And so, before COVID-19 employers were pretty
21 optimistic. They had projected about 2 to 8 percent
22 employment growth throughout 2020, depending on the
23 technology sector. And as of May 2020, we're seeing that
24 the energy sectors have actually lost 177,800 jobs, which
25 is an 18.6 percent decline compared to the last quarter of

1 2019. And over half of these job losses are from the clean
2 energy sector.

3 So that's sort of a brief overview of the
4 Employment Report, which there's a link to on our website.
5 And I think now we have five minutes for questions. I'm
6 not sure if that's -- Fritz is that correct?

7 MR. FOO: Yes. I think this is actually
8 (indiscernible)

9 COMMISSIONER MCALLISTER: Fritz, you're very,
10 very faint there. But I think we can open it up for
11 questions.

12 I guess in terms of I have one question actually.
13 So obviously this is very high-level. But all the
14 different sectors, you've got detailed numbers in there,
15 and so I have a couple of questions about that. Number
16 one, the lion's share of the clean energy jobs, well over
17 half of them, I think are energy efficiency jobs. Maybe
18 you could sort of talk and describe those jobs. And then
19 also say something about the transportation piece and the
20 solar piece and sort of how those sort of stack up.

21 MS. WHITE: Sure.

22 COMMISSIONER MCALLISTER: There's a high
23 diversity of jobs here, so I'd like to hear a little bit
24 about that.

25 MS. WHITE: Yeah, so the energy efficiency sector

1 tends to be the largest sector across all states. And we
2 cover multiple sub-technologies. Part of the reason it's
3 so large is because we also include what is considered
4 traditional HVAC as a sub-technology. And that includes
5 any worker that spends less than the majority of their time
6 on efficient technologies. So they might spend some time
7 working on traditional HVAC, but they do spend at least a
8 part of their time working on efficient technologies. And
9 that accounts for about 40 percent of all energy efficiency
10 employment.

11 So the other subsectors we include are ENERGY
12 STAR Appliances, Efficient Lighting, Advanced Materials,
13 and Renewable Heating and Cooling. And so that comprises
14 the energy efficiency sector.

15 COMMISSIONER MCALLISTER: There's some ENERGY
16 STAR --there's a bit of manufacturing and things in there
17 as well, right? At least nationwide?

18 MS. WHITE: Yes, definitely. A lot of energy
19 efficiency is concentrated in construction through the
20 deployment side. And then there's the second largest
21 sector, for California at least, is professional and
22 business services. And then there's also some
23 manufacturing and wholesale trade.

24 COMMISSIONER MCALLISTER: Yeah, I mean these
25 numbers are incredible because a half a million clean

1 energy -- not quite a half a million now with a little bit
2 of contraction in that workforce -- but because of its a
3 huge bases and it's a big chunk of our economy. And we
4 think about sort of equity implications and possibilities
5 there for getting back and beyond where we were before if
6 we do the right things that's pretty tremendous.

7 And then I guess maybe you could describe a
8 little bit about the motor vehicles piece?

9 MS. WHITE: Sure. So motor vehicles isn't
10 typically considered part of the energy sector. But given
11 the high-end use during manufacturing and then also just
12 end use of transportation, especially in California, we
13 like to include this in our jobs analysis. So a lot of
14 jobs in this sector end up being repair maintenance jobs.
15 It's like by far and large the biggest sector. But as far
16 as sub-technologies go we count electric vehicles, hybrid
17 electric, plug-in hybrid, natural gas and then hydrogen and
18 fuel cell jobs.

19 And for California, like I said a lot of jobs are
20 in the repair maintenance sector, but there is a good
21 amount of wholesale trade and then manufacturing as well
22 for motor vehicles.

23 COMMISSIONER MCALLISTER: Great, well thank you.
24 I'll open it up to others, yeah.

25 Commissioner Monahan?

1 COMMISSIONER MONAHAN: Yes.

2 COMMISSIONER MCALLISTER: Yeah, go ahead.

3 COMMISSIONER MONAHAN: I'm actually raising my
4 hand, not just virtually. (Laughter.) I would really love
5 to see the breakout for motor vehicles in terms of the
6 production and especially the electric vehicle side of that
7 equation. So maybe that could be a follow-on.

8 I'm curious what's in -- so I actually have two
9 questions, and then a comment perhaps. What's in the fuels
10 category? What does that account for? You said ethanol.
11 Is electricity for transportation also included in that
12 fuels category? And hydrogen as well?

13 MS. WHITE: Sorry, could you repeat the question
14 about electricity?

15 COMMISSIONER MONAHAN: Yeah, well I'm curious
16 about especially the build-out of charging infrastructure.
17 And I don't know if the electricity, or actually the
18 generation piece would be included that clean -- I mean
19 it's electric power generation, but is there perhaps all
20 the transportation piece would be included in that? I'm
21 just curious about what, especially whether the build-out
22 of the charging infrastructure, which is something we're
23 particularly curious about, would be accounted for under
24 the fuels side?

25 MS. WHITE: That's a tough one. So we right now

1 don't have a specific sub-technology where employers can
2 put their workers that work on electric vehicle charging
3 infrastructure. But we find that it does tend to fall
4 under transmission, distribution and storage. So it's
5 tough. Sometimes we can pull out those jobs, but it's not
6 its own sub-technology and it kind of spans multiple
7 sectors. Which isn't a great answer, I know, to your
8 question.

9 COMMISSIONER MONAHAN: But I think it's something
10 maybe we could talk about for the future whether there is a
11 way to account for that.

12 MS. WHITE: Yeah.

13 COMMISSIONER MONAHAN: And it's sort of --

14 MS. WHITE: Yeah, I think we're looking into
15 adding a separate category. Because as it stands right now
16 we do sort of a rough estimate where we pull out from each
17 sub-technology what we think would be the correct number,
18 but it's not quite captured in the survey. So it just kind
19 of falls across multiple technologies.

20 COMMISSIONER MONAHAN: Got it. Well let's
21 discuss that maybe further in the future, because that
22 would be a great thing to break out.

23 MS. WHITE: Yeah.

24 COMMISSIONER MONAHAN: Can we move to the
25 demographic slide?

1 MS. WHITE: Yeah, I'm not in. There we go.

2 COMMISSIONER MONAHAN: So one thing that really
3 stood out for me is the gap between male and female, like
4 that's real clearly the place to me where it's like the
5 most stark in terms of we don't have a lot of women in the
6 workforce in the energy sector. So it's something that we
7 should just, I think, be really cognizant of as we think
8 about how to diversify the workforce. That's one comment.

9 MS. WHITE: Yeah.

10 COMMISSIONER MONAHAN: And then the other
11 comment, I was thinking about what you said about how
12 whites are kind of underrepresented. But the other issue
13 that I think is really important to highlight is that other
14 demographics are, I don't want to say overrepresented, but
15 I think this is part of our challenge as a state with the
16 Black Lives Matter movement and so much attention to how do
17 we really make sure that this is a diversified movement? I
18 actually think this is a positive trend that we do see a
19 more -- there are some areas where we see more diversity.
20 And some areas where we need to work on the diversity
21 aspect of it like Hispanic or Latino in the energy industry
22 is underrepresented.

23 So I think there's some interesting findings as
24 we think about well what does it mean to really diversify
25 our workforce? And make sure that our clean energy

1 workforce is both a very diverse workforce that represents
2 California broadly, but also that we pay attention to the
3 fact that a lot of communities don't have the same access
4 to resources. That we want to see more Hispanics, we want
5 to see more black or African American participants in the
6 clean energy workforce. And how do we set up systems to do
7 that?

8 MS. WHITE: So I will say to your couple of
9 points on the demographic slide, is this is an overview and
10 so it does change a little bit when you cut it up by value
11 chain. But not so much by technology sectors, it's roughly
12 the same, but value chain definitely. If you look at
13 construction, the percentage of women is really low and
14 that makes up a large chunk of energy workers. But
15 sometimes across engineering or professional services
16 you'll see that the percentage of women is a little bit
17 higher. So if you're interested we can maybe provide that
18 breakdown. I don't want to promise anything if it's not
19 possible, but maybe that's something with the follow-up on
20 the motor vehicle breakout we can provide that as well.

21 And then just on the other piece it's a little
22 tough with collecting demographic data, because the two or
23 more races issue, I think is what makes it look -- so
24 oftentimes people don't think of themselves like when
25 they're answering the question about race as to as one

25

1 race. In a way we try to make it similar to Census Bureau.
2 But that's why our number for two or more races is often
3 higher. And it kind of throws off the percentages.

4 COMMISSIONER MONAHAN: Great, thanks for that
5 explanation. Yeah.

6 CHAIR HOCHSCHILD: Okay. We want to thank you
7 for this information. And also special thanks again to
8 Commissioner McAllister for highlighting this and for all
9 the terrific service with NASEO. We can't make good
10 decisions on energy without understanding where we stand on
11 these kind of developments in the employment. I wanted to
12 just understand better the way this research is being
13 funded going forward. So maybe Commissioner McAllister,
14 just in terms of how this is all going to be supported,
15 because it's really, really important that it be supported.

16 COMMISSIONER MCALLISTER: Yeah, so thanks for
17 highlighting that. And let me just second. I mean I said
18 it in my opening comments, but I wanted to second what
19 Commissioner Monahan just highlighted about the diversity
20 demographics of this workforce. Like we know we will, and
21 we have to focus on that and it's the top priority going
22 forward. And so figuring out ways to enable these
23 construction workers and other service providers that are
24 providing these services are going to help us reach our
25 climate goals. The folks certainly on the ground that are

26

1 in people's homes and businesses, they ought to be from and
2 look like the people that are in those communities. That's
3 the way you grow sustainable kind of community-based
4 businesses, but all the way up the chain to the
5 professional piece of it as well. So we really need to
6 focus on that. And I agree that this information is
7 critical for understanding so we can plan.

8 So NASEO sort of stepped in and took it over. So
9 EFI is the firm that Secretary Moniz and a couple of his --
10 and one of his deputies, Melanie Kenderdine, founded when
11 they left the Obama Administration. And so they had been
12 doing this in the Administration. And then they founded a
13 firm to then house it, house the BW activity and that
14 contract after through the new Trump Administration. And
15 so NASEO stepped in as a fiscal sponsor to help gather
16 resources to then pay for that via EFI to BW. So that
17 structure is working for now.

18 There's some talk that well I think it's a high
19 possibility that DOE, having seen the value will take it
20 back for next year. But obviously given the uncertainty at
21 the federal level and the administration level the details
22 of that are sort of TBD (phonetic) still. So it may spend
23 another year out in the world with NASEO, it may go back to
24 DOE, and then after that we'll see. But I think there's a
25 commitment at the state level and certainly many

1 stakeholders to keep it going no matter where it happens to
2 be housed. There's some preference to have it be an
3 official sort of integral document to the way it can work
4 that can inform the Department of Energy in their various
5 investments, and R&D and projects, buildings, etcetera.
6 This is relevant across the board for federal investment if
7 the federal government wants to use it for that, which you
8 know I think we all believe that they should.

9 So I would say that there was a little bit of
10 jockeying to sort of figure out how all the costs are going
11 to get covered and how we can build on it. The Climate
12 Alliance actually funded a separate piece of work with BW
13 to build on the piece that they did for the whole country
14 to focus on the Climate Alliance states, a number of other
15 states, New York, Massachusetts and I think a couple of
16 others. And Sarah, you can clarify that. Also got their
17 own state-level work.

18 So I think it's not in danger of going away is my
19 perception. And certainly if that did become a possibility
20 there's a lot of commitment to stepping in and figuring out
21 a solution. So I think I agree, I think this is a really -
22 - the more years it's done and the more kind of consistency
23 there's a consistent tool, a certainty tool and analysis
24 framework that they're using, a sampling analysis framework
25 that they're using. And the more years you get that in

28

1 place and get it to be a longitudinal resource the more
2 valuable it is being able to see trends and all that sort
3 of thing. So with keeping it going, it only gets more
4 important over time.

5 CHAIR HOCHSCHILD: Yeah. Great.

6 (Overlapping colloquy.)

7 COMMISSIONER MCALLISTER: Oh sorry, I think we
8 didn't get you full contact info. And then I'm wondering
9 if Phil is on as well.

10 MS. WHITE: You know, he's joining right now. I
11 think he said he used the wrong password, but he just said
12 that he's in.

13 COMMISSIONER MCALLISTER: Oh great. Okay then.

14 MS. WHITE: Yeah. As far as follow-up I did
15 mention that the report is published online, so I can send
16 around a web link to the group. And then you'll have my
17 contact information.

18 COMMISSIONER MCALLISTER: We'll put that in.

19 MS. WHITE: If there's any additional questions
20 on the data or the breakouts by value chain, etcetera.

21 COMMISSIONER MCALLISTER: We'll put that in the
22 record, we'll put that on the docket.

23 MS. WHITE: Okay. Okay, great.

24 CHAIR HOCHSCHILD: Was that Vice Chair Scott
25 trying to say something? Or was there someone else?

1 COMMISSIONER MCALLISTER: Yeah, go ahead Vice
2 Chair Scott.

3 VICE CHAIR SCOTT: It was. I had one more
4 question back on slide 4 where it shows the number of jobs
5 and I think it was about an 18 percent decrease due to
6 COVID. And I wondered whether that is something that you
7 have seen, and it is specific to California's energy
8 sector? So I was wondering if that looks similar to some
9 of the other states' energy sectors that you've seen? And
10 also how that number compares to the amount of decline that
11 we're seeing in jobs outside the energy sector.

12 MS. WHITE: So it is pretty comparable. I will
13 say that we ran the numbers for June, and we are seeing a
14 slight increase in employment again; very slight I'll say.
15 But I'll let Phil speak to that question. He's been more
16 in the data than I have.

17 MR. JORDAN: Yeah, can you hear me?

18 COMMISSIONER MCALLISTER: Yes, I hope so.

19 VICE CHAIR SCOTT: Yes, I can.

20 MR. JORDAN: Terrific. Okay, good. Sorry, I had
21 a little trouble getting in earlier. And thanks Sarah for
22 running all that.

23 So to your specific question, California had a
24 little bit earlier indication of some of the job losses
25 from COVID-19, which is really not surprising given that

1 California had a rapid response to the pandemic by sort of
2 being the first in the nation to start some of the shelter-
3 in-place orders.

4 In terms of magnitude it is a little bit higher
5 percentage in California. But that's also largely because
6 of the types of industries and activities that make up the
7 California energy economy being really sort of broad and
8 diverse across a wide range of the value chain of
9 activities. And really being led by construction, which is
10 hit pretty hard. So things like residential energy
11 efficiency and some of the distributed generation solar
12 were hit early and harder than some of the other segments.

13 That being said, the rebound is also sort of
14 slightly better in California than in some other states.
15 And when we look at the energy sector at large nationally
16 it has fared better than certainly industries like
17 hospitality, leisure, tourism, retail. But it has been
18 pretty impacted, a pretty significant level. And worse
19 than many other industries, certainly worse than things
20 like information and communication technologies or
21 biotechnology.

22 And then a lot of it depends on the mix of
23 industries that a state has. So the oil sector in
24 particular, not just because of COVID, but because of a lot
25 of other issues is really down pretty significantly across

1 the U.S. So there's a range of activities that would sort
2 of contribute to those COVID losses. We have on our
3 website at bwresearch.com/COVID we have monthly memos that
4 we put out on all energy jobs and clean energy jobs that
5 have tables for every state. And more recently for every
6 county, or at least the largest counties so a large number
7 of counties in California, which is all totally accessible.
8 And we will be continuing to do those for at least another
9 four months. We'll be producing those, and they'll be
10 available publicly on our website.

11 VICE CHAIR SCOTT: Great, thank you so much.

12 CHAIR HOCHSCHILD: Great. We don't normally take
13 public comment on non-voting items, but I will just open it
14 up in this case. Noemi, do we have any public comment?

15 MS. GALLARDO: This is the Public Advisor, no
16 written comment. I'll defer to Patricia to see if there's
17 anyone on the line.

18 MS. CARLOS: Hi, this is Patricia Carlos.
19 There's nobody on the line to comment.

20 CHAIR HOCHSCHILD: Okay. Well, let's thank our
21 guests. Thank you so much for the presentation and I want
22 to thank --

23 COMMISSIONER MCALLISTER: Hey I wanted to thank
24 Fritz for coordinating a lot of this work as well. And
25 certainly Phil and Sarah and the whole team at BW, thanks a

32

1 lot for all your diligence. It's been great working with
2 you. And the Public Utilities Commission for pitching in
3 on the cost of this as well.

4 CHAIR HOCHSCHILD: Well said. Great. Thank you
5 all.

6 MR. JORDAN: Thank you.

7 CHAIR HOCHSCHILD: All right, let's move on to
8 Item 3, Lafayette Backup Generating Facility. Steven Kerr.

9 MR. KERR: Good morning Chair, Commissioners. My
10 name is Steve Kerr. I supervise the Siting and CEQA Review
11 Unit in the Environmental Office of the Siting,
12 Transmission, and Environmental Protection Division. With
13 me are staff attorneys Jared Babula and Nicolas Oliver.

14 We're here to present a proposed order appointing
15 a committee to oversee a Small Power Plant Exemption or
16 SPPE, proceeding for the Lafayette Backup Generating
17 Facility, which is associated with the proposed Lafayette
18 Data Center in the City of Santa Clara. The Lafayette Data
19 Center would include a three-story data center building
20 which houses client servers. The Lafayette Backup
21 Generating Facility would consist of diesel-fired
22 generators to provide up to 99.8 megawatts of backup power
23 for the data center building in the event electricity
24 cannot be supplied by the utility, Silicon Valley Power.

25 The Applicant, Digital Realty, filed its SPPE

1 application on May 20th, 2020, seeking an exemption from
2 the Commission's powerplant application for certification
3 process. The SPPE option is only available for thermal
4 powerplants between 50 and 100 megawatts. And pursuant to
5 Public Resources Code Section 25541 the exemption can only
6 be granted if no substantial adverse impact on the
7 environment or energy resources will result from the
8 construction and operation of the proposed facility.

9 Staff will conduct an environmental review of the
10 exemption application and produce an Initial Study.

11 This concludes my presentation. Also on the line
12 representing the applicant is Scott Galati. We'd be happy
13 to answer any questions you may have. Thank you.

14 CHAIR HOCHSCHILD: Great. Thank you. Let's ask
15 our Public Advisor if we have any public comment on this
16 item.

17 MS. GALLARDO: This is Noemi, the Public Advisor,
18 no written comment. I'll defer to Patricia to see if
19 there's anyone on the line.

20 MS. CARLOS: This is Patricia. We have Scott
21 Galati on the line. Scott, if you'd like to unmute
22 yourself you can begin your comment.

23 MR. GALATI: Yeah, I have no comment. I'm just
24 here to answer any questions from the Commissioners.

25 CHAIR HOCHSCHILD: Great, thank you. So for this

1 I would entertain a motion to have Commissioner Douglas as
2 Lead (indiscernible). Commissioner Douglas, did you have
3 any comments you wanted to make on the item before we
4 discuss that?

5 COMMISSIONER DOUGLAS: No comments. I'm here for
6 you to make the motion if we're ready for that.

7 CHAIR HOCHSCHILD: Okay. That'd be great.

8 COMMISSIONER DOUGLAS: All right, so I move
9 approval for the Committee as described by the Chair, and
10 myself presiding and Chair Hochschild as the Associate
11 Member.

12 CHAIR HOCHSCHILD: Is there a second?

13 VICE CHAIR SCOTT: This is Vice Chair Scott.
14 I'll second the motion.

15 CHAIR HOCHSCHILD: Okay. All in favor?
16 Vice Chair Scott?

17 VICE CHAIR SCOTT: Aye.

18 CHAIR HOCHSCHILD: Commissioner McAllister?

19 COMMISSIONER MCALLISTER: Aye.

20 CHAIR HOCHSCHILD: Commissioner Douglas?

21 COMMISSIONER DOUGLAS: Aye.

22 CHAIR HOCHSCHILD: Commissioner Monahan?

23 COMMISSIONER MONAHAN: Aye.

24 CHAIR HOCHSCHILD: And I vote aye as well. That
25 motion passes unanimously. Thank you.

1 Let's move on to Item 4, Solar Energy Generating
2 Systems VIII and IX.

3 MR. HEISER: Good morning Chairman and
4 Commissioners, my name is John Heiser. I work in the
5 Siting, Transmission and Environmental Protection Division.
6 I'm the Compliance Project Manager overseeing the petition
7 to amend the Solar Energy Generating System, SEGS VIII and
8 IX solar thermal projects. With me today is Staff Counsel
9 Nick Oliver and from the Engineering Office is Geoff Lesh
10 and Mark Hesters. Available by phone representing Project
11 Owner Terra-Gen is Dan Thompson, Bernadette Jendrusch,
12 Chris Ellison, Mark Casper, Mark Turner, Tripp Ballard, Gus
13 Luna and Amanda Johnson.

14 SEGS VIII and IX power plants were constructed
15 using parabolic trough mirrors to concentrate solar energy
16 to heat fluid, which is used to create steam to generate up
17 to 160 megawatts of renewable electricity. SEGS VIII went
18 online in December 1989. SEGS IX went online in October
19 1990. The projects are located near Hinckley, California,
20 in unincorporated San Bernardino County.

21 SEGS VIII is one of nine solar electrical
22 generating system plants in California's Mojave Desert.
23 These facilities were the first renewable energy projects
24 that were licensed from the California Energy Commission
25 over 30 years ago. During full operational capacity from

1 the nine facilities, provided up to 354 megawatts of
2 renewable electricity.

3 Currently Terra-Gen is seeking approval to
4 install and operate a Battery Energy Storage System or
5 BESS, located between the SEGS VIII and IX facility to
6 provide up to 80 megawatts of shared stored electricity
7 with a duration of up to two hours. Given the modularity
8 of the design of the BESS, the system may be constructed in
9 phases, starting with a system having less than two hours
10 duration. If approved, this would become the fifth Energy
11 Commission jurisdictional project using battery energy
12 storage systems to meet California system needs.

13 In the staff analysis of the petition, staff
14 proposes new Conditions of Certifications or COCs, to be
15 added to the SEGS VIII and SEGS IX licenses in the
16 following technical areas. Staff is proposing the addition
17 of four new transmission line safety and nuisance COCs.
18 These new COCs would cover the new line and required
19 modifications to accommodate the proposed BESS.

20 Staff is also proposing an addition of five new
21 transmission system engineering COCs that would ensure that
22 the construction and operation of the transmission
23 facilities for the proposed BESS comply with applicable
24 Laws, Ordinances, Regulations and Standards, or LORS.

25 Staff is proposing the addition of three new

1 worker safety and fire protection COCs. These conditions
2 would ensure adequate protection from potential risks to
3 on-site workers and first responders and would mitigate
4 potential risks posed to the public up to a level that
5 would be less than significant. Staff concludes that with
6 the proposed implementation of the new COCs, along with the
7 continued implementation of existing COCs already contained
8 in the final Commission decision, which project impacts of
9 the proposed project change would be less than significant
10 and the project would remain in compliance with all
11 applicable LORS.

12 Staff also concludes that the resulting project
13 change would not impact any population, including the
14 environmental justice population.

15 Staff is now requesting that the Commission
16 approve this petition to add a Battery Energy Storage
17 System to the SEGS VIII and IX power plants licenses.

18 Thank you. If you have any questions, staff is
19 available to respond.

20 CHAIR HOCHSCHILD: Thank you, John. One
21 question, what is the chemistry of the energy storage? Is
22 it lithium-ion or something else?

23 MR. HEISER: Yes, it's lithium-ion.

24 CHAIR HOCHSCHILD: Okay. Terrific. Okay, let's
25 go to public comment at this time. Do we have any public

1 comment, Madam Public Advisor?

2 MS. GALLARDO: This is the Public Advisor Noemi
3 Gallardo, no written comment. I'll defer to Patricia for
4 anyone on the line.

5 MS. CARLOS: This is Patricia Carlos. We have
6 about five people signed up to speak. The first one is Dan
7 Thompson, Christopher Ellison, Bernadette Jendrusch.

8 Dan, if you'd like to begin your public comment.

9 MR. THOMPSON: Hi. Yeah this is Dan Thompson
10 representing Terra-Gen. And we had a number of people that
11 joined primarily just to answer any questions that come up.

12 I would just add that, I think, thanks to John
13 and the staff for processing the petition to add this
14 storage facility at the SEGS plant. It's an existing
15 facility so it's a good opportunity to add storage to an
16 existing facility with infrastructure that's already in
17 place. So again, appreciate the Commission considering the
18 Petition for Modification. And happy to answer any
19 questions.

20 CHAIR HOCHSCHILD: Thank you. Were there others
21 on the line who wanted to make additional comments?

22 MS. CARLOS: Yes. We have Mark Turner with
23 Terra-Gen and Amanda Johnson with LSA Associates.

24 CHAIR HOCHSCHILD: Okay.

25 MS. JOHNSON: (Overlapping colloquy.) Hi this is

1 Amanda Johnson.

2 MR. THOMPSON: Yeah, go ahead Amanda.

3 MS. JOHNSON: Oh, I was just saying I'm with LSA
4 Associates. I'm the Project Owner Environmental Consultant
5 for the SEGS VIII and IX projects. I don't have any
6 comments, just participating in support of this project.
7 Thank you.

8 MR. TURNER: And Dan, I'm only available for
9 questions and comments too. This is Mark Turner, so I have
10 no comment.

11 CHAIR HOCHSCHILD: Okay, thank you.

12 Was there anyone else on the line wishing to make
13 a public comment at this time?

14 MS. CARLOS: That is everybody, Chair.

15 CHAIR HOCHSCHILD: Okay. Let me just say first
16 of all this, the SEGS project is going to go down in
17 history as one of the milestones in our journey to a clean
18 energy future. It was the largest solar thermal project in
19 the world at the time that it was built and really show-
20 cased that utility scale renewables could actually work.
21 And there was quite a bit of opposition to this thing at
22 the beginning and some questions about the capability over
23 a 30-year (indiscernible) that's been operating on. I just
24 want to pay tribute to those early pioneers who helped
25 (indiscernible) project going.

1 And then just to say this kind of thing, adding a
2 bridge on to an existing utility scale renewable facility
3 is precisely what our state and our country need to get to
4 a 100 percent clean energy future. So I want to thank all
5 parties for this. And with that I'll open up at this point
6 to Commissioner discussion. Commissioner Douglas?

7 COMMISSIONER DOUGLAS: Yes. So I just wanted to
8 say as you just did it's always really nice to see a
9 project like this. The SEGS projects were the first
10 utility scale solar projects built in California. They're
11 still with us. This project will, by adding solar will
12 just by adding storage will be able to increase benefits to
13 the state by adding this extra resilience. And so I'm very
14 happy to support this item.

15 CHAIR HOCHSCHILD: Okay. Are you happy enough to
16 make a motion?

17 COMMISSIONER DOUGLAS: I am in fact. So I move
18 approval of Item 4.

19 CHAIR HOCHSCHILD: Okay, as moved by Commissioner
20 Douglas.

21 Is there a second? Vice Chair Scott?

22 VICE CHAIR SCOTT: Yes, I'm happy to second.

23 CHAIR HOCHSCHILD: Okay. All in favor?

24 Vice Chair Scott?

25 VICE CHAIR SCOTT: Aye.

1 CHAIR HOCHSCHILD: Commissioner Douglas?
2 COMMISSIONER DOUGLAS: Aye.
3 CHAIR HOCHSCHILD: Commissioner McAllister?
4 COMMISSIONER MCALLISTER: Aye.
5 CHAIR HOCHSCHILD: Commissioner Monahan?
6 COMMISSIONER MONAHAN: Aye.
7 CHAIR HOCHSCHILD: And I vote aye as well. That
8 item passes unanimously. Thank you everybody.
9 Let's turn now to Item 5, Water Heater Demand
10 Management Systems. Then let's begin, Danny Tam.
11 MR. TAM: Good morning Chair and Commissioners,
12 my name is Danny Tam, Staff Mechanical Engineer from the
13 Title 24 Building Standard Office.
14 Natural Resources Defense Council, NRDC,
15 submitted an application for a compliance option for heat
16 pump water heaters on April 26, 2019, requesting that the
17 CEC adds performance modeling credit for heat pump water
18 heaters with load shifting and demand management features
19 into the CBECC compliance modeling software.
20 Staff, in collaboration with a large group of
21 stakeholders representing water heating manufacturers,
22 utilities, and advocates, refined the specification over
23 the past 18 months into the draft final version before the
24 Commission today. This JA13 specification, so named
25 because it is drafted in the style of the existing Joint

1 Appendices to the Energy Code, has received consensus among
2 participating stakeholders as being an appropriate set of
3 criteria for heat pump water heaters seeking additional
4 compliance credit for their demand management features.

5 Staff reviewed the specification to determine
6 technical feasibility and found that there should not be
7 any significant technical barriers for manufacturers to
8 incorporate the JA13 demand management features into their
9 products. Staff also determined that the specified
10 features should result in reductions of Time Dependent
11 Valuation, TDV energy in all climate zones, providing
12 potential energy bill savings for customers.

13 Finally, staff reviewed the proposed
14 specification for consistency with state and CEC policy.
15 Staff found that heat pump technologies are a key component
16 of the state's decarbonization effort. And that the
17 proposed compliance option provides an incentive for
18 builders to choose heat pump water heaters for newly
19 constructed buildings as well as for owners for existing
20 buildings to convert gas water heaters to heat pump water
21 heaters as part of their permitted alteration projects.

22 For these reasons staff recommends approval of
23 the JA13 compliance option. This concludes my presentation
24 and I'm available to answer any questions.

25 CHAIR HOCHSCHILD: Thank you, Danny, for this and

1 for your hard work on this issue over a number of years.

2 Let's turn now to public comment, Madam Public
3 Advisor.

4 MS. GALLARDO: No written comments, Chair. I'll
5 defer to Patricia for anyone on the line.

6 MS. CARLOS: This is Patricia Carlos. We have
7 four people signed up to speak. The first is Licha Lopez
8 with PG&E, followed by Ashley Armstrong with A.O. Smith
9 Corp., Pierre Delforge with NRDC and finally Ankur
10 Maheshwari with Rheem Manufacturing. Licha, if you'd like
11 to begin your public comment?

12 CHAIR HOCHSCHILD: Hey Licha, I think this is
13 your first public comment, right, in your new role?

14 MS. LOPEZ: It is, yeah. Hi Chair, hi
15 Commissioners. Thank you. Thank you for the opportunity
16 to speak. So my name is Licha Lopez, L-I-C-H-A L-O-P-E-Z.
17 And I'm speaking on behalf of Pacific Gas and Electric
18 Company in support of this item, this compliance option.

19 This option encourages builders to install
20 residential demand management technologies in California
21 homes. And it will enable customers to use its smart water
22 heaters for a Time-of-Use, or TOUs, load shifting and
23 participating demand response events. PG&E will be
24 transitioning residential customers to TOU rate structures
25 in 2021. So these smart heat pump water heating

1 technologies will help TOU customers to heat water for home
2 use more effectively and to reduce electricity bills in the
3 profits.

4 Additionally, encouraging the use of the
5 specified heat pump water heaters may encourage customers
6 to leverage other established technologies such as a smart
7 thermostat, moving toward whole-home strategies for demand
8 management.

9 Separately, PG&E's water saver program proposes
10 load shifting thermal energies towards strategies that can
11 leverage these smart heat pump water heaters technologies
12 ultimately to benefit customers on TOU rates and allow them
13 to earn incentives.

14 The tiny addition of the load shifting and demand
15 response capabilities for these water heaters as a
16 compliance option for the 2019 Energy Code will also help
17 to prepare the market for advancements in the 2022 Energy
18 Code, including the potential to include these options for
19 non-residential applications. So on these and other
20 initiatives PG&E continues to support the evolution of
21 California's Energy Code to help meet California's
22 decarbonization goals.

23 I thank you for this opportunity to speak again
24 in, yeah, supporting this item.

25 CHAIR HOCHSCHILD: Thank you, Licha.

1 MS. LOPEZ: Thank you very much.

2 CHAIR HOCHSCHILD: Okay. Who's next, Patricia?

3 MS. CARLOS: Ashley Armstrong, if you'd like to
4 begin your comment?

5 MS. ARMSTRONG: Good morning, can you hear me?

6 CHAIR HOCHSCHILD: Yeah.

7 MS. ARMSTRONG: Okay, great. Good morning Chair
8 and Commissioners. My name is Ashley Armstrong and I'm the
9 Director of Regulatory and Technology Policies for A.O.
10 Smith Corporation. A.O. Smith is one of the world's
11 leading manufacturers of residential and commercial water
12 heating and hydronic heating equipment, as well as a
13 manufacturer of water treatment and air purification
14 products.

15 First, A.O. Smith would like to thank the
16 Commission for its leadership and the consideration and
17 hopeful adoption of load management requirements for heat
18 pump water heaters. A special thanks to Fritz Foo in
19 Commissioner McAllister's office and Danny Tam in the Title
20 24 Office for their responsiveness and support in
21 developing and advancing Joint Appendix 13.

22 A.O. Smith has been a key participant in the
23 Building Decarbonization Coalition's heat pump water heater
24 working group, with the aid of and the development of the
25 technical requirements represented in JA13. This heat pump

1 water heating working group represents a successful
2 collaboration amongst stakeholders supporting California's
3 market transformation goals for residential water heating.

4 A.O. Smith strongly encourages the Commission to
5 adopt Joint Appendix 13 as shown in the supporting
6 materials for the meeting docket without further
7 modification. If adopted, JA13 will represent a first heat
8 pump water heating demand management specification that
9 will enable heat pump water heaters to either be controlled
10 remotely or simply respond to preloaded time-of-use price
11 signals providing grid and utility benefits daily. By
12 design this specification provides high assurance that
13 demand flexible heat pump water heaters will deliver daily
14 load shifting over their lifetime. And that heat pump
15 water heaters can be used as reliable thermal storage
16 devices.

17 A.O. Smith is pleased to see JA13 on the July 8th
18 Business Meeting, as manufacturers have been anxiously
19 awaiting the finalization of this Appendix to enter this
20 new equipment into the market. JA13 will serve as a
21 primary resource for the technical requirements for load
22 management heat pump water heaters.

23 A.O. Smith appreciates the opportunity to work
24 with the Commission And once again urges the Commission to
25 adopt JA13 without further delay. Thank you very much for

1 your time today.

2 CHAIR HOCHSCHILD: Thank you.

3 MS. CARLOS: Next up we have Pierre Delforge.

4 MR. DELFORGE: Good morning Chair and
5 Commissioners. My name is Pierre Delforge with the Natural
6 Resources Defense Council. We appreciate the Commission's
7 leadership on all topics related to demand (indiscernible).
8 The ability to shape and shift electricity demand to better
9 match the times when solar and wind are available is
10 critical to decarbonize the building sector and the grid in
11 the most affordable manner. Today's vote is an important
12 step in that direction. It sets the stage for turning the
13 largest energy end use and source of emissions in
14 California's homes, water heating, into a grid-friendly,
15 super-efficient asset to help decarbonize buildings and the
16 grid.

17 Joint Appendix 13 is the consensus outcome of a
18 broad two-year collaborative effort between manufacturers
19 representing more than 90 percent of the water heater
20 market in America, California and other West Coast
21 utilities, diverse industry stakeholders, environmental
22 groups and CEC staff. I want to thank them all, and
23 particularly CEC staff for their support and assistance in
24 this effort.

25 Providing a clear set of requirements is critical

1 to let manufacturers innovate on how best to meet the
2 state's decarbonization and affordability goals. The top
3 U.S. manufacturers have already announced that they will
4 support this specification. And we expect products in the
5 market in the next few months.

6 The significance of this new specification goes
7 well beyond the water heater. Once a builder switches to a
8 highly efficient electric hot water heater in the new
9 building there is little reason to install a gas furnace
10 when a heat pump can provide heating and cooling at a lower
11 cost. By valuing the grid benefits of smart pump water
12 heaters and opening up a new value stream for this
13 technology JA13 will accelerate the transition to all-
14 electric highly efficient construction that would help
15 clean up California's air, reduce construction and energy
16 costs, and ensure a safer climate future.

17 For these reasons we urge the Commission to adopt
18 JA13 today. Thank you.

19 CHAIR HOCHSCHILD: Thank you, Pierre.

20 MS. CARLOS: Our final speaker signed up is Ankur
21 Maheshwari.

22 MR. MAHESHWARI: Good morning Chair and
23 Commissioners. This is Ankur Maheshwari representing Rheem
24 Manufacturing. I'm a global decarbonization lead for
25 Rheem.

1 Thank you for the opportunity to provide comments
2 on this topic. Rheem supports the resolution to adopt
3 modeling of this heat pump water heater demand management
4 system submitted by NRDC. Rheem is an industrial leader in
5 the water heating and has the most efficient heat pump in
6 the market. Rheem continues to introduce new heat pump
7 water heater products to enhance load shifting and class
8 leading performance.

9 In collaboration with industry stakeholders over
10 the past several months Rheem helped develop and refine
11 Appendix JA13 for heat pump water heater demand management
12 systems specifications. We know heat pump water heaters
13 are unique in as they heat water very efficiently. And
14 also store and ship energy to support grid harmonization.
15 It is a capability that is captured in the JA13
16 specifications. And when adopted will provide value for
17 California to obtain policy priorities, namely to reduce
18 carbon emission and support integration of renewal energy.

19 I do want to take this opportunity to also thank
20 Danny for his support and help through this process, also
21 Pierre, and for the leadership of Commissioner McAllister.
22 Thank you.

23 CHAIR HOCHSCHILD: Well thank you. And let me
24 just say I actually installed a Rheem heat pump water
25 heater a couple of years ago in our house and it's been

1 working great. And I'm a big believer in this technology
2 sector.

3 so let's turn now to Commissioner discussion.
4 Commissioner McAllister.

5 COMMISSIONER MCALLISTER: Yeah, so thanks a lot.
6 Yeah likewise, I have a heat -- I did not go with a Rheem
7 or an A.O. Smith, so I'm independent. but I have one that
8 has CO2 as its working fluid, so it actually is inherently
9 quite load -- its gas potential refrigerant -- and it's
10 working great as well. So this technology is really on the
11 cusp of going big.

12 So thanks. Good to hear from Licha and Pierre,
13 thanks for all your support. And A.O. Smith, I had
14 interacted way long ago with Josh Greene in DC on this and
15 related issues. And I kind of feel like this is a multi-
16 year kind of discussion that's coming to some fruition, so
17 this is terrific.

18 And then also Ankur it's great to hear your
19 voice. I actually visited their headquarters in Atlanta a
20 year and a half or so ago. And just seeing the commitment
21 across the board to the -- by the manufacturers, where the
22 investment and the money is, that's really going to push
23 this marketplace, enable it to get scale costs down and
24 really go massive in terms of the consumer uptake is really
25 terrific. And I think this JA13 is a great foundation for

51

1 that.

2 So I want to thank Danny and the team in the
3 Building Standards Office, certainly NRDC for bringing this
4 forward originally, and the Decarb Coalition (phonetic),
5 huge membership that's been meeting regularly for at least
6 18 months to suss out the details. And we've really been
7 supporting that process with a promise that we would bring
8 this to fruition and really build it into the Building
9 Code. And so it's really great to see that happening
10 today.

11 I guess I just wanted to -- this is one of these
12 issues that has, with many an energy efficiency, where if
13 you -- you can dig deep and get a lot of detail if you
14 want. And a lot of people don't want. But I will point
15 out that if you read the Joint Appendix it's quite, I
16 think, far reaching. And basically you have water heaters
17 with capability that really give it reliability. You know,
18 for communications you can do this remotely and make sure
19 that they get managed with a signal from the outside. But
20 if that communications goes away or it fails it defaults to
21 something that's automated based on the time-of-use frame
22 that's stored locally, things like that. It's really well
23 thought out, it's really well considered. And that
24 collaborative effort among all the stakeholders really
25 shows.

1 And so these joint appendices that go on to the
2 Building Code, they add some paperwork, they add some pages
3 onto it. But for the particular market sectors JA12 is
4 about batteries, for example. JA13 here about this
5 critical resource, that is, heat pump water heaters. They
6 really orient the marketplace in a very functional and
7 pragmatic way. And they're key to moving those sectors
8 forward so that they actually get traction in the
9 marketplace. So I want to just point that out to my
10 colleagues that they are, these joint appendices are a
11 really key piece of our decarbonization future.

12 And obviously this complements really well as a
13 key piece of the puzzle, the overall picture we're putting
14 together with SB 49, which is the appliance load
15 flexibility, so it's an enabler for that. Certainly our
16 R&D work can utilize this and build on it and figure out
17 ways to aggregate and get scale and use these resources as
18 a grid, a grid level, distribution grid level and even a
19 bulk power level resource potentially. And then our load
20 management centered as well. Those obviously dovetail well
21 with this.

22 So we're moving forward putting together a lot of
23 pieces of this puzzle and I just want to take every
24 opportunity to kind of try to connect the dots here. So
25 really happy to have this in front of you all. And will

1 pass it to anyone else who wants to provide comment.

2 CHAIR HOCHSCHILD: I had actually one question
3 for A.O. Smith and Rheem in particular, which is just can
4 you share a little bit about your expected trajectory in
5 terms of any technology improvements or further cost
6 reductions in looking out? Obviously, costs have come down
7 considerably over the last years. How much more costs do
8 you think can be taken out of the project? And how much
9 more efficiency or other improvements are you seeing in
10 your own planning?

11 (No audible response.)

12 start with Ashley from A.O. Smith if you have
13 comments on that, and then go to Ankur.

14 MS. ARMSTRONG: Sure. I mean I think the heat
15 pump water heating market generally is a ripe market and
16 we're seeing a lot of new kind of efforts, both in R&D and
17 deployment and programs. And California is kind of leading
18 the way with a variety of different programs that are
19 helping support the heat pump water heating transition. As
20 we see more of that you'll see more products, just diverse
21 products, specific different needs. You'll see more focus
22 on high efficiency or further focusing on high efficiency
23 intermissions reductions.

24 And obviously with those programs coming online
25 helping with the deployment and gaining scale it obviously,

54

1 with scale comes reduced costs. So I probably can't
2 comment specific on costs, but we would be so happy to have
3 a further conversation there.

4 CHAIR HOCHSCHILD: Okay. (Overlapping colloquy.)

5 MS. ARMSTRONG: So I don't have any further
6 comment.

7 CHAIR HOCHSCHILD: No, that's fine.

8 Ankur did you have any comments on that?

9 MR. MAHESHWARI: I think what Ashley said. I
10 think the industry is working on improving about efficiency
11 as well as more from the economic point of view for a
12 larger adoption. Rheem just launched a Generation 5 heat
13 pump water heater. And it is a capacity of 4 (phonetic) as
14 well as the 80-gallon model is 4.0 UEF, which is -- so I
15 think we as a manufacturer, our manufacturer continues to
16 pave the way in terms of technology.

17 We also realize that it is important that the
18 heat pump water heater be a good grid harmonization tool
19 for the utilities as well as the state. And it does have
20 that ability to be able to do that. So I think as the
21 market scales up our key initiative continues to be, to
22 make sure that our key customers the plumbers, the
23 utilities, as well as the homeowner have a positive
24 experience with our product and this type of technology
25 continues to move forward.

1 CHAIR HOCHSCHILD: Okay, great. Well thank you.
2 Let's see, are there other Commissioner comments? Vice
3 Chair Scott? (Overlapping colloquy.)

4 COMMISSIONER MCALLISTER: I wanted to ask one
5 more, one question actually instead of presenting. But
6 actually I have two questions.

7 I'm wondering so one of the issues for scale is
8 making sure that one of these units is actually on a truck.
9 Water heaters are an item that go bad and people really
10 want their hot water and they need it quickly. Certainly
11 I've been in that situation. And maybe you're willing to -
12 - you have to put up with fewer choices. So what's your
13 sort of -- can you talk about strategy for making this
14 functionally a choice for people in a retrofit situation
15 where they have time pressure? But we will also want to
16 get them the best unit that they possibly can. And maybe
17 this is also a question for Licha at PG&E in terms of
18 program support.

19 MR. MAHESHWARI: Yeah, I can take a stab at it.
20 This is Ankur again from Rheem. One of the design
21 philosophies that Rheem has always followed is to make sure
22 that the heat pump water heater can easily be installed
23 without requiring a large installation cost. So then the
24 first cost to the -- or the total cost of to the homeowner
25 is not as high, incrementally as high. So we would

1 continue to work towards that. And that continues to stay
2 as a design principle for us to make sure that the plumbers
3 can easily install the unit.

4 We do have a lot of training programs to help
5 bring awareness to the heat pump water heater at the
6 consumer level as well as at the plumber level to educate
7 the plumbers and then let them be aware of the programs
8 that are going on. So all the incentives the utilities
9 have, or the state level has, is very helpful in that
10 adoption as it allows the plumber to offer heat pump water
11 heaters as a solution. And I think as they start to offer
12 more and more than that is what is going to trigger the
13 heat pump water heater to be on the truck.

14 So you raise a very valid point. Most of the
15 units that get installed are on the truck. So as these
16 units become -- the plumbers get more and more comfortable
17 to offering this as a solution it will get -- it will start
18 showing up on the truck.

19 MS. ARMSTRONG: Yeah, Ankur, I would echo Ankur's
20 sentiments. And I would just say with a lot of the
21 programs, rebate programs that are popping up in
22 California, supported by the utilities and other type of
23 regulatory programs that we're seeing coming up from both
24 CEC and CPUC in development now. I mean, those rebate
25 programs that raise the awareness of heat pump water

1 heaters as an option, especially those instant rebate
2 programs that help with the first-cost credential really
3 start to make it an attractive replacement option.

4 And that's just educational campaign that will go
5 along with that, just like we are also doing a lot of
6 education and training out in California along with other
7 places about these options and the benefits that they can
8 provide as well as their utilities that they provide to
9 consumers. So they will start to become more thought about
10 and more in the forefront of people's mind when they have a
11 replacement situation.

12 COMMISSIONER MCALLISTER: Great.

13 CHAIR HOCHSCHILD: Great. All right, let's just
14 go to the Commissioners.

15 Vice Chair Scott, any comments or questions?

16 VICE CHAIR SCOTT: No comments or questions.

17 CHAIR HOCHSCHILD: Okay. Commissioner Douglas?

18 COMMISSIONER DOUGLAS: No.

19 CHAIR HOCHSCHILD: Commissioner Monahan?

20 COMMISSIONER MONAHAN: No comments.

21 CHAIR HOCHSCHILD: Okay.

22 Commissioner McAllister, would you be willing to
23 make the motion?

24 COMMISSIONER MCALLISTER: Yeah I'll move Item 5.

25 CHAIR HOCHSCHILD: Okay.

1 Vice Chair Scott, would you be willing to second?

2 VICE CHAIR SCOTT: Yes, I second Item 5.

3 CHAIR HOCHSCHILD: Okay. We'll take the vote.

4 Vice Chair Scott?

5 VICE CHAIR SCOTT: Aye.

6 CHAIR HOCHSCHILD: Commissioner Douglas?

7 COMMISSIONER DOUGLAS: Aye.

8 CHAIR HOCHSCHILD: Commissioner McAllister?

9 COMMISSIONER MCALLISTER: Aye.

10 CHAIR HOCHSCHILD: Commissioner Monahan?

11 COMMISSIONER MONAHAN: Aye.

12 CHAIR HOCHSCHILD: And I vote aye as well. That

13 item passes unanimously. Thank you everybody.

14 Let's move on to Item 6, Renewables Portfolio

15 Standard 2014 to 2016 Compliance Period 2 Verification

16 Results.

17 Let's go to Kevin Chou.

18 MR. CHOU: Good morning Chair and Commissioners.

19 My name is Kevin Chou from the Renewables Portfolio

20 Standard, RPS, Verification and Compliance Unit in the

21 Renewable Energy Division. I am joined by Legal Counsel

22 today on the line.

23 Today staff is requesting adoption of the RPS

24 Verification Results for local publicly owned electric

25 utilities the RPS POU Verification Results Report, Staff

1 Draft Report for San Francisco Public Utilities Commission
2 Hetch Hetchy Power for Compliance Period 2, which covers
3 the years 2014 to 2016. A representative from San Francisco
4 Public Utilities Commission is on the line with us.

5 California's RPS is one of the most ambitious
6 renewable energy policies in the nation and a key driver
7 for achieving decarbonization of the energy sector. The
8 RPS requires the state's local publicly owned electric
9 utilities, or POUs, to procure increasing amounts of
10 renewable energy ultimately serving at least 60 percent of
11 retail sales with eligible renewable energy resources by
12 2030.

13 As detailed in the Verification Results Report,
14 San Francisco Public Utilities Commission has demonstrated
15 that it qualifies for an alternative procurement
16 requirement and as such is subject to meeting annual
17 procurement targets and is not required to meet a portfolio
18 balance requirement.

19 In preparing San Francisco Public Utilities
20 Commission's RPS POU Verification Results Report, staff
21 followed the methods described in the Energy Commission's
22 Renewables Portfolio Standard Eligibility Guidebook and
23 further detailed in the Renewables Portfolio Standard
24 Verification Methodology Report. San Francisco Public
25 Utilities Commission has reviewed and accepted staff's

1 findings as contained in this report.

2 The staff draft of the RPS POU Verification
3 Results Report was posted for public comment on June 16th.
4 Three public comments were received. Staff reviewed the
5 comments and determined no changes to the report were
6 needed based on these comments.

7 These verification results do not represent a
8 compliance determination. Following adoption of the RPS
9 POU Verification Results Report, Energy Commission staff
10 will evaluate the POU's compliance with the RPS
11 requirements for Compliance Period 2 in accordance with the
12 RPS POU Regulation and will provide a recommendation to the
13 Executive Director for a final compliance determination.

14 Staff recommend the Energy Commission adopt the
15 RPS POU Verification Results Report for San Francisco
16 Public Utilities Commission Hetch Hetchy Power.

17 Thank you for your consideration, this concludes
18 my presentation. And we'll happy to respond to any
19 questions you may have.

20 CHAIR HOCHSCHILD: Thank you. Let's go to public
21 comment, Madam Public Advisor?

22 MS. GALLARDO: Thank you, Chair. I do have one
23 comment. This is from Steve, S-T-E-V-E Uhler, U-H-L-E-R.

24 "Please neutrally and publicly relate my points
25 listed below to the Commission pursuant to Title 20,

1 Subdivision 2556(j) for the California Energy Commission's
2 July 8th, 2020 Business Meeting, Agenda Item 6.

3 "Please confirm that the Commissioners have read
4 this docketed comment and my other comments filed in 18-
5 RPS-02.

6 "Please ask the Energy Commission Chair, David
7 Hochschild, to clarify if the standard for determining when
8 electricity is a product found in decisional law known as
9 *Fong V. Pacific Gas & Electric Co. (1988)* will be used in
10 the adjudication of the Verification Results Report.

11 "If *Fong* is not used, asked the Energy Commission
12 Chair, David Hochschild, to clarify what standard the
13 Commissioners are using to define 'product' for verifying
14 retail product claims in this state

15 "As of the writing of this request it appears
16 you, the Public Advisor, have not identified what standard
17 the Commission is using to define 'product' for verifying
18 retail product claims in this state.

19 "Please explain to the Commissioners your effort
20 to identify the public records containing the standard for
21 the definition of 'product' for verifying retail product
22 claims in this state.

23 "Please tell the Commissioners if the Commission
24 has a record of considering *Fong v. Pacific Gas & Electric*
25 in the defining 'product' for verifying retail product

1 claims in this state for the standard the Commission may be
2 using in the adjudication of the Verification Results
3 Report.

4 "Please let the Commissioners know that the
5 docket system does not have all writings deemed a record
6 for the proceedings available for self-serve to the public.
7 See the link for docket numbers 06-IEP-01C.

8 "Please let the Commissioners know that many
9 records that should be filed pursuant to Title 20, section
10 1208, are now being filed in another filing system that
11 appears to not comply with 1208. See the web address:
12 www.energy.ca.gov/filebrowser/download/2232."

13 That concludes the comment. Thank you.

14 CHAIR HOCHSCHILD: Thank you.

15 Are there any additional commenters on the line?

16 MS. CARLOS: Yes Chair, this is Patricia Carlos.
17 We have James Hendry with the San Francisco Public
18 Utilities Commission. James, if you'd like to begin your
19 comment.

20 MR. HENDRY: Hi. Good morning, Commissioners.
21 My name is James Hendry with the San Francisco Public
22 Utilities Commission. I just wanted to give a thanks out
23 to the Commission staff for working on this issue for us
24 and register approval. And just wanted to be available if
25 you had any questions or comments. Thank you.

1 CHAIR HOCHSCHILD: Great. Thank you, James.

2 Let's move on to Commissioner discussion.

3 Commissioner Douglas?

4 COMMISSIONER DOUGLAS: Thank you, so just a
5 couple of brief comments. First of all, I will just say
6 that the bulk of Mr. Uhler's comments don't really pertain
7 in my mind to this item. We're really looking at the
8 verification report for San Francisco. And on that I want
9 to note that this is actually the last of the verification
10 reports that we needed to do for this compliance period.
11 And I want to thank staff for addressing -- and what I
12 mean by that is Compliance Period 2 -- I want to thank
13 staff for getting through all of these verification reports
14 now.

15 We are definitely making tangible and clear
16 progress towards implementing the RPS and moving through
17 these reports. And the San Francisco report does get a bit
18 more complex because there are some special provisions
19 applying to San Francisco. But I think the work that was
20 done is very good and so I strongly support it.

21 I don't know really if anyone, Noemi if you or if
22 staff want to address the questions Mr. Uhler raised about
23 just where materials are filed. But you guys seem to be,
24 in my mind, commenting on matters that aren't really
25 germane to this report.

1 CHAIR HOCHSCHILD: Okay I think this --

2 MS. GALLARDO: This is the Public Advisor.

3 CHAIR HOCHSCHILD: Oh, go ahead, Noemi.

4 (Overlapping colloquy.)

5 MS. GALLARDO: I just wanted to respond,
6 Commissioner Douglas, quickly that we have been working
7 with Mr. Uhler to let him know where he can submit his
8 comments and the --

9 COMMISSIONER DOUGLAS: Thank you.

10 MS. GALLARDO: -- appropriate venues for that.
11 And also we've been working to get him information as
12 needed.

13 CHAIR HOCHSCHILD: Great.

14 COMMISSIONER DOUGLAS: Thank you for that.

15 CHAIR HOCHSCHILD: Okay, other comments on this
16 item?

17 Vice Chair Scott?

18 VICE CHAIR SCOTT: I have no additional comments
19 on this item other than to say congratulations for
20 finishing up Compliance Period 2. I know that was a heavy
21 lift. Thank you Commissioner Douglas for your leadership
22 there and to the staff as well.

23 CHAIR HOCHSCHILD: Hear, hear.

24 Commissioner McAllister?

25 COMMISSIONER MCALLISTER: Oh, hear, hear, but no

1 additional comment.

2 CHAIR HOCHSCHILD: Commissioner Monahan?

3 COMMISSIONER MONAHAN: (Laughs.) Hear, hear
4 again. No additional comments.

5 CHAIR HOCHSCHILD: Okay, let's make a motion.

6 Commissioner Douglas, would you be willing to
7 move the item?

8 COMMISSIONER DOUGLAS: Yes, I move approval of
9 this item.

10 CHAIR HOCHSCHILD: Okay, Vice Chair Scott would
11 you be willing to second?

12 VICE CHAIR SCOTT: Yes, I second.

13 CHAIR HOCHSCHILD: Okay all in favor?

14 Vice Chair Scott?

15 VICE CHAIR SCOTT: Aye.

16 CHAIR HOCHSCHILD: Commissioner Douglas?

17 COMMISSIONER DOUGLAS: Aye.

18 CHAIR HOCHSCHILD: Commissioner McAllister?

19 COMMISSIONER MCALLISTER: Aye.

20 CHAIR HOCHSCHILD: Commissioner Monahan?

21 COMMISSIONER MONAHAN: Aye.

22 CHAIR HOCHSCHILD: And I vote aye as well. That
23 item passes unanimously.

24 Let's move on to Item 7, Imperial Western
25 Products.

1 MS. CRAIG: Good morning Chair, Vice-Chair and
2 Commissioners. My name is Hannah Craig and I am with the
3 Energy Research and Development Division. Staff is seeking
4 approval for one project funded by the Food Production
5 Investment Program.

6 The proposed project would fund a commercial
7 microgrid using the modular Gridscape microgrid controller
8 developed as part of the EPIC program at Imperial Western
9 Products, a pet food manufacturer in Coachella. Over 35
10 percent of Imperial Western Product's electricity use would
11 be offset by renewable solar electricity. And the
12 microgrid would provide resiliency in a blackout-prone area
13 for a major employer in a disadvantaged community. The
14 project is expected to provide priority population benefits
15 through workforce development.

16 Staff recommends approval of this award and I am
17 available to answer any questions you may have. In
18 addition, Amanda Johnson from Imperial Western Products is
19 on the line and would like to make a comment. Thank you.

20 CHAIR HOCHSCHILD: Great. Thank you.

21 Madam Public Advisor, any public comment on this
22 item?

23 MS. GALLARDO: This is Noemi, the Public Advisor.
24 No written comment. I'll defer to Patricia for folks on
25 the line.

1 MS. CARLOS: This is Patricia. We have one
2 person signed up to speak, Amanda Johnson with Imperial
3 Western Products. Amanda, begin your comment please.

4 MS. JOHNSON: Hi. On behalf of Imperial Western
5 Products, I would just like to thank the CEC for this
6 opportunity. We appreciate the CEC's commitment to clean
7 energy and look forward to working with the CEC for a
8 second time to reduce GHG In California and investing in a
9 renewables future for California.

10 And also a slight correction, we don't produce
11 pet food we produce animal feed for agricultural sector.
12 Thank you.

13 CHAIR HOCHSCHILD: Got it. Okay, thank you.
14 Different type of pets I guess. Thank you.

15 Let's go to Commissioner discussion. Vice Chair
16 Scott.

17 VICE CHAIR SCOTT: Yes. So you all will recall
18 that last month we had a presentation kind of on the
19 overarching investments that the FPIP program has made, and
20 a series of projects. And they are all really quite
21 interesting projects. This one as you heard will
22 demonstrate a microgrid. And I think that the FPIP program
23 has really been quite successful. It's been interesting to
24 see how quickly people are able to get these technologies
25 in to their facilities.

1 Again I had mentioned that I thought that our
2 team did a really fantastic job reaching out to food
3 producers to let them know about this program, and many
4 other things that you heard me say last month about the
5 program carry on into this month as well. So that is my
6 only comment. I'll pause to see if others have comments.

7 CHAIR HOCHSCHILD: Okay, let's go through this.
8 Commissioner Douglas, any comments?

9 COMMISSIONER DOUGLAS: Yeah just briefly , this
10 is an exciting project. I'm looking forward to supporting
11 it.

12 CHAIR HOCHSCHILD: Commissioner McAllister?

13 COMMISSIONER MCALLISTER: Yeah likewise, it looks
14 really great. Looking forward to the lessons learned.

15 CHAIR HOCHSCHILD: Okay, Commissioner Monahan?

16 COMMISSIONER MONAHAN: Yes, no comments. I agree
17 with everything that's been said so far.

18 CHAIR HOCHSCHILD: All right let's entertain a
19 motion. Vice Chair Scott would you be willing to move the
20 item?

21 VICE CHAIR SCOTT: Yes I move approval of Item 7.

22 CHAIR HOCHSCHILD: Commissioner McAllister would
23 you be willing to second?

24 COMMISSIONER MCALLISTER: I'll second Item 7.

25 CHAIR HOCHSCHILD: All right all in favor? Vice

1 Chair Scott?

2 VICE CHAIR SCOTT: Aye.

3 CHAIR HOCHSCHILD: Commissioner Douglas?

4 COMMISSIONER DOUGLAS: Aye.

5 CHAIR HOCHSCHILD: Commissioner McAllister?

6 COMMISSIONER MCALLISTER: Aye.

7 CHAIR HOCHSCHILD: Commissioner Monahan?

8 COMMISSIONER MONAHAN: Aye.

9 CHAIR HOCHSCHILD: And I vote aye as well. That
10 item passes unanimously. Thank you everybody.

11 Let's move to Item 8, Assessing Long-Duration
12 Energy Storage Deployment Scenarios to Meet California's
13 Energy Goals.

14 MR. GRAVELY: Good morning Chairs, this is Mike
15 Gravely. Can you hear me?

16 CHAIR HOCHSCHILD: Yes, we can.

17 MR. GRAVELY: Okay. So I'm going to do a little
18 bit of a lead-in discussion. And this is an overview for
19 the next three presentations, because they're connected to
20 the one that you approved last month.

21 So good morning Chair, Vice Chair and
22 Commissioners. I am Mike Gravely, a Senior Engineer with
23 the Energy Research and Develop Division.

24 In 2019, the Energy Research and Development
25 Division completed a portfolio of energy storage grant

1 opportunities with the goal of assessing and demonstrating
2 the value of the full range of energy storage technologies
3 that are expected to help California meet our future clean
4 energy needs.

5 Additionally, the Division wanted to provide
6 grant opportunities to emerging and near commercial energy
7 storage companies to allow them to transition from research
8 phase to a successful commercial company. The response to
9 these grant opportunities was exceptional and the Energy
10 Commission receiving approximately five times the number of
11 proposals we were able to award. A sign that this is an
12 extremely healthy industry with a lot on new innovative
13 technologies needing the opportunity to prove their
14 capabilities.

15 Last month I presented the result of our
16 solicitation for the early stage energy storage research
17 technologies that are expected to provide energy storage
18 duration capabilities from a few hours to over 100 hours.

19 Today, you will hear from three additional
20 solicitations that will complete the broad portfolio of
21 energy storage technologies, capabilities, and
22 opportunities.

23 First, Item 8 is for two grants designed to
24 develop and deliver detailed analytical studies and models
25 that will accurately represent the role long duration

1 storage can provide in meeting the state's 2030 and 2045
2 goals. These two grants are paper studies and are not
3 field demonstrations. Jeffery Sunquist will provide the
4 specific details on these grants in a few minutes.

5 Item Number 9 is for grants that will provide
6 actual field demonstrations of working energy storage
7 systems that are closer to commercial market and that are
8 emerging technologies from the work with us last month.
9 These technologies will be applied in a variety of
10 applications. These technologies provide from 10 hours to
11 24 hours duration, are being installed in Native American
12 tribe lands, disadvantaged communities, low-income
13 communities, military bases, and residential homes.

14 As I mentioned earlier, we received a wide range
15 of proposals for this solicitation and we are awarding four
16 grants to Native American tribe lands in three of the four
17 categories that that solicitation had. We also have seven
18 of these grants supporting low-income and disadvantaged
19 communities, a result we have not been able to achieve in
20 the past. This is a sign that our structured outreach is
21 reaching all of California. Quenby Lum will provide the
22 specifics on these details in a few minutes.

23 Item 10 will address two grants that will
24 demonstrate battery second life from Electric Vehicle
25 batteries. With California leading the nations in electric

1 vehicle acceptance, California will have the largest
2 opportunity to fully utilize these batteries that have
3 substantial energy left for stationary energy use. Tanner
4 Kural will provide the details on that grant.

5 In summary, by approving this portfolio of energy
6 storage projects today and with the approvals from last
7 month the Energy Commission will have the most diverse and
8 complete set of energy storage research projects than any
9 other government agency, not only California but the
10 nation.

11 It's important to point out that some of the
12 projects in the portfolio that will provide actual working
13 demonstrations over the next few years offer capabilities
14 and price structure that would have been considered
15 impossible to reach nine years ago when the EPIC Program
16 was initiated. A sign that the state's investments in new
17 technologies is working and providing solutions that we'll
18 have, that will not exist if not for these investments.

19 With that I'll turn it over to Jeffrey Sunquist
20 for Item No. 8.

21 MR. SUNQUIST: This is Jeffrey Sunquist. Next
22 slide please.

23 Hello Chair, Vice Chairs, and Commissioners. My
24 name is Jeffrey Sunquist and I am from the R&D Division,
25 here to present the two agreements from this solicitation.

1 Next slide please.

2 The purpose of this solicitation is to understand
3 the role that long-duration energy storage will have in
4 reaching California's clean energy goals. Currently
5 available tools and methods are capable of determining the
6 role of short duration energy storage such as lithium ion,
7 which has a duration of four hours or less. But we now see
8 a rapidly developing and diversifying portfolio of storage
9 technologies that have longer durations up to 100 hours or
10 more.

11 This solicitation was released in January 2020
12 addressing the need to better understand the role that long
13 duration energy technologies will have in reaching
14 California's energy goal of a 100 percent zero-carbon grid
15 by 2045. Long duration energy storage will help with
16 overcoming the challenges of renewable intermittency,
17 eliminating the need for peaker plants, and reducing
18 congestion on transmission lines.

19 However, long duration energy storage is
20 comparatively less understood in terms of capacity needs,
21 costs scaling, and paths to market. In order to better
22 understand these factors this solicitation aims to develop
23 more capable tools and methods, which can accommodate
24 longer time scales, varying geography and weather, and a
25 diverse portfolio of technologies. Up to two awards are

1 possible, so that a broader understanding can be found with
2 different approaches. Next slide please.

3 The UC Merced team will improve -- I'm sorry --
4 the two possible awardees are UC Merced and Energy and
5 Environmental Economics. The UC Merced team will improve
6 existing modeling tools, SWITCH and RESOLVE, to enable
7 modeling of grid level long duration energy storage. The
8 team will incorporate multi-day weather events, longer time
9 scopes, and feedback mechanisms to study the interaction of
10 renewable penetration, vehicle electrification, and grid
11 flexibility.

12 The E3 team will build upon their experience with
13 previous technologies, including RESOLVE and FormWare, to
14 develop a new, open source modeling toolkit and public
15 dataset. The toolkit will model various forms of long
16 duration energy storage, including chemical, mechanical, or
17 hydrogen storage. Next slide please.

18 This concludes my presentation. I am available
19 to address comments or questions. Thank you.

20 CHAIR HOCHSCHILD: Great. Thank you.

21 Let's go to public comment. Madam Public
22 Advisor, do we have any public comment on this item?

23 MS. GALLARDO: This is Noemi, the Public Advisor.
24 No written comments. I'll defer to Patricia to see if
25 there's anyone on the line.

1 MS. CARLOS: This is Patricia. There is no one
2 on the line for this item.

3 CHAIR HOCHSCHILD: Okay, let's go Commissioner
4 discussion. Madam Vice Chair?

5 VICE CHAIR SCOTT: Yes. So I just want to take a
6 moment to underscore Mike's excellent presentation to you
7 all and echo what he said. I won't repeat all of that
8 information. And this actually goes across Items 8, 9 And
9 10, but I did want to highlight a couple of things that he
10 mentioned, which is the importance of sustained investment
11 to help push this type of technology forward. And to
12 really be looking in the storage space at long term what's
13 the next step so we're always just a little bit out ahead
14 of we're trying to push the technology as we go in our
15 quest towards 100 percent clean energy. So I think the
16 importance of the sustained investments in this space can't
17 be understated. Mike highlighted that really well in his
18 introductory presentation.

19 And I also wanted to highlight how pleased I am
20 also by the tribal response. And this is in no small part
21 due to the excellent work of Commissioner Douglas and her
22 team in outreach with the tribes over quite a few years,
23 but I think culminating with some workshops that we've had
24 over the last maybe 6, maybe 12 months or so. And I'm just
25 really pleased by this, the tribal response here.

76

1 And also the number of projects that we have in
2 low-income and disadvantaged communities as well. I want
3 to give a shout-out to the EPIC team for their excellent
4 outreach in this space. I think we're always working to
5 take in information, figure out how we can continue to
6 improve our outreach, and engage communities in a really
7 meaningful way. And they're always striving to improve.
8 And I think that we can see that reflected in this as well.

9 So I just wanted to underscore a couple of the
10 points that Mike had made. And again, that will carry
11 through for the next Item 8, Item 9 and Item 10.

12 CHAIR HOCHSCHILD: Thank you.

13 Commissioner Douglas?

14 COMMISSIONER DOUGLAS: Just a couple brief
15 comments. And thank you Commissioner Scott for your
16 comments as well. In terms of these assessments I think
17 it's extremely valuable. I think these assessments are
18 coming in to, just starting at a critical time. We really
19 need to be able to understand and evaluate the values, the
20 goal of long duration storage. We know it's important. We
21 know we need to do more in terms of how to optimize an
22 approach to bring long-duration storage into our grid in a
23 scaled-up way and in a way that helps us meet our goals.
24 So I'm excited to see this move forward and see this on our
25 Business Meeting.

1 And I will just say briefly I might comment again
2 when the next item comes up, but I was really pleased at
3 the response to the long duration storage solicitation.
4 Not just from tribes, although I was delighted to see so
5 many tribes put together such strong projects, but from
6 many, many different applicants. I mean I think, Mike may
7 have just said that this just got a tremendous response.
8 And it shows both the importance of the resource and also
9 the value of the outreach that's been done to tribes, to
10 the military, to many other folks out there in the state
11 who are doing such tremendously innovative work and making
12 things happen. So I'm really happy to see this. Thanks.

13 CHAIR HOCHSCHILD: Terrific.

14 Any comments, Commissioner McAllister?

15 COMMISSIONER MCALLISTER: No. This looks like a
16 -- I totally agree with what's been said, this is a great
17 set of projects coming up. Long duration storage is a big
18 piece of the puzzle. We've got to figure out and learn how
19 to get the costs down and optimize implementation, so this
20 is going to be great to see.

21 CHAIR HOCHSCHILD: Okay.

22 And Commissioner Monahan, any comments?

23 COMMISSIONER MONAHAN: Yeah. I had a few
24 questions actually. I'm wondering, I'm not sure if it's
25 Mike or Jeffrey, but to elaborate more on this intersection

1 between electric transportation and long duration storage.

2 MR. GRAVELY: So this is Mike. I can start off
3 with it and Jeffrey can also pick up. So when we are doing
4 these studies the goal is to look at the complete estimated
5 network in 2045, which of course we're hoping to have a
6 very intensive electrification and transportation system.
7 So when they're doing their modeling and when they are
8 doing remote test and adjustment (phonetic) they will
9 include a transition to the transportation system. And
10 this will be interactive with the industry and our staff,
11 so we want to be sure that we get the right assumption.

12 But the ultimate goal here is to look at how
13 California will be in 2045 and figure out how energy
14 storage plays into it. As we mentioned later on, one of
15 those questions is how do we use electric vehicle batteries
16 when the electric vehicle no longer can use them?

17 MR. SUNQUIST: This is Jeffrey Sunquist. I can
18 give another specific example of long duration energy
19 storage with vehicle electrification. One challenge with
20 vehicle electrification for fleet vehicles is demand charge
21 management, particularly with fleets that have strict
22 schedules of when the vehicles are used and when they are
23 charged. for instance, a bus fleet may have 80 buses that
24 all need to be charged overnight. And that can cause a
25 pretty high demand charge in some cases, and long duration

1 energy storage could help smooth out that demand.

2 CHAIR HOCHSCHILD: Great.

3 COMMISSIONER MONAHAN: Thank you. That's really
4 helpful to hear. So it really is a combination of how do
5 you use second-life batteries when they are no good for the
6 vehicles as a storage. But also how to use storage to
7 power the vehicle so that the grid, it just makes it easier
8 for us to reach our clean energy goals. Is that a fair
9 characterization?

10 MR. SUNQUIST: Yes. And I imagine these studies
11 would look at both sides of that.

12 COMMISSIONER MONAHAN: The Chair and I were in a
13 meeting where we heard of a study that indicated that
14 California could meet all of its storage from second-life
15 battery from vehicles, which was kind of a shocking bit of
16 -- at least for me -- to think about second-life batteries
17 for vehicles being such a potential tremendous resource. I
18 mean, there's a lot of challenges to reaching that. And I
19 think a lot of the EPIC investments that we're going to
20 talk about later are going to be addressing some of those
21 challenges. But an interesting area of research.

22 CHAIR HOCHSCHILD: Well, I just had two comments
23 to add. One is that a lot of what we're doing as we push
24 to 100 percent clean energy future is achieving improved
25 efficiency as in existing industries; in solar, in wind and

80

1 energy efficiency technologies.

2 And then there is also the advent of totally new
3 industries. The electric vehicle industry wasn't a thing
4 until 15 to 20 years ago and now it's growing rapidly. And
5 long duration energy storage wasn't a thing other than
6 hydro, right? So there are some new fields including
7 offshore wind that fit in that category, just wholesale new
8 industries that I think are very promising. And I'm really
9 gratified for that reason to see these grants.

10 And then just with respect to the rest of the
11 grants we're going to make today this represents -- and
12 Mike correct me if I'm wrong -- the largest set of grants
13 that we have made to tribal energy projects ever. I
14 believe it's \$13 million altogether, Mike. But that's a
15 remarkable accomplishment. And I do want to say that this
16 is very much in keeping with the Governor's vision of
17 building clean energy future in a way that lifts up all
18 communities and especially disadvantaged communities. So
19 I'm really proud of the staff's work. And a special
20 compliment to Vice Chair Scott and to Commissioner Douglas
21 for doing that, so much outreach over the last years with
22 the tribal community. In particular, Commissioner Douglas
23 who organized with others that Tribal Energy Summit that we
24 had last July, which I was fortunate to be able to attend.
25 So thank you for all that work building forward to today.

81

1 Unless there are other comments let's go ahead
2 and entertain the motion. Vice Chair Scott would you be
3 willing to move the item?

4 VICE CHAIR SCOTT: Yes, I move approval of Item
5 8.

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

8 COMMISSIONER DOUGLAS: I'm sorry, I just had a
9 question. Did we do public comment on this item?

10 CHAIR HOCHSCHILD: Oh I'm sorry, I don't think we
11 have public comment.

12 COMMISSIONER DOUGLAS: Oh, okay. Sorry.

13 CHAIR HOCHSCHILD: Let me just double-check.

14 Madam public advisor do we have anyone on the line?

15 MS. GALLARDO: Yeah there's --

16 MS. CARLOS: There's nobody on the line.

17 MS. GALLARDO: Yeah, no written comment either.

18 CHAIR HOCHSCHILD: Okay, thank you. Then
19 Commissioner Douglas would you be willing to second?

20 COMMISSIONER DOUGLAS: Absolutely. I second this
21 item.

22 CHAIR HOCHSCHILD: Okay all in favor?

23 Vice chair Scott?

24 VICE CHAIR SCOTT: Aye.

25 CHAIR HOCHSCHILD: Commissioner Douglas?

1 COMMISSIONER DOUGLAS: Aye.

2 CHAIR HOCHSCHILD: Commissioner McAllister?

3 COMMISSIONER MCALLISTER: Aye.

4 CHAIR HOCHSCHILD: Commissioner Monahan?

5 COMMISSIONER MONAHAN: Aye.

6 CHAIR HOCHSCHILD: And I vote aye as well. That

7 item passes unanimously. Let's move on to Item 9,

8 Demonstrating Long Duration, Title 24-Compatible Energy

9 Storage Technologies

10 MS. LUM: Good morning Chair, Vice Chair, and
11 Commissioners, I'm Quenby Lum from the Energy Research and
12 Development Division. Next slide please.

13 So this solicitation focused on addressing two
14 main needs: The first is longer duration storage to provide
15 resilience and to store excess renewable energy for use at
16 a later time; the second is the new Title 24 home
17 efficiency standards for residential solar installations,
18 and the role of storage to support these systems.

19 The focus of this solicitation was on the
20 demonstration of storage systems with a minimum duration of
21 10 hours, using non-lithium ion technologies that are close
22 to commercialization. And also to demonstrate the value of
23 storage for residential customers in solar plus storage
24 applications.

25 There were four groups of funding and I'll go

1 over each of these four groups and the proposed projects
2 next. Next slide please.

3 So the first group focused on non-lithium ion
4 longer duration storage, and these are larger systems at
5 400 kilowatts and a minimum duration of 10 hours.

6 We have two proposed awards. One is to the
7 Rincon Band of Luiseno Indians and they are proposing to
8 install a flow battery combined with a flywheel that will
9 be connected with solar PV to provide resiliency and cost
10 savings for a wastewater treatment plant, a gas station and
11 convenience store, an office building, and Harrah's Casino
12 and Resort, which also serves as the tribe's emergency
13 operation center and their emergency shelter. And this is
14 in San Diego County.

15 Our second proposed project is with Indian Energy
16 and this is a project with mixed integration of different
17 types of storage technologies, including a vanadium redox
18 flow battery, a zinc hybrid cathode battery, and a
19 mechanical flywheel to support a microgrid. And this will
20 be demonstrated at Camp Pendleton, a military base in San
21 Diego County. Next slide please.

22 And for Group 2 the focus was on longer duration
23 non-lithium ion source for Native American Tribal
24 Communities. And these are smaller systems at 50 kilowatts
25 and 10 hours. And with two proposed awards, GRID

1 Alternatives would like to -- proposes installing a flow
2 battery to provide support to a fire station for the Soboba
3 Band of Luiseno Indians in Riverside County.

4 And the second project with Indian Energy would
5 be a flywheel that will be installed and used to pump water
6 from water wells to a storage tank that is used to supply
7 drinking water to the Viejas Band of Kumeyaay Indians. And
8 this is in San Diego County. Next slide please.

9 For Group 3, the focus was on longer duration
10 non-lithium ion storage technologies for low-income and
11 disadvantaged communities. And again, these are smaller
12 systems at 50 kilowatts and 10 hours.

13 And two proposed awards: Mission Produce is a
14 global supplier of avocados. And they would be installing
15 a flow battery at their food processing and refrigeration
16 facility in Oxnard, Ventura County. And next we have
17 Antelope Valley Water Storage. This is an aquifer pumped
18 hydro project to provide support for a groundwater storage
19 facility at the Willow Springs Water Bank. And this is in
20 the Central Valley in Kern County. Next slide please.

21 This is our last group, Group 4, for residential
22 storage. And we have three proposed awards for UC
23 Riverside, BoxPower and EPRI. These projects will be using
24 commercially available residential storage systems to
25 demonstrate the value of energy storage combined with PV

1 solar for residential customers at their homes. And this
2 slide is showing a variety of different commercially
3 available residential storage systems that will be used in
4 these demonstrations. Next slide please.

5 So here we see a map with the locations of the
6 projects for Groups 1, 2 and 3. For Group 1, Longer
7 Duration, we have two projects in San Diego County depicted
8 with the red pins.

9 For Group 2 we have Native American Communities.
10 We have one project in Riverside County and one in San
11 Diego County depicted with the green pins.

12 And Group 3 Disadvantaged and Low-income
13 Communities, we have one project in Ventura County and one
14 in Kern County. And this is shown with the blue pins.
15 Next slide please.

16 This is a map of the locations for the Group 4
17 Residential Storage Projects. We asked for a minimum of 15
18 sites in 3 different climates, so each project has multiple
19 demonstration sites that are distributed throughout the
20 state. Next slide please.

21 This concludes my presentation and I'm happy to
22 answer any questions. Staff is on the line also to answer
23 questions if needed. And I also believe two grant
24 recipients are available for comments as well. Thank you.

25 CHAIR HOCHSCHILD: Thank you so much.

1 Let's move on to public comment. Madam Public
2 Advisor, do we have any public comment?

3 MS. GALLARDO: This is Noemi, the Public Advisor.
4 No written comment. I'll defer to Patricia for anyone on
5 the line.

6 MS. CARLOS: This is Patricia Carlos. We have
7 three people who signed up to speak. The first is Mark
8 Beuhler with Antelope Valley Water Storage, second is Josh
9 Simmons with Prosper Sustainably, LLC and finally Ram
10 Narayanamurthy with Electric Power Research Institute.

11 Mark, if you'd like to begin your public comment,
12 please?

13 MR. BEUHLER: Yes, thank you. I have no comment.
14 I am just available to answer questions. Thank you.

15 MS. GALLARDO: Josh Simmons. Josh?

16 MR. SIMMONS: I'm standing by. Can you hear me?

17 CHAIR HOCHSCHILD: Yeah, we can hear you.

18 MR. SIMMONS: Okay, great. Sorry about that. So
19 yeah, I'm working with the Rincon Band of Luiseno Indians
20 and I just want to say -- entrust my appreciation for all,
21 I mean, for this funding opportunity -- and for all the
22 efforts the Energy Commission's been making to bring these
23 types of projects, these types of opportunities to tribes
24 throughout California. We're very excited to deploy these
25 newer technologies to both demonstrate them, to hopefully

87

1 lead to further adoption and advances in these technologies
2 and to meet the needs of the Rincon community as well. And
3 so I'm really excited.

4 And I also was recently awarded, Prosper
5 Sustainably was recently awarded the contracts through the
6 statewide tribal gap analysis. So I'm also excited to work
7 with the Strategic Growth Council and CEC. And in helping
8 to identify and hopefully bring more opportunities that are
9 needed to tribes in the areas of energy and resilience. So
10 thank you very much. And I'm available for questions on
11 these, on this project.

12 CHAIR HOCHSCHILD: Thank you.

13 MS. CARLOS: Ram?

14 MR. NARAYANAMURTHY: Yeah, good morning

15 Commissioners. And I just wanted to chime in and say
16 thank you. Thank you for the opportunity to continue the
17 research on zero-carbon buildings. And we are quite a bit
18 happy to have this opportunity to look at how the Building
19 Code is enhancing and impacting grid harmonization through
20 JA12. And there and by extension, also JA5 and JA13. And
21 also to the builders in the building community is excited,
22 because they want to understand how customers are going to
23 adopt these flexible resources, I think, that are going to
24 be very important for the grid to achieve our 2045 goals.
25 So a great, exciting opportunity. And thank you very much

1 to the Commission for the opportunity.

2 CHAIR HOCHSCHILD: Thank you, Ram, appreciate
3 that.

4 Let's move on to Commissioner discussion. Madam
5 Vice Chair?

6 VICE CHAIR SCOTT: Sure. So I provided kind of
7 my overarching summary right before we jumped into the
8 storage. Just a reminder, Item 8 was the paper studies
9 that will look into this and help us find the data and
10 answer some of the critical questions on long-term storage.

11 This is Item 9 here and this is our demonstration
12 of some of these long-term storage options across a bunch
13 of different sites. And one thing that I wanted to
14 highlight that Quenby mentioned is it's 15 sites across 3
15 different climate zones. And I think as you all can know,
16 that's really important in the state when we're looking at
17 building standards and how long-term storage can function
18 across different parts of the state and with different
19 types of climate. So just like on all of these I'm already
20 looking forward to the answers to find out how this works,
21 so I'm happy to recommend Item 9 to you all.

22 CHAIR HOCHSCHILD: Are you happy enough to make a
23 motion?

24 VICE CHAIR SCOTT: I am. Let me see if any of
25 the other Commissioners have comments that they'd like to

1 make first.

2 COMMISSIONER DOUGLAS: You know, I'll just
3 briefly say that I also spoke briefly to this. It's just
4 so nice to see yet another very solid set of timely and
5 innovative proposals that the EPIC division has brought us.
6 It's nice to see the connection between these demonstration
7 projects with the building standards and the diversity of
8 climate zones and so on. And of course, the very strong
9 participation by tribes and with work in disadvantaged
10 communities is just another incredibly important aspect to
11 this. So I'm in strong support.

12 COMMISSIONER MCALLISTER: So I wanted to chime in
13 as well. And what Commissioner Douglas just said,
14 definitely the connecting the dots, and just kudos to
15 Laurie and Virginia and the whole team, Mike and the whole
16 team in the R&D Division with the EPIC program for really
17 being very perspective and innovative in gathering up ideas
18 for these kinds of solicitations and making sure that they
19 support the broader work of the Commission and the state.
20 I think that's just key and it shows in these items when
21 they come to us because they are kind of consistently ahead
22 of the curve, which is pretty amazing.

23 And then with respect to the JA12 kind of tie-in
24 here, this is a great opportunity for us to really get deep
25 into understanding about how JA12 is operating in the real

90

1 world so that we can continually adapt it and update it as
2 needed to make sure that it's reflecting the needs of the
3 grid and the consumer, on both sides of the meter and
4 really kind of achieve multiple goals at once. And that's
5 a balance. And so, often technology provides reasons for
6 us to update and modernize. And so that process with the
7 joint appendices can absolutely do that. So really, really
8 interested in seeing how these projects go.

9 CHAIR HOCHSCHILD: Commissioner Monahan, any
10 other comments from you?

11 COMMISSIONER MONAHAN: Yeah, just one final set
12 of, I guess, congratulatory comments to the team that put
13 these together, to Vice Chair Scott, Commissioner Douglas.

14 I actually I think it would be great at some
15 point to really have some kind of written record of lessons
16 learned about how to do outreach in a way that reaches
17 diverse communities. These are all grants that I think we
18 can feel good about the fact that they are really
19 reflective of our goal to make sure that this is clean
20 energy for all and that especially low-income and
21 disadvantaged communities benefit from our investments.
22 And these are so reflective of this. So just like very
23 strong support.

24 And as we curtail renewables on a daily basis
25 this long-term energy storage is really key for us being

1 able to meet our clean energy goals. So this is the
2 perfect intersection of equity and energy.

3 CHAIR HOCHSCHILD: Well said, so on that note
4 Vice Chair Scott are you willing to make a motion on this
5 item?

6 VICE CHAIR SCOTT: Yes. I will move approval of
7 Item 9.

8 CHAIR HOCHSCHILD: Commissioner Monahan would you
9 be willing to second?

10 COMMISSIONER MONAHAN: I second.

11 CHAIR HOCHSCHILD: Okay. All in favor say aye.
12 Vice Chair Scott?

13 VICE CHAIR SCOTT: Aye.

14 CHAIR HOCHSCHILD: Commissioner Douglas?

15 COMMISSIONER DOUGLAS: Aye.

16 CHAIR HOCHSCHILD: Commissioner McAllister?

17 COMMISSIONER MCALLISTER: Aye.

18 CHAIR HOCHSCHILD: Commissioner Monahan?

19 COMMISSIONER MONAHAN: Aye.

20 CHAIR HOCHSCHILD: And I vote aye as well. That
21 item passes unanimously.

22 CHAIR HOCHSCHILD: Let's move on to Item 10,
23 Validating Capability of Second-Life Batteries to Cost-
24 Effectively Integrate Solar Power for Small-Medium
25 Commercial Building Applications.

1 MR. KURAL: Good morning Chair, Vice
2 Chair, and Commissioners, this is Tanner Kural from
3 the Research and Development
4 Division's Energy Generation Research Office.

5 As adoption of electric vehicles accelerates,
6 there is an increasing need for handling retired Electric
7 Vehicle batteries that have reached the end of their useful
8 life. EV batteries are typically retired at 70 to 80
9 percent of their original capacity, at which they are often
10 still capable of performing use cases other than powering
11 EVs. Giving retired EV batteries a second life as
12 stationary energy storage would alleviate the burden on the
13 battery recycling pathway and lessen the need for newly
14 mined materials.

15 The research projects before you today are
16 responses to the Second-Life Battery solicitation,
17 which focused on funding applied research and development
18 projects that aim to validate the capability of second-life
19 batteries to cost-effectively integrate solar PV and
20 provide resiliency for small-to-medium-sized commercial
21 buildings.

22 Projects funded by this solicitation will
23 characterize the degradation rate of second-life batteries
24 through laboratory testing and pilot test various
25 technology improvements and operational strategies that

1 optimize the useful life of the second-life battery.

2 Staff recommends approval of the following two
3 research agreements, which are the final two of four
4 projects proposed for award under this solicitation.

5 San Diego State University Research
6 Foundation will conduct a laboratory-scale battery
7 characterization study to map out how a second-life
8 battery's reduction in capacity over constant charging and
9 discharging cycles relates to its initial characteristics
10 and historical performance. Through this analysis the
11 research team will develop a model that predicts how a
12 second-life battery will perform based off of its
13 morphology, structure, and chemistry.

14 Analysis from this study will be used to develop
15 a battery management system that enables proactive
16 maintenance, active cell balancing, and predictive thermal
17 management to extend the life of the repurposed EV
18 batteries. The research team will validate these control
19 algorithms at two pilot second-life battery systems. These
20 will be deployed at a recreation building in Chula
21 Vista and a childcare center in San Diego. The childcare
22 center is located in a low-income community. SDSU is
23 contributing \$835,000 in match funding to support the
24 project.

25 The second project is ReJoule Incorporated, who

1 will conduct accelerated cycling testing to establish a
2 relationship between AC impedance, DC internal resistance,
3 and battery degradation. This degradation rate model will
4 feed into the pilot testing phase, where the team will
5 validate the capability of their battery management
6 system to actively balance load and monitor degradation in
7 real-time. ReJoule will pilot second-life battery systems
8 consisting of both Nissan LEAF and Ford EV battery modules
9 at a Salvation Army homeless shelter and a commercial
10 building that supports multiple small businesses. Both
11 sites are located in low-income
12 and disadvantaged communities.

13 ReJoule is a previous recipient of CalSEED, a
14 program that supports small EPIC grant funding and provides
15 small EPIC grant funding to entrepreneurs. And this
16 project will help advance their technology even further.
17 They are contributing \$300,000 in matched funding to
18 support the project.

19 Thank you for your consideration on these
20 proposed awards. We have staff on
21 standby and are available to answer any questions you may
22 have. And I believe ReJoule is on the line for our public
23 comment. Thank you.

24 CHAIR HOCHSCHILD: Thank you.

25 So do we have public comment on the line?

1 MS. GALLARDO: This is Noemi, the Public Advisor.
2 No written comments. I'll defer to Patricia for anyone on
3 the line.

4 MS. CARLOS: This is Patricia. We have one
5 person signed up to speak, Zora Chung with ReJoule. Zora,
6 if you'd like to begin your public comment.

7 MS. CHUNG: Hi, everyone. This is Zora Chung,
8 spelled Z-O-R-A C-H-U-N-G. I'm the co-founder and CEO at
9 ReJoule. And on behalf of the team I'd like to thank the
10 Energy Commission for providing us with this opportunity.
11 We really look forward to this later journey to bring more
12 clean energy jobs back and help California become a leader
13 in repurposing used Electric Vehicle batteries. This is
14 right in line with ReJoule's mission to make clean energy
15 and transportation even more sustainable. This concludes
16 my public comment. Thank you.

17 CHAIR HOCHSCHILD: Great. Thank you. Actually,
18 Zora, I have a question for you, which is just looking
19 ahead. I mean, what are the principle barriers that you
20 see to the adoption of these second life-EV batteries? And
21 I ask because Commissioner Monahan and I were just in a
22 strategy meeting with CalEPA and CPUC and CalRecycle about
23 this vision. And the number of EVs that we're having in
24 California obviously is growing rapidly. And we're
25 expecting a lot of those batteries to be retired when they

1 get down to 75 or 80 percent of their (indiscernible)
2 capacity. I'm just curious from your perspective what are
3 the barriers to adoption of EV batteries as the second-life
4 energy storage applications?

5 MS. CHUNG: Yes, thank you for the question. I
6 think you are alluding to the fact that a lot of these EVs
7 do not have a consistent design, which leads to a challenge
8 not only during repurposing but also recycling.
9 Unfortunately because these EVs will be on the road for 8
10 to 10 years for the majority of them before they go into
11 repurposing or recycling, we can try to plan for it in
12 advance on to how to accommodate these designs. Ideally I
13 think we would support EV makers. And battery makers
14 should start having some standardization so that each
15 process is not as labor intensive and more seamless,
16 especially at end of life.

17 CHAIR HOCHSCHILD: That's helpful. This is
18 probably a conversation to continue offline, but my
19 question would be what can we as the Energy Commission and
20 the state government help facilitate to encourage that
21 process? Because we're frankly having the same discussion
22 right now with the charging companies. We have these
23 divergent different fast charger plugs, right, CCS and
24 Tesla and others. And so it's over time consolidation,
25 standardization is something that's helpful. So maybe

1 that's something that we'd follow up on. But I would --
2 maybe Commissioner Monahan and I could take that up with
3 you separately on what role we can play to help facilitate
4 that.

5 Other Commissioner -- that was it for public
6 comment, correct? Patricia were we having anyone else?

7 MS. CARLOS: Yes, that's correct, Chair.

8 CHAIR HOCHSCHILD: Okay, yeah. Let's move on.

9 Other Commissioner discussion, Vice Chair Scott?

10 VICE CHAIR SCOTT: Yeah. I will just add you
11 heard the presentation by Tanner, the project location, so
12 I'm really intrigued and excited by the project locations
13 like the Salvation Army shelter. It's a pretty broad set
14 of places where we will be demonstrating what the second-
15 life batteries with storage and solar can look like. So I
16 look forward to seeing what that is.

17 And I will also put in a shameless plug for
18 something that Tanner mentioned, which is that one of the
19 companies ReJoule was initially awarded a CalSEED grant.
20 And I just really want to give kudos to Laurie ten Hope and
21 her whole team for coming up with this wonderful idea of
22 the energy innovation pipeline where we're funding things
23 from almost somebody has an idea and you can win a small
24 grant through CalSEED. All of these are of course
25 competitively solicitations, right? But on a small grant

1 like a \$150,000 grant, you can kind of work your way up and
2 then continue to apply across the innovation pipeline.

3 So where their team designed the EPIC strategy to
4 work from getting an idea out and to researching it. What
5 does it look like? How do we manufacture it? How do we
6 put it together? And how do we get it out into the market?
7 And there's key parts of the strategy that invest in each
8 one of those steps within our energy innovation pipeline.
9 So just a shameless plug for the EPIC team and the great
10 work that they did there thinking through a smart
11 investment strategy.

12 CHAIR HOCHSCHILD: Thank you.

13 Are there other comments? Commissioner Douglas?

14 COMMISSIONER DOUGLAS: No comments.

15 CHAIR HOCHSCHILD: Commissioner McAllister?

16 COMMISSIONER MCALLISTER: No, I think this is
17 great.

18 CHAIR HOCHSCHILD: Commissioner Monahan?

19 COMMISSIONER MONAHAN: Yeah, well I'm super-
20 excited about these grants. And then the fact that ReJoule
21 is trying to test out in real time the -- both
22 opportunities and barriers to using second-life batteries.
23 Both of these projects are just really exciting. And I
24 think in combination with all of the projects it just shows
25 how California is really at the cutting edge. It's

1 thinking about how do we have storage? How do we integrate
2 vehicles smartly into the grid? How do we use those
3 batteries after they're done with the vehicles?

4 I think about how Elon Musk made an announcement
5 pretty recently about how Tesla is investing in a million-
6 mile battery. And he is claiming that it wouldn't just be
7 second-life, but actually third-life battery usage. so
8 we're on the cusp of all these amazing transitions in the
9 battery space.

10 And this conversation that the Chair talked about
11 in terms of like what kind of standardization should we
12 have in batteries? I think that's a really important
13 conversation we should have. And at the same time we want
14 to encourage innovation in this space of batteries. And
15 we're not sure where the end point will be in terms of the
16 best battery for all the different uses that we're
17 envisioning.

18 I'm just very excited about these grants and look
19 forward to actually seeing these projects in the ground.
20 And as Vice Chair Scott said the fact that we're doing
21 these all with an eye towards diversity, equity, inclusion,
22 low-income, disadvantaged communities is just really
23 amazing. So just kudos everybody for putting these
24 together.

25 CHAIR HOCHSCHILD: Great, thank you.

1 Madam Vice Chair, would you be willing to make
2 the motion for this item?

3 VICE CHAIR SCOTT: Yes, I will move approval of
4 Item 10.

5 CHAIR HOCHSCHILD: All right.

6 Commissioner Monahan will you be willing to
7 second?

8 COMMISSIONER MONAHAN: I second approval of Item
9 10.

10 CHAIR HOCHSCHILD: All right, all in favor?
11 Vice Chair Scott?

12 VICE CHAIR SCOTT: Aye.

13 CHAIR HOCHSCHILD: Commissioner Douglas?

14 COMMISSIONER DOUGLAS: Aye.

15 CHAIR HOCHSCHILD: Commissioner McAllister?

16 COMMISSIONER MCALLISTER: Aye.

17 CHAIR HOCHSCHILD: Commissioner Monahan?

18 COMMISSIONER MONAHAN: Aye.

19 CHAIR HOCHSCHILD: And I vote aye as well. That
20 item passes unanimously.

21 CHAIR HOCHSCHILD: Let's move on to Item 11,
22 approval of the June 10th Business Meeting Minutes. Any
23 public comment on Item 11?

24 MS. GALLARDO: This is Noemi, the Public Advisor.
25 No written comments. I'll defer to Patricia for anyone on

1 the line.

2 MS. CARLOS: There's nobody on the line for the
3 Minutes.

4 CHAIR HOCHSCHILD: Okay, any Commissioner comment
5 on Item 11?

6 (No audible response.)

7 CHAIR HOCHSCHILD: Hearing none, let's take a
8 motion. Madam Vice chair would you be willing to make the
9 motion?

10 VICE CHAIR SCOTT: Yes, I move approval of the
11 Minutes.

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

14 COMMISSIONER MCALLISTER: I second.

15 CHAIR HOCHSCHILD: All right. All in favor say
16 aye.

17 Vice Chair Scott?

18 VICE CHAIR SCOTT: Aye.

19 CHAIR HOCHSCHILD: Commissioner Douglas?

20 COMMISSIONER DOUGLAS: Aye.

21 CHAIR HOCHSCHILD: Commissioner McAllister?

22 COMMISSIONER MCALLISTER: Aye.

23 CHAIR HOCHSCHILD: Commissioner Monahan?

24 COMMISSIONER MONAHAN: Aye.

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

1 11 passes unanimously.

2 Item 12, Lead Commissioner or Presiding Member
3 Reports.

4 Let's begin with Commissioner Monahan.

5 COMMISSIONER MONAHAN: Well I think you all
6 heard, but we have a new Fuels and Transportation Deputy
7 Director. And his name is Hannon Rasool. He comes from
8 San Diego Gas & Electric. And this is particularly ironic
9 and interesting, because Kevin Barker was the previous
10 Deputy Director has gone to San Diego Gas & Electric. And
11 now we have Hannon Rasool, who comes from San Diego Gas &
12 Electric in their Government Affairs. So there's
13 something, there's some poetic justice in that exchange.

14 And Hannon was the Clean Transportation
15 Regulatory, Legislative and Policy Manager at SDG&E. And
16 he originally comes from Iowa. He's very dedicated to this
17 public service and to really helping California reach its
18 ambitious targets on clean energy and clean transportation.
19 So he's also just like a very nice person with a great
20 manner. And I'm confident he's just going to be a superb
21 leader for the Division and an effective spokesperson and
22 advocate for clean transportation at the Commission. So
23 he'll be here starting at the end of this month, or early
24 next month. So hopefully you all will be able to meet with
25 him very soon.

1 So I also wanted to introduce the students that
2 are working in my group this summer. I forgot to do it
3 last time so I'm doing it now. So we have two students in
4 the office, one is Sindhu Nathan. She's a PhD student at
5 Stanford studying Chemical Engineering. And she's really
6 interested in trying to figure out how to -- not just
7 trying to figure out -- in doing communication of complex
8 science in a compelling way for policy makers and for the
9 public.

10 She worked on some interesting proposals in the
11 past, projects in the past, like developing a federal
12 proposal to (indiscernible). Turns out she also worked on
13 battery designs for a lithium-ion and sodium batteries to
14 increase storage, so she really has a big great background.
15 Right now she's focusing on vehicle grid integration, but
16 she may be working on other issues related to our IEPR.

17 The second student is Russell Corbin. He's an
18 undergrad at Pomona College. And I met him, because he won
19 an award from Plug In America for his advocacy on electric
20 vehicles as a student, so he won the EV Student Award. And
21 you can google him and find a YouTube video of him on stage
22 with a bunch of adults talking about electric vehicles.
23 And he's just a great communicator. And he's helping put
24 together some effective PowerPoints, communicating our
25 investments in clean transportation and where we see the

1 state going on clean transportation. So hopefully he'll
2 have some PowerPoints to share with all of you at some
3 point in the not too distant future.

4 I think you should all know we're in the midst of
5 IEPR workshop season. So since our last Business Meeting
6 we had a light-duty zev market workshop, a hydrogen fuel
7 cell vehicle and hydrogen workshop. This month we're going
8 to have a workshop on the three revolutions, which is an
9 intersection of electrification, mobility as a service, and
10 automation. We're also having a workshop on near-zero
11 emission fuels and vehicles towards the end of the month.

12 So as we referred to, the Chair's Office convened
13 a cross-agency and beyond discussion On vehicle batteries
14 and what to do when they're no longer useful for the actual
15 vehicles. This included agencies like CalEPA who's leading
16 an effort to -- across-agency effort on this and the
17 Department of Toxic Substances Control. So I just feel
18 really thankful to the Chair for convening this discussion.
19 But also it's as a state we want to demonstrate how we have
20 a pathway to reuse where possible, recycle as much as we
21 can, and then dispose whatever's remaining safely. Like
22 this is critical, I think, to our success in electrifying
23 transportation is making sure that we have good policies at
24 the end of life.

25 The last thing I wanted to quickly mention is

1 just that together with the Chair's Office we were doing an
2 exploration of tire efficiency standards. (phonetic) And
3 Vice Chair Scott I'm sure you had a history in this space.
4 And we're taking a new fresh look at it as we're seeing
5 transportation emissions go up in the near term and a
6 potential for efficiency standards for tires to really -- I
7 mean 3 to 4 percent, it's somewhere in the range of what
8 some of these studies are indicating. There has been some
9 progress internationally. And so we're just doing some
10 facts-finding to see if that's something we should be
11 exploring more deeply In California.

12 So that is it.

13 CHAIR HOCHSCHILD: Thank you. Thank you,
14 Commissioner Monahan.

15 Let's go on to Vice Chair Scott.

16 VICE CHAIR SCOTT: Okay, so we did have one non-
17 transportation related IEPR workshop. There actually might
18 be a couple more of those. It started yesterday, it's on
19 microgrids and really understanding how the microgrids that
20 we have currently are working, what the challenges and
21 lessons learned are from those. And then what is it that
22 we need to do to really help standardize the key components
23 of microgrids to make them just one of the critical
24 components that the state -- one of the critical tools that
25 the state is using as it gets towards the 100 percent clean

1 energy standard.

2 We had a chance to talk a little bit about how
3 microgrids have really helped out during PSPS, the public's
4 safety power shut-off, even though that was not the
5 original purpose of the microgrids, so just a good
6 discussion on that.

7 Our IEPR workshops, we've been breaking them up
8 into two or three sessions over a couple of days so that
9 people don't get Zoom fatigue on an eight-hour phone call.
10 So we had the first part yesterday and we will finish that
11 up on Thursday starting at 10:00. And then a second
12 session on Thursday at 2:00. So that's really been great.

13 The other thing that I wanted to do was say thank
14 you to my previous Advisor Linda Barrera for the terrific
15 work that she did in my office while she was on my team.
16 She is just a delight to work with. She's diligent and
17 smart, organized, thoughtful, very detail oriented. And
18 she just really brought excellent leadership and care and
19 dedication into my office. And in addition to that she is
20 a lot of fun to work with. So I just thoroughly enjoyed
21 having her in my office as my advisor. I am so excited for
22 her for her new opportunity in our Chief Counsel's Office,
23 so congratulations to her on her new position.

24 And I'm excited to announce that Mona Badie will
25 be joining my team as an advisor. She starts up on July

1 13th. She comes, of course, very highly recommended and is
2 highly regarded throughout the Commission, so I'm delighted
3 to get to work with her in this new capacity. She served
4 as an attorney at the Commission for the last seven or
5 eight years or so. And she came to us as a graduate of UC
6 Davis Law School and from UC Berkeley for her undergrad.
7 So I'm really looking forward to working with her, having
8 her on my team. Again, she'll start next Monday, starting
9 next Monday on July 13th. So looking forward to that.

10 And I guess while I'm on the roll there I also
11 want to say thank you to my intern Patrick McCann-Kingston
12 (phonetic) and my Admin Miina Holloway. And also of course
13 my fantastic Advisor Rhetta DeMesa. It's a great team.
14 And as you all know, they make our lives so much easier.
15 It gives us a lot of bandwidth to handle lots of different
16 topics in a smart and strategic way. And so I wanted to
17 say thank you to my whole team, but most especially to
18 Linda for her service as an advisor, and really a warm
19 welcome to Mona next week.

20 So that is my report for you all today.

21 CHAIR HOCHSCHILD: Thank you, Vice Chair Scott.

22 Let me add my congratulations to Mona, excited to
23 welcome you to the role virtually. And also thanks to
24 Linda. I'm already hearing you're making a really positive
25 impact at the Chief Counsel's office. So that's great

1 (indiscernible)

2 Let's go to Commissioner Douglas.

3 COMMISSIONER DOUGLAS: All right, thank you very
4 much. We've been particularly active in the offshore wind
5 area with public outreach around the Central Coast, had of
6 a series of well two meetings that were open to the public:
7 one workshop and one of a local Big Sur group, that elected
8 officials at the local and state level and federal level
9 sometimes participate in. And so that was the Big Sur
10 MAAC, is what that's called. And then a tribal meeting as
11 well.

12 I've had the opportunity to participate in most
13 of the IEPR workshops And I really enjoyed it. I actually
14 find that in some ways the remote format makes it easier,
15 especially when it's broken up so it's only half a day. It
16 makes it easier to participate and focus for a couple of
17 hours and then turn around and get other work done. And so
18 I've just kind of enjoyed tracking it and hearing what
19 people have to say and having this chance to stay up to
20 date on topics that I don't always focus on, on a day-to-
21 day matter, so that's been really nice.

22 And I wanted to briefly mention here the tribal
23 outreach that was done that I think did help contribute to
24 the strong set of proposals has been ongoing, it's been
25 really going on for years. I just wanted to say a quick

109

1 shout-out to Tom Gates for helping us organize all of that.
2 And let all of you know that we're in the process of
3 thinking through how to build on those past efforts. And
4 convene some -- continue the work, but obviously do it
5 virtually, do it online now.

6 The outreach we did with tribes on Central Coast
7 was also online. And while there are challenges with that
8 we did find that it worked, and we all got on our platform
9 and we were able to talk and (indiscernible).

10 Lastly, I will thank Commissioner Scott for
11 Linda's services, now in the Chief Counsel's Office. And
12 you've got a great new advisor coming in with Mona, she's
13 going to be super strong. And in the meantime I am
14 thrilled to have Linda where she is.

15 That's all I've got for today. Thank you.

16 CHAIR HOCHSCHILD: Thank you, Commissioner
17 Douglas.

18 Let's move on to Commissioner McAllister.

19 COMMISSIONER MCALLISTER: Yeah. So just a few
20 things here. I also wanted to introduce everyone to my
21 intern, or the intern that's in my office, Ananya Raghavan.
22 she's an undergrad at UC Berkeley majoring in Energy and
23 Society. Also notably is a City Commissioner on the
24 Berkeley City Commission for Parks and Recreation in the
25 waterfront, so that's a pretty amazing thing to be doing as

1 an undergrad. So she's just really smart, a great manner
2 about her. For those of you that worked with her you know
3 that. And she's right now working to support the load
4 management standards work, and among other things in my
5 office, so welcome to her. Really great to have her with
6 us.

7 Just a few items, just to really give kudos for
8 staff in the various initiatives that are happening this
9 month. I just wanted to mention a couple in the Efficiency
10 Division. Well, the build workshops that are going around
11 the Fuel Substitution Tool, that's actually more in the
12 Energy Assessments Division. So that team has really been
13 doing bang-up work and interacting with a lot of
14 stakeholders in what is really a complex topic. And it's
15 foundational for the longer-term projects we have,
16 electrification and decarbonization. So that's really
17 essential work. And it can be challenging because we're
18 forward building a new road ahead of us, so it takes some
19 engineering.

20 So that's the build stuff, I think, in
21 collaboration the build program, AB 1477 -- or SB 1477,
22 sorry -- that we're collaborating with the PUC on. I think
23 it's going well. There's a good team effort across both
24 agencies and we're making good progress so kudos to all the
25 staff, Natalie, Mike and all the teams in the three

1 divisions, really, that are working on that.

2 So the Title 20 team for 2022 is just doing
3 amazing work. I mean you are all aware of how critical
4 that is to what we do, it's really bread-and-butter stuff.
5 And we're managing a number of issues again in that sort of
6 decarbonization, electrification realms with lots of
7 stakeholder-interested input. And so I just wanted to give
8 a shout-out to them. You heard Danny earlier today talking
9 about JA13, but there are a lot of issues that are sort of
10 similar levels in complexity and management that are
11 happening. Lots of analysis to make sure we're headed in
12 the right direction. And they really are looking towards
13 buildings that are both low carbon and reasonable cost for
14 consumers. So I think that's really a -- I wanted to call
15 that team out.

16 And then this Title 20 team, the Appliance
17 Efficiency Standards -- there's been a number of letters
18 going out -- is that part of the issue there, we have both
19 proceedings that we want to develop standards on and update
20 standards here in the state. But also chime in wherever we
21 can, be helpful in the federal discussion. Which is, as
22 you all know, can be challenging as the Department of
23 Energy looks to roll back things and opens up questions
24 that maybe we don't necessarily all see eye-to-eye on. So
25 it's really key to have collaborators and partnerships that

112

1 are paying attention to that, that we can either sign on to
2 letters that they write or write letters ourselves and make
3 comments that present our opinion there. So that team is
4 doing more of that than I think we all would like, but it's
5 very necessary and helpful.

6 And then just finally wanted to just highlight
7 some progress on, really, the federal front as well with
8 the Alliance to Save Energy and with NASEO. First on the
9 Alliance to Save Energy, the new initiative, really it's a
10 flagship initiative at the Alliance called active
11 efficiency that really seems to be getting some traction.
12 I think I've talked about it before. But it's broken up
13 into some active subgroups, focused on beneficial
14 electrification and focused on developing some case
15 studies. You know, what is active efficiency? And so
16 there's just a huge amount of buy-in across the board in
17 terms of manufacturers and the nonprofit sector and service
18 providers, thought leaders, Department of Energy as well as
19 the states. And so that's a really interesting process.

20 And along those lines the Alliance and NASEO
21 together and ACEEE and some others have really been
22 carrying water on developing input to the big omnibus
23 energy bill in the House, H.R. 2, which is looking actually
24 quite good now. It's got a lot of energy efficiency
25 elements in it, the mission critical energy investment,

1 really trying to figure out where stimulus money could go
2 and be most effective and finance and pay for the most
3 successful activities and projects. So it's in the House,
4 so maybe it's not going too far in the Senate, but it's a
5 really good foundation to build on going forward at some
6 point in the future. So that's great. I wanted to just
7 talk a little bit about that.

8 There's also some good transportation stuff in
9 there. And really fiber security is a nice initiative on
10 that, so there's progress in the DC discussion among energy
11 advocates and the planning community.

12 And then finally, NASEO had its Western Regional
13 Meeting a few days ago, or a week or so ago. And I want to
14 just thank Commissioner Scott, Vice Chair Scott, for making
15 a cameo, really more than a cameo, it was very substantive.
16 We had a conversation about western energy issues in among
17 all the western states. And figuring out sort of how the
18 state level, governors and sort of state level policy can
19 support and coordinate with the west-wide issues that Vice
20 Chair Scott represents the Commission on with WIEB, WIRAB,
21 and WECC, more WECC-based issues. So that was a really I
22 think interesting conversation and connected some of the
23 dots across the various representatives from the state on
24 these various bodies. So it was very helpful, so thanks
25 for that Vice Chair Scott.

1 And I think that's it for me. Thanks a lot.

2 CHAIR HOCHSCHILD: Thank you, Commissioner
3 McAllister. That's a lot of acronyms too: NASEO, WIEB and
4 WIRAB --

5 COMMISSIONER MCALLISTER: Oh yeah, sorry.

6 CHAIR HOCHSCHILD: -- and watermelon.
7 (Laughter.) I think we're all guilty of some lengthy
8 acronyms in our field.

9 COMMISSIONER MCALLISTER: Yeah, I apologize for
10 that. Maybe we should ask the court reporter to put in
11 front of these what those actually mean. Sorry about that,
12 I know it's bad form to use lots of acronyms.

13 CHAIR HOCHSCHILD: So I had a couple of things
14 there. I want to just begin by encouraging for those who
15 have not read it the article yesterday in "CalMatters" by
16 Lenny Mendonca talking about depression and anxiety. Lenny
17 served very capably as Director of GO-Biz, the Governor's
18 Economic Advisor, a remarkable man. And he stepped down
19 from that role about two months ago and then came forward
20 publicly yesterday to explain why, he'd been battling
21 depression. And I think it is incredibly brave and
22 incredibly powerful and beautiful that he opened up about
23 this and told his story.

24 And I wrote to him and I said, "This is going to
25 help a lot of people and maybe even save some lives." I've

1 lost two dear friends of mine over the last 25 years to
2 suicide, both related to depression. And it's sort of one
3 of greatest regrets of my life I didn't know the degree of
4 their pain until it was too late. And I think part of what
5 happens in these situations is there's a lot of shame
6 attached to talking about depression and anxiety. And I
7 think especially, especially now where the challenges are
8 so substantial that we're all dealing with in our society,
9 it's a remarkable and daunting set of challenges. It can
10 be even worse.

11 And so I just really applaud Lenny for the
12 article and the story that he shared yesterday. I think
13 it's beautifully written. And I think it's a great
14 reminder to all of us that there should be no shame at all
15 in talking about these kind of issues. And we need to
16 support each other. We should treat it almost like a
17 physical injury when you break a leg or so forth. And
18 anyway, so I just wanted to commend him for that.
19 Fortunately, he's doing much better and told me he's in
20 really good shape now, so it's just really great to hear.
21 So thanks and a tribute to him for sharing that story.

22 I also wanted to thank President Batjer and
23 Commissioner Shiroma at the PUC who joined Vice Chair Scott
24 and I and CAISO and a number of others for a terrific
25 microgrids workshop yesterday. You know, the IEPR process

1 is really two things. For one, it's a report that we do.
2 And sometimes I get the idea that we focus too much on the
3 report. The report is actually often in my view can be too
4 long. But the process itself, the conversation is itself
5 is really, really valuable, just the knowledge exchange.
6 And we had I don't know 250 people or so on that discussion
7 yesterday and it will be continued later this week. So I
8 just really wanted to give tribute to the staff and the
9 team for pulling together that conversation As we enter
10 another fire season, more PSPS events.

11 A few other quick updates, I did convene a
12 meeting with Commissioner Monahan and CalEPA and PUC and
13 CalRecycle around the vision of lithium recycling and
14 reuse. There will be a white paper that CalRecycle is
15 producing in the fall, and we'll have a follow-up there.
16 But really I think the goal from our perspective is first
17 reuse then recycle. And I think what's interesting is the
18 reuse period can actually be very long because in building
19 energy storage in circumstances where you're not space
20 constrained those batteries can have a very, very long life
21 actually. And so we really want to make sure we're doing
22 that right, so thanks to Commissioner Monahan for
23 partnering and engaging in all of that.

24 We have spent now about \$14 million On lithium
25 reuse and recycling efforts here at the Energy Commission,

1 so that was good to share that with some of the other
2 agencies.

3 Also want to thank all of the staff and
4 Commissioner Monahan again for the Town Hall Meeting we had
5 with CEC staff last week. We're trying to do these once
6 every month or so with two Commissioners each time. And
7 Commissioner Douglas and Vice Chair Scott, I think, did the
8 last one and Commissioner McAllister and I did the first.
9 One of the things that was announced there, we'll be
10 getting new laptop computers for Energy Commission staff
11 that include a camera. So I think that that's really
12 terrific, to be able to support working from home. And I
13 wanted to particularly thank Courtney and The IT team for
14 supporting start, it's a really, really big step forward.

15 And one other thing, I'm on this CAEATFA Board,
16 which does \$100 million a year of tax credit for clean
17 energy manufacturing. One of the things we're trying to
18 fix on that is to make the cap for the large projects a
19 little bit bigger. It had been \$20 million, it got cut to
20 \$10. I'm working to get it back to \$10 just to be able to
21 support larger manufacturers so they're not punished as a
22 scale. Because one of the things we want to do is send a
23 message we're going to hold your hand and grow with you as
24 you expand and grow in California. Our leading export in
25 the state today is electric vehicles. And that's in no

1 small measure due to all the policy work we've done
2 including these CAEATFA manufacturing grants.

3 And then finally we will be having another Energy
4 Commission guest speaker next week on July 14th. I wanted
5 to encourage everybody to join that. This is Judge Thelton
6 Henderson, a remarkable man who has been a long-time civil
7 rights leader in his field in the judiciary. He also
8 worked with and knew Martin Luther King, Jr. and was
9 leading the Justice Department's investigation of the
10 famous church bombing in the early 60s in Birmingham,
11 Alabama. And then he also put the entire prison system in
12 California into receivership when they were not meeting the
13 Constitutional standards for appropriate healthcare for
14 inmates.

15 So he's done some really path breaking stuff and
16 he's going to be having a conversation with us about race
17 and justice. I've invited Commissioner Rechtschaffen to
18 join us for this. He clerked for Judge Henderson when he
19 was beginning his legal career. So that's July 14th. And
20 that was it for me.

21 Let's move on to Item 13, Executive Director's
22 Report.

23 MR. BOHAN: Great. Good afternoon,
24 Commissioners. I've got about five items to cover, I'll be
25 quick though. First, thank you Patty for -- excuse me,

1 Commissioner Monahan for mentioning Hannon Rasool, who will
2 bring as you pointed out, he brings a lot for the
3 organization and has seen and lived the perspective of a
4 major stakeholder. So we're excited to have him. He met
5 with the team virtually a couple of weeks ago and starts at
6 the end of this month. And we'll introduce him at the next
7 Business Meeting.

8 Budget, we got 8 out of the 10 BCPs we were
9 seeking. That's very good news. The two remaining are \$51
10 million for ZEV infrastructure, number one, and then
11 funding for the Tribal Energy Program. Those are still in
12 the works. but they will be considered by the Legislature
13 we understand probably next month.

14 The 5 percent reduction we've heard about, that I
15 want to just make clear for folks is a requirement that's
16 being imposed on state agencies. So we need to take this
17 year's budget, the budget that we're in as of eight days
18 ago, the '21 -- excuse me, the '20-21 budget. And then the
19 next year's budget that will start this time next year we
20 need to come up with savings of 5 percent against this
21 budget that we're in. So whatever our total budget is we
22 need to save 5 percent in the next budget. So we're having
23 conversations with staff.

24 Next item I want to bring up is work plans. Part
25 of what we're talking about in our work phone conversations

1 is this 5% and how can we plan for it? You'll all be
2 seeing the plans, some if you already have, as we complete
3 them and bring them before you this month and next month.

4 Finally, a Telework Task Force. As the Chair
5 pointed out, yes laptops are being procured, a couple
6 hundred of them. This is a very no-regrets purchase. These
7 are future-proof laptops we believe, and we'll begin a
8 transition to a laptop-centric organization.

9 And then finally Chair, I just want to thank you
10 for bringing Judge Henderson. I don't know him personally,
11 but I've seen him speak and followed his illustrious
12 career. And I thought Dr. Duster (phonetic) was a great
13 benefit to staff when you brought him a couple of weeks
14 ago, so thank you. Thank you, Commissioners.

15 CHAIR HOCHSCHILD: Thank you. Let's move on to
16 Item 14, Public Advisor's Report.

17 MS. GALLARDO: Hello Chair, Vice Chair, and
18 Commissioners. This is Noemi Gallardo, the Public Advisor.
19 It's nice to see you all. I do not have a report today,
20 but I do want to give an overdue shout-out to my team in
21 the Public Advisor's Office: RoseMary Avalos, Dorothy
22 Murimi and Maria Norbeck. They're diligent and
23 enthusiastic about serving the public and I'm very grateful
24 for all they do. Thank you.

25 CHAIR HOCHSCHILD: Well, thank you all on behalf

1 of all of us.

2 All right, Item 15 Public Comment. Do we have
3 any public comments?

4 MS. CARLOS: I have one person signed up to
5 speak, Scott Galati.

6 CHAIR HOCHSCHILD: Okay.

7 MS. CARLOS: Scott if you'd like to begin your
8 public comment?

9 MR. GALATI: Thank you. Good afternoon,
10 Commissioners, this is Scott Galati. Sorry to come to you
11 in sort of an unorthodox way in public comment. These are
12 kind of strange times. I'm coming to you with a request
13 that you consider a Special Business Meeting for one of the
14 projects that are in front of you for a small power plant
15 exemption. I represent three projects that are currently
16 in front of you awaiting decision. I'm only speaking about
17 one of them that is very important, that is the Mission
18 College Backup Generating Facility. I'd ask that you
19 consider a special Business Meeting between now and August
20 12th to be able to approve that project.

21 That project had previous approval from the city
22 of Santa Clara and has begun construction up to the point
23 where the project has changed, so it has undergone
24 demolition, has undergone grading, and we are hoping to be
25 able to keep the workers working on that site. We think

122

1 that it's important to keep that going on this project for
2 not only the economic concerns, but this project is fully
3 leased out with one tenant. So for all intents and
4 purposes like you've done in the past with an AFC for a
5 siting project, this project is like it has a power
6 purchase agreement and a date, which it needs to deliver
7 energy.

8 But in this case it's a date that this tenant
9 needs to occupy. Data centers are very important, and
10 we've learned how important they are during this time. So
11 I'd just ask you to please consider a Special Business
12 Meeting.

13 That concludes my public comment. Thank you.

14 CHAIR HOCHSCHILD: Thank you for that. Let me
15 talk to Commissioner Douglas --

16 MS. CARLOS: (Indiscernible) who signed up, just
17 be today.

18 CHAIR HOCHSCHILD: Thank you. Let me talk to
19 Commissioner Douglas offline about that. But I'm certainly
20 open to that Scott, okay? Thank you.

21 MR. GALATI: Thank you very much.

22 CHAIR HOCHSCHILD: Yeah. Let's move on to Item
23 16, Chief Counsel's Report.

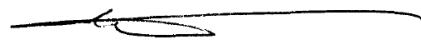
24 MS. HOUCK: Thank you, Chair. I just wanted to
25 also say thank you to Commissioner Scott for having Linda

REPORTER' S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were 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 17th day of July, 2020.



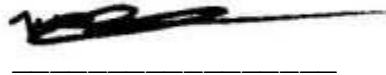
PETER PETTY
CER**D-493
Notary Public

TRANSCRIBER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 17th day of July, 2020.



Myra Severtson
Certified Transcriber
AAERT No. CET**D-852