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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

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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>	
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JUNE 10, 2020

10:00 a.m.

CHAIR HOCHSCHILD: Good morning, and welcome everybody to our June 10th Business Meeting. We're doing this remotely for the second time and what we'll do is we have a pretty substantial agenda. We'll plan to go until 12:45 and at that time then we'll assess whether to continue or to take a break. If we do take a break, we'll set a fixed time for returning.

So let's begin with the Pledge of Allegiance, if I could ask my colleagues now.

(Whereupon the Pledge of Allegiance is recited.)

CHAIR HOCHSCHILD: Thank you, and let's also if we could share a moment of silence in recognition of all the victims of (indiscernible) and violence.

(Whereupon a moment of silence is given.)

CHAIR HOCHSCHILD: Thank you. So let me just say before we get into the agenda this has obviously been a very turbulent and challenging few weeks that we've had. And we're dealing with many things simultaneously, an incredible injustice continuing in the United States, civil unrest in many places, and all this in the middle of a pandemic. And I think the important thing to remember all of us have a role to play in making things better. And getting our country on to a path that really begins with

1 how we treat each other.

2 And so I just want to again ask that everyone
3 really let's make every effort we possibly can to be kind
4 to one another, to be understanding and to reach out and
5 support our colleagues and neighbors, our families, in
6 every way that we can. So it's been an unbelievably
7 stressful chapter, but we'll get through it together and
8 we'll get stronger and closer, I hope, because of this.

9 So with that let's get into the agenda. Today's
10 Business Meeting is being held remotely without a physical
11 location or any participant consistent with Executive Order
12 N-25-20 and N-29-20 per recommendations from the California
13 Department of Public Health to encourage social distancing
14 in order to slow the spread of COVID-19.

15 The public may participate in a public meeting
16 consistent with the directions of these executive orders.
17 Instructions for remote participation can be found in the
18 notice for this meeting as set forth on the agenda posted
19 to the CEC website prior to this Business Meeting.

20 So again we're using a combination of Zoom and
21 Verizon for remote access today. In case Zoom shuts down
22 for both video and audio, we will continue the meeting on
23 our Verizon phone line. The number is 888-323-5065. We
24 will transfer this Business Meeting.

25 All right, pursuant to California Code of

1 Regulations Title 20, Section 1104, any person may make
2 oral comment on any agenda item, to ensure the orderly
3 conduct of business such comments will be limited to three
4 minutes per person as to each item listed on the agenda
5 that will be voted on today. Any person wishing to comment
6 on any information items or reports, non-voting items,
7 shall reserve their comment for the general public comment
8 portion of the meeting agenda and have three minutes total
9 to state all remaining comments.

10 Okay, so I do want to also note today is
11 something of a record. We're going to be pushing out \$93
12 million in grants and loans today to support our clean
13 energy agenda. It's a remarkable number and a lot of staff
14 work has gone into the preparation of all these agenda
15 items.

16 This is much needed in the moment that we're in.
17 We need economic recovery, so I do want to again thank the
18 staff. I think I speak for all my colleagues when I say I'm
19 just really, really pleased and impressed at the ability of
20 the Energy Commission and all the staff working remotely,
21 to move the agenda forward and as expeditiously as
22 possible.

23 All right, so let's begin with Item 1, the
24 Consent Calendar. We'll take up all the items as one with
25 the exception of Item a, which has been pulled.

1 First, are there any public comments on the
2 Consent Calendar, anyone?

3 MR. GOLDTHRITE: This is the Secretariat. We
4 have no public comment.

5 MS. GALLARDO: This is the Public Advisor, no
6 comments.

7 CHAIR HOCHSCHILD: Madam Vice Chair?

8 VICE CHAIR SCOTT: Yes. I move approval of the
9 consent calendar.

10 CHAIR HOCHSCHILD: Okay. Is there a second,
11 maybe Commissioner Douglas?

12 COMMISSIONER DOUGLAS: Second.

13 CHAIR HOCHSCHILD: Okay, great. All in favor say
14 aye. I vote aye.

15 Vice Chair Scott?

16 VICE CHAIR SCOTT: Aye.

17 CHAIR HOCHSCHILD: Commissioner Douglas?

18 COMMISSIONER DOUGLAS: Aye.

19 CHAIR HOCHSCHILD: Commissioner McAllister?

20 COMMISSIONER MCALLISTER: Aye.

21 CHAIR HOCHSCHILD: Commissioner Monahan?

22 We couldn't hear you, Commissioner Monahan. Are
23 you unmuted? Can you give us a thumbs up?

24 COMMISSIONER MONAHAN: Aye.

25 CHAIR HOCHSCHILD: There you go. Okay. Thank

1 you. That motion passes unanimously.

2 CHAIR HOCHSCHILD: Let's move on to Item 2,
3 Discussion of Energy Commission Progress on Joint Agency
4 Report, Charting a Path to a 100 Percent Clean Electricity
5 Future, SB 100.

6 MS. WEEKS: Hi, can you hear me?

7 CHAIR HOCHSCHILD: Yes.

8 MS. WEEKS: Great. Hello Chair, Vice Chair and
9 Commissioners, this is Tara Weeks, Senior Advisor to Chair
10 Hochschild and Project Manager for the SB 100 interagency
11 report.

12 It's been a couple of months since my last
13 update. During this time the interagency team has been
14 busy finalizing the modeling scope for the report, working
15 to ensure interagency agreement on a number of key
16 questions and reviewing comments and input received through
17 our workshop -- I apologize, there is a siren in the
18 background -- all while adjusting to (indiscernible) work
19 arrangements. So we appreciate stakeholders patience over
20 the last couple of months. And I want to provide a quick
21 update on the report timeline and upcoming opportunities
22 for public engagement.

23 By early July, we plan to release a document
24 summarizing our final modeling scope. This is in response
25 to stakeholder requests for additional details on the

1 report analysis. The document will include a final list of
2 scenarios that will be modeled for this report as well as
3 technical and substantive assumptions that were made.

4 We'll also include responses to key stakeholder
5 comments relating to the modeling scope. These include
6 comments that have been addressed in this round of
7 modeling, proposals for future modeling work, and
8 suggestions that were deemed to be outside the scope of SB
9 100. We expect to receive our modeling results by mid-July
10 and are targeting early August for a draft-modeling results
11 workshop.

12 Lastly, we aim to release a draft report and hold
13 a draft report workshop this fall. We look forward to
14 sharing our findings over the coming months.

15 A couple of additional notes on stakeholder
16 engagement, first California as joined the Clean Energy
17 Space Alliance 100 Percent Clean Energy Collaborative,
18 which is bringing together all 14 states and Washington DC
19 to assess (phonetic) 100 percent clean energy policies for
20 discussion on policy implementation.

21 We all know that California cannot achieve our
22 goals in a vacuum, so we look forward to engaging with our
23 colleagues in other states on this important topic. We are
24 currently working with the Collaborative to facilitate a
25 discussion on integrating equity into 100 percent policy

1 implementation, which will be led by our Public Advisor,
2 Noemi Gallardo.

3 We are also planning a follow-on discussion with
4 the Disadvantaged Communities Advisory Group and other
5 environmental justice stakeholders to review our draft
6 modeling results once they are released and discuss
7 implications for communities moving forward.

8 Lastly, we again want to thank the California
9 balancing authorities for their input to date. And we are
10 working to schedule another meeting with them to solicit
11 further feedback on our modeling and report development.

12 And that concludes my update. Thank you.

13 CHAIR HOCHSCHILD: Great. Thank you so much,
14 Terra, for your ongoing tremendous work on this critical
15 effort. Any public comments, Madam Public Advisor?

16 MS. GALLARDO: No written comments. I'll defer
17 to the Secretariat for anyone on the line.

18 MR. GOLDTHRITTE: We have no public comment on the
19 line.

20 CHAIR HOCHSCHILD: Okay.

21 Commissioner McAllister. Let's go to
22 Commissioner discussion.

23 COMMISSIONER MCALLISTER: Yeah, just there's
24 actually been a lot of progress and a lot of interaction
25 between the principals in SB 100. The technical challenges

1 I think we are understanding them really well, looking at
2 scenarios, looking at sort of what the various pathways can
3 look like to get to our goals. I think everybody believes
4 it's eminently doable. And obviously the sort of a heft of
5 the analysis and the planning is not to be underestimated,
6 so I think we're all bringing significant resources to
7 this. So between the PUC and the Air Resources Board and
8 us at the Energy Commission, and then with the Independent
9 System Operator sort of chiming in as needed on some of the
10 technical issues, I think we're making a lot of progress.

11 And again I think the coordination issue with
12 Terra leading that and EAD and their counterparts across
13 the other agencies, I'm really optimistic about how well
14 it's going.

15 CHAIR HOCHSCHILD: Great, any other comments from
16 the Commissioners? No, okay seeing none, this is a non-
17 voting item. So we'll move on. Thank you.

18 Let's go on to Item 3, Local Ordinance
19 Applications.

20 MS. DROZDOWICZ: Good morning Chair and
21 Commissioners, can you hear me?

22 CHAIR HOCHSCHILD: Yeah, good morning.

23 MS. DROZDOWICZ: Excellent. Thank you. My name
24 is Danuta Drozdowicz. I work in the Efficiency Division's
25 Buildings Standards Office and I'm here to present local

1 ordinances from jurisdictions that have applied to the CEC
2 for approval.

3 In order for a local standard to be enforceable
4 the jurisdiction must file, with the CEC, its determination
5 that its standards are cost-effective. The CEC must then
6 find that the local standards will require a reduction of
7 energy consumption levels, compared to the current
8 statewide Energy Code.

9 Two jurisdictions have submitted applications for
10 Commission consideration at this Business Meeting, the
11 cities of Richmond and Hayward.

12 The City of Richmond requires that newly
13 constructed residential buildings are all-electric with gas
14 allowed only for cooking and fireplaces. Prewiring for
15 electric appliances is required where gas appliances are
16 installed. Newly constructed high-rise residential and
17 non-residential buildings are required to be all-electric
18 with no exceptions, although commercial kitchens and life
19 science, public agency and emergency operations buildings
20 may apply for exemption on a case-by-case basis.

21 Nonresidential buildings must also install a minimum amount
22 of onsite solar, either photovoltaic or solar thermal.

23 The City of Hayward requires that all newly
24 constructed low-rise residential buildings, other than
25 accessory dwelling units, are all-electric. If newly

1 constructed high-rise residential and nonresidential
2 buildings are mixed-fuel, they are required to install
3 solar panels on the entire Solar Zone and meet higher
4 efficiency levels than the Standard Design Building.
5 Energy related but not subject to CEC approval, the City of
6 Hayward ordinance also includes provisions for electric
7 vehicle charging infrastructure.

8 Staff posted the complete applications, including
9 the local ordinances and adopted cost effectiveness
10 analysis, on the CEC's website under Docket 19-BSTD-06 for
11 the required public comment period. One comment was
12 received on the Hayward application from the Western
13 Propane Gas Association. The comment was on the merit of
14 renewable propane and is not related to the Energy
15 Commission's possible approval for Hayward to enforce their
16 adopted ordinance.

17 Staff reviewed the applications to determine if
18 these local ordinance standards will result in the
19 reduction of the energy consumption levels permitted by the
20 2019 Energy Code, per the requirements in the Public
21 Resources Code. Staff finds that the standards will reduce
22 the amount of energy consumed, and will not lead to
23 increases in energy consumption inconsistent with state
24 law. Staff further confirms that each of the jurisdictions
25 publicly adopted a finding of cost effectiveness for the

1 standard.

2 Because staff has found that the applications
3 meet all the requirements of the Public Resources Code,
4 staff recommends approving enforcement of the ordinances.
5 As a point of interest, to date this will bring the number
6 of jurisdictions that have been approved by the Energy
7 Commission under the 2019 Energy Code to 25.

8 This concludes my presentation.

9 Staff is on standby to answer any questions that
10 you may have.

11 CHAIR HOCHSCHILD: Thank you so much.

12 Let's see if we have any public comment on this
13 item.

14 MS. GALLARDO: This is the Public Advisor, Noemi
15 Gallardo. I do have comments, but let me check in with the
16 Secretariat first to see if there's anyone on the line.

17 MR. GOLDTHRITE: We have no comments on the line.

18 MS. GALLARDO: All right, I will proceed. I have
19 two comments that we received in writing. The first one is
20 from Barbara Halliday, that's spelled B-A-R-B-A-R-A,
21 Halliday is spelled H-A-L-L-I-D-A-Y. She's the Mayor of
22 the City of Hayward. This is a letter of support for
23 Agenda Item 3b.

24 "Dear Chair Hochschild and Commissioners. I urge
25 support and approval for the City of Hayward Application

21

1 for approval of Reach Codes.

2 "The City of Hayward was one of the first
3 California cities to adopt a climate action plan in 2009
4 and sustainability remains a top priority for Hayward.
5 Earlier this year, our City Council adopted a three-year
6 Strategic Roadmap and electrification reach codes was
7 included as one of the key initiatives. Hayward is
8 expected to add approximately 2,000 housing units in the
9 coming decade and ensuring all-electric construction of our
10 new residential buildings will help Hayward meet its long-
11 term greenhouse gas reduction goals.

12 "The Energy Commission funded a study by E3 that
13 evaluated different possible pathways for achieving climate
14 targets in California. Of all pathways evaluated, the high
15 electrification pathway focusing on electrification of
16 buildings and transportation was the least-cost pathway
17 identified for achieving our targets. This is particularly
18 true in communities served by community choice energy
19 programs. Hayward is served by East Bay Community Energy,
20 which is working towards providing 100 percent renewable
21 energy ahead of the State of California mandates.

22 "The City of Hayward brings before your
23 Commission a very carefully considered local ordinance that
24 promotes the electrification of buildings where it is shown
25 to be cost-effective. The City conducted significant

1 stakeholder outreach, worked hard to incorporate feedback
2 from the community, and brought the ordinance before our
3 City Council Sustainability Committee several times. The
4 item was approved by our Council unanimously with public
5 support.

6 "The City of Hayward has met all the requirements
7 of the Energy Commission in preparing this submission, and
8 we urge you to approve this ordinance. Thank you in
9 advance."

10 The second comment is from Beckie Menten. That's
11 spelled B-E-C-K-I-E, Menten is M-E-N-T-E-N. She's the
12 Program Manager of Building Electrification and Energy
13 Efficiency at East Bay Community Energy. This is a letter
14 of support for Agenda Item 3b.

15 "I am writing today to urge support and approval
16 for the City of Hayward application for approval of Reach
17 Code. East Bay Community Energy is a community choice
18 aggregator operation in California's Bay Area. EBCE has
19 been serving customers in Alameda County since 2018. In
20 2021, EBCE looks forward to enrolling new customers in the
21 communities of Pleasanton and Newark, as well as customers
22 in San Joaquin Valley with the inclusion of the City of
23 Tracy.

24 "EBCE is committed to providing its member
25 agencies, including the City of Hayward, with a cost

1 competitive and low carbon electricity product. The City
2 of Hayward has gone one step further, choosing to opt its
3 community into the brilliant 100 percent renewable product
4 offered by EBCE.

5 "Local jurisdictions have a unique ability to
6 adopt energy codes for building construction that are more
7 stringent than those of the California Energy Commission,
8 provided that the codes are shown to accede energy
9 efficiency targets of the existing building code and that
10 the jurisdiction has evaluated the cost effectiveness of
11 these codes.

12 "The City of Hayward brings before your
13 Commission a very carefully considered local ordinance that
14 promotes the electrification of buildings where it is shown
15 to be cost effective. The City has conducted significant
16 stakeholder outreach, worked hard to incorporate feedback
17 from the community and brought the ordinance before its
18 counsel twice. The item was passed.

19 "The resulting ordinance adopted by the Hayward
20 City Council promises a reduction in carbon emissions for
21 new buildings and includes requirements for additional
22 electrical vehicle charging infrastructure.

23 "The leadership of the City of Hayward will not
24 only help California meet its carbon goals to reducing
25 emissions resulting with buildings, it will also help

1 provide a model for the California Energy Commission to
2 consider in pursuing development of energy standards for
3 the next round of Title 24 updates.

4 "When local communities step out in from of the
5 state they develop a market for new technology, for a
6 trained workforce and for informed building officials.
7 This early market development is critical to helping
8 California advance on a low-carbon future.

9 "The City of Hayward has met all the statutory
10 requirements in preparing in preparing a submission. And
11 EBCE urges the Commission to approve this ordinance."

12 That concludes the comments.

13 CHAIR HOCHSCHILD: Great. Thank you, Noemi. So
14 I have a few comments on this item. Let's go first to
15 Commissioner McAllister and the other Commissioners.

16 MR. GOLDTHRITTE: Chair, we have --

17 (Overlapping colloquy.)

18 MS. GALLARDO: Go ahead, Secretariat.

19 MR. GOLDTHRITTE: We have Lauren Cullum from the
20 Sierra Club that would like to speak on Item 3.

21 MR. GOLDTHRITTE: Oh yeah, sorry. Commissioner
22 McAllister is that okay if we go to Lauren?

23 COMMISSIONER MCALLISTER: Yeah. That's great.

24 MR. GOLDTHRITTE: Hi, Lauren. Good morning. Go
25 ahead.

1 MS. COLUM: Hi, good morning. Can you hear me?

2 MR. GOLDTHRITE: Yes.

3 MS. CULLUM: Great. This is Lauren Cullum on
4 behalf of the Sierra Club of California, representing 13
5 local chapters in California and half a million members and
6 supporters throughout the state. And I'm speaking to
7 express our strong support for the Energy Commission's
8 approval of the local ordinances submitted by Hayward and
9 Richmond today.

10 These Reach codes are the result of a statewide
11 cost effectiveness analysis and an extensive stakeholder
12 engagement process. And this local democratic processes
13 leading the way to the state to implement decarbonization
14 solutions that are critical in the fight against climate
15 change.

16 Including everything happening with the COVID-19
17 pandemic, our work to improve air quality making it safer
18 for everyone to breathe by transitioning our homes and
19 buildings away from using dirty fossil fuels has become
20 more important than ever. It is that much more important
21 that we reduce air pollution as it has been found that air
22 pollution makes individuals more vulnerable to the virus.

23 These Reach codes are not just a measure to
24 reduce our greenhouse gas emissions and help meet our
25 climate goals, they will reduce indoor and outdoor air

1 pollution and their associated health and economic impacts.

2 CEC is providing the bold leadership that is
3 necessary to combat climate change, clean the air and
4 improve housing and energy affordability.

5 Again, Sierra Club of California supports the
6 Commission's approval of these Reach codes today and urges
7 the Commission to build upon this local leadership in its
8 2022 code cycle. Thank you so much.

9 CHAIR HOCHSCHILD: Thank you, Lauren.

10 All right. Let's go to Commissioner discussion,
11 Commissioner McAllister.

12 COMMISSIONER MCALLISTER: Yeah, so thanks, Chair.
13 And I wanted to first thank Danuta and the staff for really
14 keeping on top of these issues, the Building Standards
15 Office and Mike and the team. I really want to give them
16 kudos for their kind of detailed analysis, but also their
17 understanding of our role and their really conscientious
18 application of our role, which is limited as Danuta
19 explained. We have to show that it's as least as stringent
20 as the statewide minimum Building Code. And then the local
21 governments really have the -- and as the Mayor of Hayward
22 and Beckie said in their comments as well, the process at
23 the local level is really key to the decision making which
24 is a local decision.

25 So they put it through a process that's publicly

1 vetted and do an analysis in their own context that they
2 deem to be adequate and then bring that package to us.

3 I think local governments are looking seriously
4 at decarbonization, because they have a legal obligation
5 to. They have to do their climate planning. They have to
6 meet the SB 375. They have to really figure out what to do
7 at the local level and consider all pathways. And I think
8 they're finding those pathways. And they're also adjusting
9 them and putting -- sort of taking into account the local
10 context, the market realities, what technologies are really
11 out there? And what can they require in their own local
12 context? Where their housing market is, their population
13 in the multifamily, single family? And incorporating the
14 necessary flexibility to allow each project to move
15 forward, if that's an exemption process or that's another
16 kind of boundary around their local decision and then
17 that's what they're doing. And so that's really good to
18 see that considered process. I really appreciate both
19 cities, Richmond and Hayward for bringing this to us.

20 And then I guess I would just highlight to my
21 colleagues, the single and the low-rise residential are
22 relatively straightforward for some of this. Because the
23 technology pathways are relatively clear, the more complex
24 buildings, commercial, high-rise, residential, infill,
25 things like that are a little bit more complex. And so

1 we're seeing solutions developed for those in a more
2 contextual basis.

3 So staff is working really hard to create the
4 modeling tools and the compliance tools to enable as many
5 buildings as possible to take advantage of new technologies
6 and really be responsible buildings on the grid. So that's
7 a work in progress, but very robust discussions going on
8 with stakeholders across the state.

9 So I think things like pre-wiring and being
10 prepared for the future and incorporating broader issues,
11 like fire hardening, earth quake resilience that are not
12 part of our wheelhouse are also necessary, or showing the
13 creativity of local governments. That's really wonderful
14 to see and then we have this very diverse state and local
15 governments innovating and leading. So it's just nice to
16 see snapshots of that basically at every business meeting
17 at this point and then watching local governments develop
18 tools that we can then use at the state level.

19 So thanks a lot and I obviously support this
20 item.

21 CHAIR HOCHSCHILD: Okay. Are there any comments
22 from other Commissioners? Okay.

23 (No audible response.)

24 CHAIR HOCHSCHILD: Okay. The only thing I would
25 add to Commissioner McAllister's comments is that I have

1 one thing that sometimes gets missed in this discussion of
2 gas versus electric, is sort of a choice to choose between
3 two technologies, but there really is a fundamental
4 efficiency difference that is (indecipherable) actually
5 exists with transportation as well. Just combustion
6 technologies inherently do not operate with the same
7 efficiency. And so it's true with electric cars, but also
8 things like a water heater typically (indiscernible) heat
9 pump water heaters is about three times more efficient than
10 a gas water heater and these kind of things. And so you do
11 get an efficiency gain just by virtue of the technology
12 category.

13 But I also wanted to say these policies are, as
14 Commissioner McAllister noted that local policies developed
15 through a local process with local leadership and local
16 enforcement, are almost really these two tests of whether
17 it considered cost and whether it violates Title 24. And
18 so we -- if it meets those tests it gets approved.

19 But I do want to say that we really love to see
20 local leadership on decarbonization. It's incredibly
21 important and the cities that are doing this are
22 collectively making a future impact. And it's something
23 that's been spreading, particularly (indiscernible) almost
24 every meeting as more and more cities expand their efforts.
25 So I want to congratulate the cities for these policies and

1 I'm happy to support this item.

2 So with that, do we have a motion, Commissioner
3 McAllister?

4 COMMISSIONER MCALLISTER: As long as there are no
5 other comments, it looks like there are not so yeah, I'll
6 move this item.

7 CHAIR HOCHSCHILD: Okay. Is there a second,
8 Commissioner Monahan?

9 COMMISSIONER MONAHAN: I second it.

10 CHAIR HOCHSCHILD: Okay. Let's vote. All in
11 favor?

12 Commissioner McAllister?

13 COMMISSIONER MCALLISTER: Aye.

14 CHAIR HOCHSCHILD: Commissioner Monahan?

15 COMMISSIONER MONAHAN: Aye.

16 CHAIR HOCHSCHILD: Vice Chair Scott?

17 VICE CHAIR SCOTT: Aye.

18 CHAIR HOCHSCHILD: Commissioner Douglas?

19 COMMISSIONER DOUGLAS: Aye.

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

22 Let's move on to Item 4, Evergreen Economics,
23 Incorporated, Economic Services.

24 MR. BAEZ: Good morning, Chair and
25 Commissioners. Can you hear me?

1 CHAIR HOCHSCHILD: Yes, good morning.

2 MR. BAEZ: Very good. My name is Carlos Baez and
3 I work in the Appliances Office in the Efficiency Division.
4 I am here today to seek approval of a contract with
5 Evergreen Economics to provide the Efficiency Division with
6 economic analysis services through what's called the
7 California Multiple Awards Schedule or CMAS, which include
8 preapproved rates for these services.

9 The services needed are to provide the Appliances
10 Office with Standardized Regulatory Impact Assessments or
11 SRIAs, for appliance efficiency rulemakings under Title 20.
12 Appliance rulemakings that are expected to have at least a
13 \$50 million impact within the state over a 12-month period
14 after full implementation are considered major regulations,
15 and require that a SRIA be completed before the rulemaking
16 can move to the public comment period. Evergreen Economics
17 would provide between two and three SRIAs each fiscal year,
18 up to a maximum of nine over a three-year period.

19 This contract is necessary to provide access to
20 economic modeling tools and expertise required to complete
21 multiple SRIAs. The scope of work includes knowledge
22 transfer from Evergreen Economics to Appliances Office
23 staff, which will enable staff to prepare these
24 Standardized Regulatory Impact Assessments in the future.

25 Thank you for your time. We have staff on

1 standby and we are available to answer any questions. Thank
2 you.

3 CHAIR HOCHSCHILD: Okay. Thank you. Let's see
4 first if there is public comments.

5 MR. GOLDTHRITE: We have Keith Rivers from
6 Evergreen Economics on the line.

7 CHAIR HOCHSCHILD: Go ahead, Keith.

8 MR. RIVERS: No comment.

9 CHAIR HOCHSCHILD: No comment. Okay.
10 Anyone else, Noemi?

11 MS. GALLARDO: No comments from the Public
12 Advisor.

13 CHAIR HOCHSCHILD: Okay. Let's to Commissioner
14 discussion, Commissioner McAllister.

15 COMMISSIONER MCALLISTER: Yeah, so thank you
16 Carlos for presenting this. And this is a pretty
17 straightforward item, I would say. We by law have to do
18 the SRIA analysis when the economic impacts, one of our
19 regulations, typically focus mostly on the appliance side
20 has a relatively important economic impact on the state.
21 And so it would be an analysis if we needed it to happen,
22 it's best to bring in an outside resource. And this is a
23 good approach.

24 CHAIR HOCHSCHILD: We typically for these --

25 COMMISSIONER MCALLISTER: (Indiscernible.)

1 CHAIR HOCHSCHILD: Commissioner, we typically
2 contact out rather than do that in house?

3 COMMISSIONER MCALLISTER: You know, we've gone --
4 historically we've more contracted -- well it's a
5 relatively new requirement, the SRIA. And the limit is \$50
6 million, I believe. So and many of our regulations do not
7 have that scale of impact, so when there's a relatively
8 important one that comes through we need to do this
9 analysis. And we've explored and actually implemented
10 pathways to do it in house, but the resource is -- the need
11 is relatively episodic. And so it turns out it's likely a
12 better path to contract it out. And it's a fairly modest
13 amount of money to have that resource that's more flexible.

14 CHAIR HOCHSCHILD: Okay. That's all.
15 Colleagues, does anyone want to comment on this? If not,
16 I'll entertain a motion from Commissioner McAllister.

17 COMMISSIONER MCALLISTER: Yeah, I'll move Item 4.

18 CHAIR HOCHSCHILD: Okay. Is there a second?
19 Vice Chair Scott?

20 VICE CHAIR SCOTT: Second.

21 CHAIR HOCHSCHILD: Okay. All in favor say aye.

22 CHAIR HOCHSCHILD: Vice Chair Scott?

23 VICE CHAIR SCOTT: Aye.

24 CHAIR HOCHSCHILD: Commissioner Douglas?

25 COMMISSIONER DOUGLAS: Aye.

1 CHAIR HOCHSCHILD: Commissioner McAllister?

2 COMMISSIONER MCALLISTER: Aye.

3 CHAIR HOCHSCHILD: Commissioner Monahan?

4 COMMISSIONER MONAHAN: Aye.

5 CHAIR HOCHSCHILD: And I vote aye as well. That
6 item passes unanimously.

7 Let's move on to Item 5, Energy Efficiency
8 Technical Support Contract.

9 MR. SAMUELSON: Good morning Chair and
10 Commissioners. My name is Brian Samuelson with the
11 Efficiency Analysis Unit of the Energy Assessments
12 Division. Today I am here to discuss the Energy Efficiency
13 Technical Support Contract, Number 800-20-001 for your
14 approval.

15 This work authorization contract with Guidehouse,
16 Inc. is for three years and 1.5 million from the Cost of
17 Implementation Account, Greenhouse Gas Reduction Fund and
18 is needed to provide technical support, so that the Energy
19 Commission can meet the mandates under Senate Bill 350, the
20 Clean Energy and Pollution Reduction Act.

21 SB 350 requires the Energy Commission to
22 establish annual targets for statewide energy efficiency
23 savings and demand reduction that will achieve a cumulative
24 doubling of statewide energy efficiency savings in
25 electricity and natural gas final end uses by January 1,

35

1 2030.

2 Under this legislation, the Energy Commission is
3 to provide to the Legislature recommendations and an update
4 on progress toward achieving this goal every two years in
5 the Integrated Energy Policy Report. Technical support in
6 improving analytical methods for forecasting energy
7 efficiency savings, tracking savings from market based
8 activities, preparing cost and performance analysis of
9 existing and emerging electric technologies, identifying
10 implications on long-term decarbonization goals of
11 transportation and housing planning, assessing demand
12 response potential, and developing a common platform for
13 long-term statewide energy demand scenarios, are needed to
14 comply with this legislative mandate.

15 That concludes my presentation, and I am
16 available for any questions. Thank you.

17 CHAIR HOCHSCHILD: Great, thank you.

18 Any public comments on this item?

19 MR. GOLDTHRITTE: This is the Secretary. We have
20 no comments on the line.

21 MS. GALLARDO: This is the Public Advisor, no
22 written comments.

23 CHAIR HOCHSCHILD: Okay. Let's go to
24 Commissioner discussion, Commissioner McAllister.

25 COMMISSIONER MCALLISTER: Yeah, just I support

1 this item. Actually we saw the benefit of this approach in
2 Guidehouse as an input to one of our rulemakings, in fact
3 yesterday and has been for the last few months on the fuel
4 substitution analysis tool that's helping support AB 3232.
5 And so the Efficiency Division needs this resource to do
6 detailed assessments of all of the themes in various
7 legislative settings that we need to implement.

8 So it's a valuable resource to have and really I
9 think a critical input to the staff management of these
10 various parallel efforts on decarbonization and figuring
11 out how to manage our building stock etcetera. Integrating
12 transportation, we're looking at the carbon impacts of all
13 that.

14 So I support this item.

15 CHAIR HOCHSCHILD: And Guidehouse is formally
16 Navigant, correct?

17 COMMISSIONER MCALLISTER: Yes, it's the new name
18 of Navigant.

19 CHAIR HOCHSCHILD: Okay.

20 COMMISSIONER MCALLISTER: And they are -- I mean
21 there was a process to get here, but they have been doing
22 these kinds of scenario analyses for a long time, support
23 the PUC and have been supporting us in specific contexts.
24 So this is another of those realms that we need going
25 forward.

1 CHAIR HOCHSCHILD: Okay. Unless there's any
2 comments from anyone else on the dais, I'll entertain a
3 motion from Commissioner McAllister.

4 COMMISSIONER MCALLISTER: Yeah, I'll move Item 5.

5 CHAIR HOCHSCHILD: Okay. Madam Vice Chair, would
6 you be willing to second?

7 VICE CHAIR SCOTT: Second.

8 CHAIR HOCHSCHILD: Okay. All in favor say aye.

9 Vice Chair Scott?

10 VICE CHAIR SCOTT: Aye.

11 CHAIR HOCHSCHILD: Commissioner Douglas?

12 COMMISSIONER DOUGLAS: Aye.

13 CHAIR HOCHSCHILD: Commissioner McAllister?

14 COMMISSIONER MCALLISTER: Aye.

15 CHAIR HOCHSCHILD: Commissioner Monahan?

16 COMMISSIONER MONAHAN: Aye.

17 CHAIR HOCHSCHILD: And my vote is aye, so that
18 item passes unanimously.

19 Let's move on to Item 6, ECAA 1 Percent Loans to
20 the City of Trinidad, Ambrose Recreation and Park District,
21 Snelling Community Services District, and Colusa County.

22 MR. MCLEOD: This is Barry McLeod speaking. I'm
23 with the Efficiency Division's Local Assistance and
24 Financing Office. I am here today seeking approval for
25 four proposed resolutions for Energy Conservation

1 Assistance Act or ECCA loans.

2 First, the City of Trinidad, located in Humboldt
3 County is requesting a 1 percent loan for just under
4 \$50,000. The loan will finance the installation of the 14-
5 kilowatt DC roof-mounted solar PV array on the roof of the
6 town hall to reduce grid energy use. Upon completion, the
7 project is estimated to save \$4,400 in annual utility
8 costs.

9 Second, Ambrose Recreation and Parks District, in
10 Contra Costa County, is requesting a 1 percent loan for
11 just over \$517,000 for the installation of one 50.8
12 kilowatt DC solar PV system, energy efficient lighting,
13 HVAC unit replacement, programmable thermostats and pool
14 pump smart controls. The project is estimated to save the
15 districts an annual energy cost of approximately \$36,000.

16 The third request is for a 1 percent loan for
17 approximately \$123,000 for the Snelling Community Services
18 District, in Merced County. This project is to install a
19 34.5 kilowatt DC ground mounted solar PV system and replace
20 two sewage lift station pumps with highly efficient
21 submersible pumps at the sewage treatment plant. Upon
22 completion, the project is estimated to save approximately
23 \$13,000 in utility costs annually.

24 The fourth and final request is from Calusa
25 County for just over \$1.6 million 1 percent loan for four

1 solar PV systems totaling 281 kilowatt, plus 16 other
2 energy efficient measures at seven sites. The project is
3 estimated to save the county over \$160,000 per year in
4 utility costs.

5 CEC staff has determined that all four of the
6 requested projects funded by these loans are CEQA
7 compliant, technically feasible and meet the requirements
8 for ECCA 1 percent loans.

9 We request your approval for these four loans.
10 And staff are available for any questions. Thank you.

11 CHAIR HOCHSCHILD: Great. Thank you.

12 Let's see if we have any public comments.

13 MR. GOLDTHRITE: Yes, we have Wendy Tyler from
14 the County of Colusa and Andy Roth from Air Con Energy on
15 the line.

16 MR. GOLDTHRITE: Go ahead, Wendy.

17 MS. TYLER: Good morning, Commissioners. Just on
18 the line to answer any questions you may have and to thank
19 you for your consideration of our proposal.

20 CHAIR HOCHSCHILD: Great, thank you.

21 Andy, are you on a separate line or you're with
22 her?

23 MR. ROTH: Yes, I am. My name is Andy Roth. I
24 am Director of Services for Air Con Energy. We're an
25 energy services company working with Colusa County on this

1 project. We appreciate your consideration. If there's any
2 questions please let us know.

3 CHAIR HOCHSCHILD: Okay. Thank you.

4 Any other comments either on the phone or in
5 writing?

6 MR. GOLDTHRITE: We have no other comments on the
7 line.

8 MS. GALLARDO: Okay, this is the Public Advisor.
9 No written comments and it sounds like the Secretariat says
10 no more comments on the line.

11 CHAIR HOCHSCHILD: Okay, let's go to Commissioner
12 discussion. Commissioner McAllister.

13 COMMISSIONER MCALLISTER: Yeah, so this is really
14 another nice set of projects. And it's really great to see
15 smaller cities and park districts and rural parts of the
16 state take advantage of the ECCA program. And in
17 particular I always liked integrated projects that have a
18 bunch of different -- that sort of pool a bunch of
19 different investments, different end uses and different
20 improvements together. That really makes a strong project.

21 In particular, kudos to Colusa for getting a
22 bunch of interesting things together in one, including
23 generation PV and efficient lighting and HVAC and cool
24 roof. It shows a really comprehensive view of upgrades
25 that are needed. Also, I really like to see pumping and

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1 heavier loads. Those save massive quantities of energy
2 over their lifetime, even though they're relatively -- and
3 they require relatively important upfront investment. So
4 this is the perfect program for those kind of projects.

5 So really thanks to all the applicants and the
6 staff for doing the analysis and bringing these forward.
7 I'm supporting this item and I'll move Item 6, if there
8 aren't any additional comments.

9 CHAIR HOCHSCHILD: It's a great point,
10 Commissioner. I think as electric rates go up and there's
11 a number of forces driving that unfortunately for both gas
12 and electric going forward. But as electric rates go up,
13 the opportunity to bundle some of the more expensive
14 efficiency, harder to reach groups, as it were, with the
15 lower cost service jobs increases. And so it's a great
16 (indecipherable).

17 COMMISSIONER MCALLISTER: Yeah, and lighting also
18 has a massive, very quick payback. And if you can see fit
19 to say, "Okay, well we have a long-term payback requirement
20 for the ECCA program." So you can do a lot of capital
21 intensive projects if you bundle and you keep under the
22 dozen or 17-18 year payback you can do a lot with that.
23 You can do some capital intensive projects that over the
24 long term will really pay you back.

25 CHAIR HOCHSCHILD: Yeah.

1 Any other comments from the Commissioners? Well,
2 I would say I am the biggest fan of the ECCA program. I
3 mean it's amazing. We've been operating it for almost 40
4 years, we'll be coming up on 1,000 projects now
5 (indiscernible) done since it's inception and no defaults.
6 And so I just wish we had more funding to do but --

7 COMMISSIONER MCALLISTER: Actually, I'll throw in
8 a final comment that I've been asked to speak about the
9 national kind of stimulus conversation in a number of
10 different forums. And this program, along with the Prop 39
11 experience and a few others that we've had in the state
12 really are beacons for the nationwide discussion about what
13 you can do with funding. And it doesn't have to be grants,
14 like Prop 39. It can be low interest loans and have a
15 really long-term impact.

16 And we're approaching \$1 billion in the ECCA
17 program, over three plus decades, never a default as you
18 say. And we could -- there was \$130, \$140 million out
19 there circulating right now in that program and it's a
20 revolving fund. And it'll come back and we can lend it out
21 again. So that structure could take orders of magnitude
22 more funding from wherever it comes to really move the
23 needle even more across the state. And provide a nice
24 example for other states in the federal stimulus
25 conversation.

1 CHAIR HOCHSCHILD: How big is the backlog? In
2 other words if we had -- let's say there's another stimulus
3 package and a bunch of money comes in, how many shovel
4 ready projects at these terms, 1 percent, etcetera?

5 COMMISSIONER MCALLISTER: I'll defer to staff on
6 that, but I think when there is more money available
7 projects find their way to it. So it's not like everybody
8 is beating down the door and there's a huge long queue like
9 actively. I think there are a few projects in the queue,
10 but staff can confirm that situation.

11 But when the public jurisdictions know that
12 there's money available, they come and they apply for it.
13 So I don't think we'd have much of a problem getting out
14 these long-term loans.

15 CHAIR HOCHSCHILD: Is there anyone on staff who'd
16 like to comment on that? Yeah, Barry?

17 MR. GOLDTHRITE: Hey, Barry, do you want to
18 (indiscernible) go ahead.

19 CHAIR HOCHSCHILD: I can't hear you.

20 MR. MCLEOD: Oh, you can't hear me?

21 MR. GOLDTHRITE: Go ahead.

22 MR. MCLEOD: Okay. They shut me off I guess.
23 Currently, there's \$6.7 million available for these one
24 percent loans. And we expect another about 3 million to
25 come in with the June payments, so they pay every six

1 months. So that's almost \$10 million and we loan up to \$3
2 million per project, per loan. So there's some small ones
3 here, but we've done some \$3 million ones too.

4 CHAIR HOCHSCHILD: So you say there's funds
5 available now, still?

6 MR. MCLEOD: Yes.

7 CHAIR HOCHSCHILD: Okay. That's good to know.
8 Okay. Okay.

9 Great, okay. Unless there's comments from the
10 other Commissioners, I'll entertain a motion on Item 6 from
11 Commissioner McAllister.

12 COMMISSIONER MCALLISTER: Yeah, I'll move Item 6.

13 CHAIR HOCHSCHILD: Okay. Madam Vice Chair, would
14 you be willing to second?

15 VICE CHAIR SCOTT: Yes. I second Item 6.

16 CHAIR HOCHSCHILD: Okay. All in favor, say 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

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1 6 passes unanimously.

2 Let's move on to Item 7, Aemetic Biogas.

3 MS. MAGANA: Good morning Chair and
4 Commissioners. I'm Pilar Magana with the Fuels and
5 Transportation Division's Advanced Fuels Production Unit.
6 And I'm presenting for approval and agree with Aemetis
7 Biogas for approximately \$4.1 million.

8 This project is the final grant to be considered
9 for approval from the low-carbon fuel production program
10 solicitation funded through the greenhouse gas reduction
11 fund. The other three low-carbon production projects were
12 recommended for funding at the April business meeting.

13 Aemetis will construct and operate a biogas
14 cleanup plant added to the existing ethanol production
15 facility in Keyes, California.

16 Biogas will be transported from up to 30 dairies
17 in the surrounding regions and be upgraded to renewable
18 natural gas at this new biogas cleanup plant. The project
19 will result in approximately 6.8 million vehicle gallon
20 equivalents per year as renewable natural gas when the
21 facility is producing at full capacity.

22 At this production rate, it's expected that the
23 emitted biogas cleanup facility can reduce GHG emissions by
24 more than 2.6 metric tons of CO2 equivalent per year. This
25 reduction is equivalent to the emissions of approximately

1 900 operating heavy-duty trucks per year.

2 The renewable natural gas being produced will be
3 used for onsite fueling of trucks as well as be distributed
4 to a local disadvantaged community for use as a
5 transportation fuel.

6 In addition to providing low-carbon
7 transportation fuel to a nearby community Aemetis will also
8 be conducting outreach efforts to keep local communities
9 and schools informed on the project's benefits and
10 operations.

11 Thank you for your consideration. I'm happy to
12 answer any questions you may have at this time. And we
13 also have staff on standby as well as well as Andy Foster
14 and Robbie Macias on the phone from Aemetis to answer any
15 of your questions.

16 This concludes my presentation.

17 CHAIR HOCHSCHILD: Okay. Thank you.

18 Any public comments, Noemi?

19 MS. GALLARDO: No written comments. I'll defer
20 to the Secretariat for anyone on the line.

21 MR. GOLDTHRITTE: We only have Andy Foster on the
22 line.

23 CHAIR HOCHSCHILD: Okay. Andy, do you want to
24 make any comments?

25 MR. FOSTER: Sure, real quickly. I would just

1 like to say thank you to the Commissioners and to Pilar and
2 the other staff at the CEC for working with us on this
3 proposal during some very challenging times. Aemetis, as
4 was mentioned is a -- we have the state's largest
5 production biofuels refinery in Keyes. And we are not
6 working with local dairies to generate renewable natural
7 gas through covered anaerobic digesters. We've completed
8 our first two digesters in the local area and are about 90
9 percent complete with our privately funded and private
10 pipeline that will convey the gas from the dairies to the
11 Aemetis facility. And we are now about 90 percent
12 complete with PG&E on their engineering for the
13 interconnect, as well as about 60 percent of the design is
14 complete on our facility as well.

15 We look at this as a great opportunity, as Pilar
16 mentioned, to replace diesel gallons on the road and to
17 also continue to strengthen the dairy economy here in the
18 Central Valley. And we thank you very much for your
19 consideration.

20 CHAIR HOCHSCHILD: Thank you.

21 All right, let's move to Commissioner discussion.
22 Commissioner Monahan.

23 COMMISSIONER MONAHAN: Yes, thanks Pilar for that
24 really great explanation.

25 And I want to say one of the things that Pilar

1 didn't mention was that this is addressing one of our most
2 challenging problems with reducing greenhouse gas
3 emissions, which is methane. And we need solutions across
4 the state to address this problem. And this project is an
5 example where we are trying to a win-win, reduce methane
6 emissions and reduce pollution from the transportation
7 sector.

8 So Aemetis is on our agenda multiple times today,
9 so I think we all -- it's another place we have to do a
10 field trip to visit.

11 MR. FOSTER: We'd like to have you.

12 COMMISSIONER MONAHAN: So I appreciate your
13 leadership in terms of leaning in on embracing new
14 technologies, new strategies and really support this grant
15 and look forward to one day be able to -- actually our
16 shelter in place and visit your facility.

17 MR. FOSTER: That'd be great. Thank you very
18 much.

19 CHAIR HOCHSCHILD: Thank you.

20 Any other comments from Commissioners on this
21 item? Okay, hearing none, I'll entertain a motion from
22 Commissioner Monahan.

23 COMMISSIONER MONAHAN: I move to approve Item 7.

24 CHAIR HOCHSCHILD: Okay. Is there a second, Vice
25 Chair Scott?

1 VICE CHAIR SCOTT: I second Item 7.

2 CHAIR HOCHSCHILD: Okay, all in favor.

3 Vice Chair Scott?

4 VICE CHAIR SCOTT: Aye.

5 CHAIR HOCHSCHILD: Commissioner Douglas?

6 COMMISSIONER DOUGLAS: Aye.

7 CHAIR HOCHSCHILD: Commissioner McAllister?

8 COMMISSIONER MCALLISTER: Aye.

9 CHAIR HOCHSCHILD: Commissioner Monahan?

10 COMMISSIONER MONAHAN: Aye.

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

12 item passes unanimously.

13 CHAIR HOCHSCHILD: Let's move on to Item 8.

14 Advancing Next-Generation Heating, Cooling and Water

15 Heating Systems -

16 MS. PERRIN: Good morning, Chair, Vice Chair and

17 Commissioners. My name is Karen Perrin, can you hear me

18 okay?

19 CHAIR HOCHSCHILD: Yes. Good morning, Karen.

20 MS. PERRIN: Great. I am with the Energy

21 Efficiency Research Office.

22 According to the CEC's 2009 California

23 Residential Appliance Saturation Survey, 90 percent of the

24 state's buildings use natural gas or propane to provide

25 space conditioning or water heating. The majority of homes

1 in California rely on these carbon intensive fuel sources
2 to provide space and water heating.

3 I am presenting the two remaining projects from
4 the solicitation recommended for funding. Staff previously
5 presented agreements under this solicitation. The other
6 five agreements were approved at last month's Business
7 Meeting.

8 Projects from this solicitation focus on the
9 testing and development of low carbon warming potential
10 heat pump systems for space and water heating.

11 A key strategy to help meet the state's Green
12 House Gas emission reduction goals is the electrification
13 of water and space heaters that use low global warming
14 potential refrigerants.

15 The two agreements for your consideration today
16 are with the Association of Energy Affordability, a
17 nonprofit organization working to increase energy
18 efficiency in residential and multifamily housing to foster
19 and maintain affordable communities.

20 The first project will demonstrate the
21 performance of a variable capacity central heat pump water
22 heating system that offers grid flexibility and uses Carbon
23 Dioxide or CO2 as the refrigerant. This technology is well-
24 suited for larger multifamily buildings such as those in
25 this project. The project will collect real-time

1 performance data and operational efficiencies across
2 different design configurations and will use this
3 information to develop best practice design guidelines and
4 provide feedback to the Codes and Standards process.

5 The second project will develop and test a
6 combined space conditioning and water heating heat pump
7 system that uses low-global warming potential refrigerant.
8 The combined system or modules will be pre-fabricated
9 offsite and will be designed to streamline the retrofit
10 process and minimize impacts on building residents. The
11 goal of the project will be to show at a proof-of-concept
12 level that these combined systems are well suited for the
13 California market.

14 Testing of both these projects will be conducted
15 in multifamily residential buildings located in low-income
16 or benefitting disadvantage communities.

17 This concludes my presentation and staff
18 recommends approval of these agreements. We have staff on
19 standby and I'm happy to answer any questions.

20 CHAIR HOCHSCHILD: Great. Thank you.

21 Let's see if we have any public comment first.

22 MR. GOLDTHRITE: This is the Secretary. We have
23 no public comment on the line.

24 MS. GALLARDO: This is the Public Advisor, no
25 written comments.

1 CHAIR HOCHSCHILD: Okay. Let's move to
2 Commissioner discussion, Madam Vice Chair.

3 VICE CHAIR SCOTT: Okay, great. Thank you,
4 Karen, for your excellent presentation. I don't have too
5 much to add actually to what she said just to highlight the
6 fact that this is equipment that we expect will be much
7 more energy efficient, high energy efficiency. And also
8 the low and no global warming potential refrigerants that
9 are going to be housed within it.

10 And then it's going into multifamily buildings,
11 right? So this is kind of a win-win-win all around. Like
12 many of the EPIC projects I'm just waiting for them to be
13 done, so we can get the information back. So I heartily
14 recommend these to you. And if there's -- I will -- well,
15 first let's see if there's any comments.

16 CHAIR HOCHSCHILD: Great. Terrific.

17 Any other comments from the Commissioners? Yes,
18 Commissioner McAllister.

19 COMMISSIONER MCALLISTER: Yeah, no I just can't
20 not comment on this. This is just going like the Holy
21 Grail.

22 VICE CHAIR SCOTT: Great.

23 COMMISSIONER MCALLISTER: I mean as Vice Chair
24 Scott said, multifamily, it's got a low-income focus. Now
25 more than ever we need both of those and there is just

1 massive market movement needed in that sector toward
2 decarbonizing technology. And then here's a great group,
3 so much to like about both of these projects. So it really
4 is checking a whole bunch of critical boxes for our long-
5 term directional development here. So thanks for that.

6 Thanks to Vice Chair Scott for your leadership on
7 this.

8 CHAIR HOCHSCHILD: Yeah, agreed. Any other
9 comments? Okay, if not I'll entertain a motion from the
10 Vice Chair.

11 VICE CHAIR SCOTT: I move approval of Item 8.

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

14 COMMISSIONER MCALLISTER: I'll 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. That

1 item passes unanimously.

2 CHAIR HOCHSCHILD: Let's move on to Item 9,
3 Developing Non-Lithium Ion Energy Storage Technologies to
4 Support

5 MR. GRAVELY: Okay, good morning Chair and
6 Commissioners. Mike Gravely, Senior Engineer in the
7 Research and Development Division.

8 Ever since California's Chapter AB 2514 energy
9 storage bill in 2010, California has been the leader in the
10 nation in addressing the use of energy storage to support
11 future energy goals. As a result of that legislation over
12 the last decade California utilities have installed or
13 approved for installation over two gigawatts of energy
14 storage. The technical challenge is over 95 percent of
15 this energy storage has been one technology, lithium ion.

16 While lithium ion is a solid technology and
17 performs well, the technology is not ideally suited for
18 longer duration applications like riding through multi-day
19 wild fires, public safety power shut-off events.

20 Furthermore, the technology has challenges like thermal
21 runaway, limited life cycle and relies on materials that
22 are either rare earth materials or have environmental
23 justice issues like being mined by children in some foreign
24 countries.

25 There is also an industry concern that these

1 materials may not be available in the quantities needed as
2 the future projection international quotes for energy
3 storage.

4 As California looks to the future in meeting the
5 goals of SB 100, the state is expected to continue to add
6 large amounts of additional energy storage. For the long-
7 term perspective the state should rely on not only on one
8 technology, but have a diverse portfolio of possible energy
9 storage solutions. Next slide, please.

10 In 2019, the R&D Division released GFO 19305 to
11 provide an opportunity for new and emerging
12 (indecipherable) lithium ion phase technologies to
13 demonstrate their technology performance, safety and future
14 price point. The GFO received 37 proposals. This large
15 response demonstrates the fact that the industry also
16 agrees with the need for more diverse energy storage
17 technology solutions.

18 The GFO offered two groups. Group 1 was the non-
19 lithium ion energy storage technologies that had completed
20 the design, had a working model or were ready to further
21 development to an actual field site. Group 2 focused on
22 green hydrogen and integrating green hydrogen production
23 into a system that can also produce electricity.

24 Both groups had to deliver a system that received
25 electricity and delivered electricity, so they were

1 comparable to lithium ion energy storage systems.

2 We're recommending grants today of five
3 agreements from Group 1 and two agreements from Group 2.
4 Next slide, please.

5 In the first three grants on Group 1 we're
6 recommending for today's approval are all working long-
7 duration storage. Antora Energy, Inc., this grant will
8 develop and validate the performance of a thermal energy
9 storage system using carbon blocks to store energy with the
10 goal of being able to provide up to 100 hours of energy
11 storage. The system will be evaluated at an industrial
12 site that has existing solar to be used to charge the
13 system.

14 Form Energy, Inc. This grant will develop and
15 demonstrate the performance of an aqueous sulfur sodium air
16 system for long- duration storage that can provide up to
17 100 hours of energy storage. The system will be built and
18 evaluated on the UC Irvine Campus.

19 E-ZN Inc., this grant will develop and
20 demonstrate the performance of a zinc reactor in an
21 electro-chemical cell system for long-duration storage that
22 can provide 24 to 48 hours of energy storage. The system
23 will be built, tested, then evaluated in an agricultural
24 greenhouse facility. Next slide, please.

25 The following two grants will include one for

1 working more classical battery design that are based on the
2 use of zinc. This grant will design a simple and
3 integrated zinc ion cells to a residential energy storage
4 system. The technology is similar in size and shape to
5 lithium ion battery system and it tends to provide better
6 performance at a lower cost.

7 In addition to laboratory evaluation, the system
8 will be evaluated for field performance and complete UL
9 certification, so it will be acceptable for residential
10 applications.

11 ANZODE, Inc. The grant design is simile and
12 integrates a zinc and magnesium battery chemistry for
13 applications in residential, commercial, industrial energy
14 storage markets. The battery (indiscernible) with this
15 technology are similar in power and voltage to a standard
16 12 volt lead acid battery, but are smaller and lighter.
17 The system will complete prototyping, testing, safety
18 evaluations and field application analysis under this
19 grant. Next slide, please.

20 The final two grants are from Group 2 and will be
21 evaluating and demonstrating the generation of green
22 hydrogen through electrolysis and then converting this
23 hydrogen into electricity. SB 1369, chaptered in 2018,
24 defines green hydrogen, green (indecipherable) hydrogen as
25 energy storage and requested the Energy Commission consider

1 potential uses of green hydrogen as an energy storage
2 solution in the future.

3 With California expecting large amounts of
4 extensive renewable generation in the future, using this
5 excessive renewable generation to produce green hydrogen is
6 considered one of the new opportunities for energy storage.

7 The next two grants are designed to address
8 different methods of generating green hydrogen and
9 assessing the application where those hydrogens can be used
10 for energy storage.

11 Dash2Energy, LLC. This grant will integrate a
12 green (indecipherable) hydrogen system with power
13 generation from a 1-megawatt wind turbine within a
14 microgrid at Palmdale Water District. This grant will
15 evaluate the generation of green hydrogen from the wind
16 system at Palmdale. The wind will be used to produce
17 hydrogen and then the hydrogen will be used to provide
18 electrical resiliency with long duration storage, high
19 reliability, price stability, new business case models and
20 lower the costs of the Palmdale site.

21 This effort will integrate multiple technologies
22 together to get them to operate in a seamless fashion for
23 electricity in, electricity out.

24 T2M Global, LLC. This grant will evaluate a
25 green hydrogen system that can produce hydrogen through

1 electrolysis as well as recover diluted hydrogen from waste
2 streams such as biomass converting to flue gas and ammonia.

3 Most electrolyzer systems require purified water
4 as an input. However, under certain modes of operation
5 this electrolyzer may generate water as a byproduct. The
6 product will be tested, validated, system performance in a
7 laboratory setting and used as result to develop
8 (indecipherable) commercial scale system. Next slide,
9 please.

10 This slide shows the grants are being awarded to
11 companies throughout California. One of our program
12 objectives is to encourage the growth of these technologies
13 around the state, so they can result in the broader
14 expansion of the economic development, increase the number
15 of stable, good quality jobs throughout California. Next
16 slide.

17 In addition to approving these grants today, we
18 request the Commission to approve the staff determination
19 that all seven of these grants are exempt from CEQA. In
20 addition to myself, several staff from the Commission are
21 standing by to answer questions you have. We request
22 approval of these seven grants.

23 CHAIR HOCHSCHILD: Thank you, Mike.

24 Okay. Let's go to public comments. Do we have
25 any public comments on the line or in writing?

1 MR. GOLDTHRITE: This is the Secretary, we have
2 no comments on the line.

3 MS. GALLARDO: This is the Public Advisor, no
4 written comments.

5 CHAIR HOCHSCHILD: Okay. Let's go to
6 Commissioner discussion, Vice Chair Scott.

7 VICE CHAIR SCOTT: Okay. I don't have much to
8 add to Mike's thorough presentation. I might just note
9 that it's exciting to see some different types of
10 technologies, storage technologies come out that will be
11 available to help complement what we already have with the
12 lithium. The lithium ion storage technology that just
13 provides a wider range of options. Some of these to my
14 understanding will be laundered in that four-hour storage
15 range that we typically find with lithium ion.

16 I also appreciate having the electrolytic
17 hydrogen as part of the discussion as well. And Mike
18 mentioned this in his presentation, but what I like also
19 about this set of projects is they are set up to be
20 electricity in, electricity out. So hopefully at the end
21 of the day that makes them much easier to integrate with
22 the grid, kind of a maybe plug and play is a little strong,
23 but just easier to integrate with the grid.

24 So I recommend these projects to you all.

25 CHAIR HOCHSCHILD: Okay.

1 Any other comments from any of the other
2 Commissioners?

3 COMMISSIONER DOUGLAS: Just a brief moment, I'm
4 very supportive of this. I think the longer duration
5 storage fills a very important niche and need. And I've
6 tracked this as its moved forward and gotten a briefing or
7 two on the issues from Mike. So thank you. And I just
8 look forward to supporting it.

9 CHAIR HOCHSCHILD: Great. Commissioner Monahan?

10 COMMISSIONER MONAHAN: I just wanted to comment
11 as well for all of the projects, but just wanted to comment
12 on the electrolytic hydrogen ones which -- we've always had
13 this theoretical value of hydrogen being available for
14 storage and for vehicles instead of curtailing renewables
15 used to produce hydrogen and then to use it strategically.
16 So I'm very excited with these projects. I think they're
17 all really interesting and (indiscernible) to
18 transportation and how do we make sure that we are
19 (indecipherable) indicate renewables and curtailments. Use
20 that energy to reach our clean energy goals in California.

21 CHAIR HOCHSCHILD: The only other point I'd add,
22 first of all just thanks again to the Vice Chair and the
23 team for these proposals. Obviously with the increase in
24 solar and wind because of their very, very low cost this
25 may help address the (indecipherable).

1 The only other thing I would add is that with a
2 portfolio like this you don't expect every single
3 technology to succeed. And I think if you put out a bunch
4 of graphs like these everything works. You may not be
5 taking all the risk you meant to take and I think we all go
6 into this eyes wide open. This is precisely what we should
7 be doing to try to push the envelope. And hopefully it'll
8 be some (indecipherable) and fill a niche that needs to be
9 filled. And it's just great to see this diversity of
10 chemistries.

11 And I think with these grants we are now
12 approaching something like 50 energy storage demonstration
13 projects we've done in California, which is by far the most
14 of any state in the country and the most diverse in terms
15 of chemistry as well. So that's a great thing.

16 So with that I'd entertain -- oh sorry,
17 Commissioner McAllister. Yeah, go ahead.

18 COMMISSIONER MCALLISTER: Yeah, I really wanted
19 to just express an appreciation of the materials issues
20 that Mike brought up. And making sure that the access to
21 rare earths and other materials in these diverse
22 chemistries, that's a priority as well for the state and
23 the nation, and obviously for the economy and for just the
24 natural resource extraction issues around many of the
25 battery technologies.

1 And then also I wanted to point out kind of the
2 issue of long term and seasonal storage as really a focus
3 going forward for the Commission and everybody trying to
4 find -- large swaths of California are winter peaking,
5 actually. And so the seasonal issue is very important to
6 resolve. And getting cheaper and bigger there, obviously
7 as well some of the demand side work that we're doing, is
8 really going to be key to make the grid work all year.

9 CHAIR HOCHSCHILD: Yeah.

10 COMMISSIONER MCALLISTER: But this is a great
11 group of projects, so I support it for sure.

12 CHAIR HOCHSCHILD: Yeah, one thing I mean there's
13 still more types of storage. I had a meeting yesterday
14 with a company called Renewal that is using the clean door
15 gas valves. They're creating a weight on a chain with a
16 pulley basically to work the shafts to run on surplus power
17 and then generate power units. There's still more types of
18 energy storage to be pioneered.

19 With that I'd entertain a motion from the Vice
20 Chair for this item.

21 VICE CHAIR SCOTT: Yes. I move approval of Item
22 9.

23 CHAIR HOCHSCHILD: Okay. Commissioner McAllister
24 would you second?

25 COMMISSIONER MCALLISTER: I'll second.

1 CHAIR HOCHSCHILD: Okay. All in favor say aye.
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 Let's move on to Item 10, Advancing Envelope
13 Technologies for Single-Family Residential Buildings, Low-
14 Rise Multifamily Buildings, and Mobile Homes.
15 MR. THACH: Hi, good morning. Are you able to
16 hear me?
17 CHAIR HOCHSCHILD: Yeah, good morning.
18 MR. THACH: Hi. Good morning Chair, Vice Chair
19 and Commissioners. My name is Jackson Thach. I am a
20 Mechanical Engineer with the Energy Efficiency Research
21 Office in the Research and Development Division.
22 The purpose of this solicitation and recommended
23 awards is to develop and demonstrate innovative approaches
24 to advance window and building envelope systems in single
25 family residential homes, low-rise multifamily residential

1 buildings, and manufactured homes. The building envelope,
2 including windows and walls, are critical elements of the
3 building design. We waste energy when conditioned air
4 escapes to the outside. By developing envelope systems,
5 buildings may reduce HVAC and lighting use while taking one
6 step closer to California's goal of decarbonization of the
7 building sector.

8 Staff recommends approval of the following 4
9 projects. The first project is with Lawrence Berkeley
10 National Lab and will demonstrate the use of thin-glass
11 triple-pane windows, which offer significantly better
12 thermal performance over dual-pane windows. They will be
13 used as a drop in replacement for dual pane windows, which
14 may minimalize retrofitting costs and installation time.
15 Test sites will be located in disadvantaged or low-income
16 communities. This project aims to overcome the historical
17 barriers to mass-market adoption of high-performance
18 windows in the residential and low-rise multi-family
19 sectors.

20 This second project is with Electric
21 Power Research Institute. They will design an all-electric
22 manufactured homes that meets or exceeds 2019 Title 24
23 requirements, verify the performance of the envelope
24 technology, compare on-site PV installation with factory
25 installation for cost-effectiveness and identify pathways

1 to improve access to efficient housing to low-income
2 communities without increasing upfront costs. It will
3 include involvement from three major mobile home
4 manufacturers.

5 The third project with Rocky Mountain Institute
6 will design and test two different types of high
7 performance prefabricated exterior retrofit panels suitable
8 for low-rise multifamily building in California climate
9 zones. Developing an automated and well controlled process
10 may allow for onsite work to be done in under a week and in
11 some cases within a day while reducing the cost of
12 installation and tenant disruption. The ultimate goal of
13 this project is to develop a commercialization plan that
14 enables manufacturers to produce similar products at scale
15 and establishes a service for carrying out these envelope
16 retrofits to meet California market demand.

17 And finally, the fourth project with the Gas
18 Technology Institute will build three single family all-
19 electric mobile homes that will feature vacuum insulation
20 panels and advanced air sealing technologies. GTI will
21 leverage the findings from a DOE grant that was awarded to
22 them to use enhanced factory automation and an integrated
23 information technology system for modular home production
24 facilities to reduce costs of high-performance homes. One
25 of the test sites will be located in a disadvantaged

1 community.

2 Together with EPRI's previous project, we will
3 have participation from five different mobile home
4 manufacturers.

5 Thank you for your consideration. In addition to
6 staff, a few of these recipients are also on standby and
7 available for any questions that you may have. And with
8 that, this concludes my presentation.

9 CHAIR HOCHSCHILD: Thank you, Jackson.

10 Let's go to public comments. Is Christian Collen
11 on?

12 MR. GOLDTHRITE: This is the Secretary, so we
13 have Ram Narayanamurthy, the Program Manager from Advanced
14 Building Programs from EPRI and Martha Campbell from the
15 Rocky Mountain Institute on the line.

16 CHAIR HOCHSCHILD: Okay. Let's start with Ram.
17 Good morning, Ram. How are you?

18 MR. NARAYANMURTHY: Good morning, Commissioner,
19 doing well, thank you. And good morning to all the
20 Commissioners too. We want to just say thank you to the
21 Commission for your support as we've gone through all
22 electric mobile homes, single family, multifamily and now
23 manufactured. And entering into the mobile home sector is
24 one of the two sectors along with the (indiscernible)
25 systems buildings that are not part of the new code, so we

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1 are hoping to have a good demonstration of how to achieve
2 all electric in mobile homes.

3 Thank you again for all your support and we will
4 remain for questions.

5 CHAIR HOCHSCHILD: Great. Thank you.
6 Let's got to Martha.

7 MS. CAMPBELL: Good morning, can you her me?

8 CHAIR HOCHSCHILD: Good morning.

9 MS. CAMPBELL: Great. This is Martha Campbell
10 from the Rocky Mountain Institute. RMI just wishes to
11 thank the Commission for supporting this research. We are
12 convinced of its promise to assist ratepayers and cost
13 effectively and resiliently decarbonizing their buildings
14 while mitigating the impacts of electrification on the
15 grid.

16 So thank you again for this opportunity and we're
17 here if you have any questions.

18 CHAIR HOCHSCHILD: Great. Are there any other
19 additional comments either on the line or in writing?

20 MR. GOLDTHRITE: This is the Secretary, we have
21 no one on the line.

22 CHAIR HOCHSCHILD: Okay. No more on the line.
23 Noemi, do we have any more in writing?

24 MS. GALLARDO: No written comments.

25 CHAIR HOCHSCHILD: Okay. Let's go to

1 Commissioner discussion, Vice Chair Scott.

2 VICE CHAIR SCOTT: Thanks. I think this is
3 another set of terrific projects. I think the mobile home
4 point was really important. Mobile homes are typically not
5 always part of the Building Standards. And so to be able
6 to manufacture a mobile home that can meet the Title 24
7 Building Standards just the same way that any other type of
8 home can and the same level of affordability. I think it's
9 a really important component to this research. And I look
10 forward also to seeing what those results turn out to be.

11 I also want to compliment the research team for
12 working so closely with Commissioner McAllister and the
13 buildings team. I think looking at how the research that
14 we're doing in buildings and building envelopes and triple
15 pane windows and all of that really helps lay the
16 foundation for the next set of our Building Standards. And
17 so I really appreciate how our research and our Building
18 Standards continue to complement one another. That is all
19 I will say about this.

20 CHAIR HOCHSCHILD: Great. Commissioner
21 McAllister, did you want to say a few thoughts?

22 COMMISSIONER MCALLISTER: Yeah, for sure. So
23 thank you very much for that Vice Chair Scott and I totally
24 agree. I'm thinking of the Building Standards Office right
25 now. They're probably smiling at this, Mazi Shirakh in

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1 particular. He's been really working on this skinny triple
2 window for a couple of years now. There's great technology
3 from the thin glass now that we didn't have even a few
4 years ago with the proliferation of flat screen TVs, et
5 cetera, that's lower cost and really enabled that project
6 on the skinny triple in those new and existing retrofit.
7 And so that's great to see going forward.

8 And I want to just say thank you to Laurie and
9 her team for always circling back and figuring out what the
10 next -- what pushing the envelope literally and
11 figuratively actually here means for the research activity.
12 It's really great.

13 And then really just a couple of other quick
14 comments. On the manufactured homes design, I just want to
15 second your comments, Vice Chair Scott. And also just
16 point out that that is a very unique market that has
17 manufacturing, mostly not in California, virtually entirely
18 not in California I think. And in parts of the country
19 they just don't really value building codes and understand
20 the positive impact that an efficiency code can have. And
21 so it's just a huge hole in the new building stock, in the
22 manufactured homes. And so this is a really I think
23 overdue area for us as we get a handle on other sectors,
24 this is really one that needs focus. That's really great
25 to see that.

1 Also, I want to point out to the indoor air
2 quality issues as well. So I think that's another area
3 where manufactured homes tend to underperform. And we want
4 to make sure to keep an eye on that.

5 On RMI, I really appreciate the comment there and
6 the presence on the at the meeting here today by RMI. And
7 to the energy strong model that they're doing in Europe is
8 something that we really need to learn from and try to
9 replicate in a contextualized way here in the US and in
10 California. So that means taking existing buildings and
11 figuring out how to standardize and really take a
12 manufacturing approach to their upgrades.

13 And so I think this -- you know, envelope
14 upgrades to be able to do that at scale and commercialize
15 and get the cost down is really, really important.

16 And then across the board here, you only build a
17 building once. So the envelope -- in the Efficiency
18 Division the sort of theme, the trope is take care of the
19 building shell. It's the most long lived piece of a new
20 building. And it's worth investing in early on, because it
21 makes all the other problems smaller.

22 So it's really great to see the focus on bringing
23 really new technology, which you don't think of the
24 building envelope is being sort of a place where truly new
25 technology can be applied, but it absolutely can be and

1 it's great to see these projects doing that.

2 So I'm in total support.

3 CHAIR HOCHSCHILD: Great.

4 Unless there's comments from Commissioner Monahan
5 or Commissioner Douglas the only other thing I would add is
6 that obviously the Governor has a big focus on
7 affordability with homes. And he's very ambitious in terms
8 of the amount of housing we need to build. And I think
9 that includes mobile homes and so I'm just especially
10 encouraged to see that segment included. I don't recall us
11 funding that before, or if we have I may have missed. But
12 that's really nice to see it. I think one advantage of
13 mobile homes is they are prefab and so there's a lot of
14 savings you get in standardization.

15 I visited some prefab all electric home
16 manufacturing a year or two ago. And really came to
17 appreciate how much more affordable that can make it when
18 you have standard processes in place. It just not waste
19 (indecipherable) actual assembly of the units is
20 significant, so terrific.

21 Thank you, Vice Chair Scott, for leading this.

22 With that I'll entertain a motion from the Vice
23 Chair.

24 VICE CHAIR SCOTT: Yes. I move approval of Item
25 10.

1 CHAIR HOCHSCHILD: Commissioner McAllister will
2 you second?

3 COMMISSIONER MCALLISTER: I'll second.

4 CHAIR HOCHSCHILD: Okay. All in favor say aye.
5 Vice Chair Scott?

6 VICE CHAIR SCOTT: Aye.

7 CHAIR HOCHSCHILD: Commissioner Douglas?

8 COMMISSIONER DOUGLAS: Aye.

9 CHAIR HOCHSCHILD: Commissioner McAllister?

10 COMMISSIONER MCALLISTER: Aye.

11 CHAIR HOCHSCHILD: Commissioner Monahan?

12 COMMISSIONER MONAHAN: Aye.

13 CHAIR HOCHSCHILD: And I vote aye as well. That
14 item passes unanimously.

15 CHAIR HOCHSCHILD: Let's move on to Item 11,
16 Validating Capability of Second-Life Batteries to Cost-
17 Effectively Integrate Solar Power for Small-Medium
18 Commercial Building Applications. And Commissioner
19 McAllister to your point about the use (indiscernible)
20 suggests that.

21 MR. KURAL: Good morning Chair, Vice Chair, and
22 Commissioners. This is Tanner Kural, from the Right
23 Research and Development Division's Energy Generation
24 Research Office.

25 Electric Vehicle batteries are typically retired

1 at 70-80 percent of their original capacity, at which point
2 they are often still capable of performing use cases other
3 than powering EVs. Giving retired EV batteries a second
4 life as stationary energy storage would alleviate the
5 burden on the battery recycling pathway and lessen the need
6 for newly mined materials. The research projects before
7 you today are responses to the Second-Life Battery
8 solicitation, which focused on funding applied research and
9 development projects that aim to validate the capability of
10 second-life batteries to cost-effectively integrate solar
11 PV and provide resiliency for small-to-medium-sized
12 commercial buildings.

13 Projects funded by this solicitation will
14 characterize the degradation rate of second-life batteries
15 through laboratory testing and pilot test various
16 technology improvements and operational strategies that
17 optimize the useful life of the second-life battery.

18 Staff recommends approval of the following two
19 research agreements, which are the first of four projects
20 proposed for award under this solicitation. Both entities
21 are previous CalSEED recipients.

22 Smartville will develop and validate a
23 heterogeneous second-life battery system that enables hot-
24 swapping of individual battery modules to limit the
25 system's down time, optimized degradation control that

1 normalizes battery health over long-term usage, and
2 adaptability across an array of battery chemistries and
3 manufacturers. The project team will conduct a pilot
4 demonstration at the UCSD Rare Archives Building. The
5 project leverages funding from an ongoing ARPA-E project
6 that is developing a proof-of-concept for the Battery
7 Management System technology. Smartville is contributing
8 \$955,000 in match funds to support the project.

9 Repurpose Energy will conduct laboratory testing
10 to identify the degradation rate and effective useful life
11 of individual Nissan LEAF EV battery cells. The research
12 team will apply findings from laboratory testing to a full-
13 scale pilot demonstration at a co-op grocery store in a
14 low-income community affect by public safety power
15 shutoffs. The pilot test will compare two approaches for
16 repurposing EV batteries. The first, building a system
17 with whole packs of moderately degraded cells, and the
18 second building a system from disassembled modules to
19 increase the system's energy density.

20 Repurpose Energy is a spin-off startup company
21 from a recent successful EPIC-funded second-life battery
22 microgrid project conducted by UC Davis. RePurpose Energy
23 is contributing \$1.5 million in match funds to support this
24 project.

25 Thank you for your consideration on these

1 proposed awards. We have staff on standby and are
2 available for any questions you may have. Thank you.

3 CHAIR HOCHSCHILD: Thank you.

4 Let's go to public comment.

5 MR. GOLDTHRITE: This is the Secretary. We have
6 no one on the line.

7 MS. GALLARDO: This is the Public Advisor, no
8 written comments.

9 CHAIR HOCHSCHILD: Okay. Vice Chair Scott?

10 VICE CHAIR SCOTT: All right. There's a few cool
11 things about these few projects. Just to highlight briefly
12 for you, I think this is again another really interesting
13 intersection of the research that the Energy Commission is
14 doing and the greater goals of the state rate, so we can
15 really see how research into our energy systems is blending
16 or colliding with our transportation. And the
17 transformation we're trying to make in the transportation
18 system and then that helps us get to solar with storage,
19 which will help us as we're working towards the 100 clean
20 energy standard. So I love projects like these where you
21 can kind of see two or three different realms coming
22 together in a smart way.

23 Another thing that Tanner said in the
24 presentation is that I wanted to highlight for you, I
25 really think the research team has done a great job putting

1 together a smart strategy for how we do investments. So it
2 was mentioned that these projects were CalSEED projects.
3 So CalSEED is the program that EPIC uses to -- you it's a
4 grant of about \$100,000. And it helps people get their
5 idea and turn it into a proof of concept.

6 And then we have additional types of investments
7 that we make along this kind of energy innovation pipeline
8 to keep moving projects through. You can get it from an
9 idea into the proof of concept, into a pilot or a
10 demonstration and then hopefully out into the market. And
11 you can see that pathway with these two projects.

12 And so it's pretty exciting to see, but I just
13 wanted to add those two things to the presentation.

14 CHAIR HOCHSCHILD: Fantastic.

15 Other commissioner comments, Commissioner
16 Monahan?

17 COMMISSIONER MONAHAN: Yeah, I'm really excited
18 about these projects. I've got to say having been in the
19 transportation space for a long time, and there's always
20 this theoretical value of storage from second life
21 batteries from vehicles. And to see this playing out here
22 in California is just really exciting.

23 When we think about what's the cost benefit of an
24 electric vehicle versus a conventional vehicle, we usually
25 just think about the fuel cost or the electricity cost.

1 But having a second life battery or using vehicles as a
2 grid service in terms of frequency regulation and other
3 services, there are always ways to help bring down the cost
4 of electric transportation faster.

5 I mean the cost of batteries is coming down very
6 fast. And we're looking at maybe 2023 to 2025 cost parity
7 on the vehicles themselves. But if you can keep finding
8 the extra value, it's just a way to accelerate electric
9 transportation. And think this is particularly in the
10 heavy-duty space with these big batteries that are going to
11 be for busses and for trucks. And to have that second
12 value is really something pretty exciting.

13 The only other place I've seen it playing out is
14 in Delaware actually. So there's a thought leader in
15 Delaware, this guy (indecipherable). And for many years I
16 was like, "Oh my gosh, really. I don't know about his
17 ideas." And now they're all coming to life around electric
18 transportation. So yeah, just kudos to the team and as
19 Commissioner Scott was saying the interplay between what's
20 going on with the EPIC program, what's going on in
21 transportation and the electricity factor, and bringing
22 them all together it's just very exciting. So yeah, strong
23 support for these projects.

24 CHAIR HOCHSCHILD: Great. Any other comments?

25 Okay. I'll entertain a motion from the Vice

1 Chair.

2 VICE CHAIR SCOTT: I will move approval of Item
3 11.

4 CHAIR HOCHSCHILD: Commissioner Monahan do you
5 second?

6 COMMISSIONER MONAHAN: I second.

7 CHAIR HOCHSCHILD: Okay. All in favor say aye.
8 Vice Chair Scott?

9 VICE CHAIR SCOTT: Aye.

10 CHAIR HOCHSCHILD: Commissioner Douglas?

11 COMMISSIONER DOUGLAS: Aye.

12 CHAIR HOCHSCHILD: Commissioner McAllister?

13 COMMISSIONER MCALLISTER: Aye.

14 CHAIR HOCHSCHILD: Commissioner Monahan?

15 COMMISSIONER MONAHAN: Aye.

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

18 Let's move on to Item 12I, Geothermal Energy
19 Overcoming Technology Hurdles and Enabling Recovery of the
20 Mineral Lithium.

21 MR. GENTRY: Good morning Chair, Vice Chair, and
22 Commissioners. This is Chuck Gentry. I am a Mechanical
23 Engineer in the Energy Research & Development Division.

24 As the amount of renewable energy on the
25 California electric grid continues to climb, it becomes

1 increasingly important to add new baseload and load-
2 following renewables such as geothermal power. The purpose
3 of the GEOTHERMAL solicitation is to fund projects that
4 help increase the cost-effectiveness and value of
5 geothermal power by improving the productivity and
6 flexibility of geothermal facilities and by advancing
7 technologies for the recovery of lithium from geothermal
8 brine.

9 Lithium recovery from geothermal brine has
10 multiple benefits. It provides an additional revenue stream
11 to the geothermal plants and provides a domestic supply of
12 lithium to help satisfy the increasing demand for the
13 important metal. A total of five projects from this
14 solicitation will be recommended for funding, the final two
15 of which will be presented in this Business meeting.

16 The first proposed agreement is with Hell's
17 Kitchen Geothermal. This project will develop and
18 demonstrate a fundamentally new and innovative method for
19 managing silica in geothermal operations. Silica leads to
20 significant scale buildup in the wells and throughout the
21 plant and is currently expensive to manage. This new
22 technology called Geothermal Micropillar Enabled
23 Separators, takes a completely different approach than
24 conventional methods. It separates solid particles in
25 solution as they flow through a series of carefully

1 positioned staggered posts. This technology has the
2 potential to lower the cost of managing silica and also may
3 allow geothermal power plants to operate more flexibly.

4 The next proposed agreement is also with Hell's
5 Kitchen Geothermal. This project will integrate multiple
6 brine pretreatment processes to demonstrate a system for
7 completely preparing geothermal brine for lithium
8 extraction. Pre-treatment is a necessary step to clean up
9 the brine before lithium extraction can take place. This
10 project will help build confidence in the emerging lithium
11 extraction industry at the Salton Sea. The system will be
12 demonstrated on flowing geothermal brine at five gallons
13 per minute. This approval request is for Phase I of the
14 project, which includes planning and design.

15 This concludes my presentation. Staff are on the
16 line and are available to answer any questions.

17 CHAIR HOCHSCHILD: Thank you. Do we have any
18 public comment on the line?

19 MR. GOLDTHRITE: This is the Secretary. We have
20 no public comment on the line.

21 MS. GALLARDO: This is the Public Advisor, no
22 written comments either.

23 CHAIR HOCHSCHILD: Okay. Thank you, Madam Vice
24 Chair.

25 VICE CHAIR SCOTT: Okay. I think this is also a

1 nice set of projects here, being able to improve the
2 production and also the flexibility, I think of geothermal
3 plants is I think very valuable as we're heading towards
4 our, again our 100 percent clean energy standards. I look
5 forward to seeing how these projects turn out. And I also
6 think demonstrating the technology to recover the lithium
7 out of the geothermal brine, again, is incredibly
8 important. I don't need to tell you all lithium is a
9 component of the batteries that we're using both for
10 storage and in our electric vehicles. And so finding some
11 good ways to do that with a California resource I think is
12 also important.

13 So I recommend this set of projects to you as
14 well.

15 CHAIR HOCHSCHILD: Great, any other comments from
16 the other Commissioners?

17 Okay. Here again, we addressed this at some
18 length in the last Business Meeting last month and I'm in
19 full support of this. I think it is a really exciting
20 pioneering effort that will make and bear a lot of fruit
21 that provides all these benefits both to the in-state
22 mineral development and to the geothermal industry, which
23 we need for our clean energy future to support the electric
24 vehicle manufacturing. And to provide jobs in a part of
25 the state that desperately needs them. So terrific

1 (indiscernible) and thank the Vice Chair and staff for all
2 their work to put this together.

3 With that I'd entertain a motion from the Vice
4 Chair on Item 12.

5 VICE CHAIR SCOTT: Yes. I move approval of Item
6 12.

7 CHAIR HOCHSCHILD: Commissioner Douglas, will you
8 second?

9 COMMISSIONER DOUGLAS: Yes. I second this item.

10 CHAIR HOCHSCHILD: Okay. All in favor say aye.
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. Item
20 12 passes unanimously.

21 Let's move on to Item 13, Food Production
22 Investment Program. Is it the Food Production Investment
23 Program or Improvement Program, I always (indecipherable)
24 Food Production Investment Program.

25 MR. UY: Hello. Can you hear me okay?

1 CHAIR HOCHSCHILD: Yeah. You're live.

2 MR. UY: Good morning, greetings Chair, Vice
3 Chair and Commissioners. My name is Kevin Uy and I am with
4 the Energy Research and Development Division. Staff is
5 providing a presentation on the Food Production Investment
6 Program, followed by a recommendation to approve several
7 awards. This presentation summarizes the results to date
8 of the Food Production Investment Program over the past two
9 years. Next slide, please.

10 The Food Production Investment Program, or FPIP,
11 funds drop-in and emerging energy technologies at food
12 processing facilities in California.

13 FPIP is part of California Climate Investments, a
14 statewide initiative that puts billions of Cap-and-Trade
15 dollars to work reducing greenhouse gas emissions,
16 strengthening the economy, and improving public health and
17 the environment – particularly in disadvantaged
18 communities. Next slide, please.

19 California is the largest food producer in the
20 U.S. with over 5,700 facilities. Food production is a key
21 economic sector in California and contributes \$82 billion
22 annually to the economy, provides 198,000 direct jobs, and
23 562,000 indirect jobs.

24 Food production is also a large contributor of
25 greenhouse gas emissions with about 3.2 million metric tons

1 of CO2 equivalent emissions per year. Next slide, please.

2 Scoping of the FPIP program was done in
3 collaboration with key stakeholders. Before the program
4 started, a working group was created, which included public
5 agencies, utilities, researchers, trade organizations and
6 most importantly food producers. On this slide, you'll see
7 the list of organizations represented in the working group.

8 In addition to public workshops, several working
9 group meetings were held to get feedback on the program as
10 it was formed. The result was a program, which was easy to
11 apply to, conformed to the seasonal schedules of food
12 producers and provided funding for what they needed most,
13 implementing modern technologies. In essence, FPIP was
14 designed by food producers, for food producers. Next
15 slide, please.

16 This slide shows a map of FPIP project locations
17 including Tier I and Tier II projects. Tier I provides
18 funding for drop-in technologies such as boilers,
19 compressors and refrigeration systems while Tier II
20 provides funding for emerging technologies such as
21 microgrids, solar thermal and electrification technologies.
22 Ninety-two percent of FPIP projects are located in and
23 benefiting disadvantaged and/or low-income communities.
24 Next slide, please.

25 FPIP funding has gone to a variety of facilities

1 including animal feed and ethanol; beverage, breweries &
2 wineries; dairy processing; prepared food; meat and
3 rendering; and fruits, vegetables & nuts. The number of
4 awards to each type of facility are provided on the slide.
5 Next slide, please.

6 This slide shows FPIP by the numbers. FPIP has
7 allocated \$118 million across four funding opportunities to
8 48 projects resulting in 164,000 metric tons of CO2
9 equivalent annual emissions reductions. Next slide,
10 please.

11 So what do these numbers mean in other terms?
12 FPIP greenhouse gas savings are equivalent to over 35,000
13 passenger vehicles removed from the road; 2.7 million 10-
14 year-old trees planted; and energy use from nearly 28,000
15 homes. FPIP reductions are equivalent to 5 percent of the
16 emissions from the food products manufacturing sector.
17 Next slide, please.

18 FPIP has made a tremendous impact on food
19 production facilities. The testimonials shown were
20 provided at our March Business meeting. I won't read them
21 word-for-word, but the main takeaway is that many of these
22 projects would not have happened if not for FPIP funding.
23 To read the full quotes along with many others please refer
24 to the March Business Meeting transcript. Next slide,
25 please.

1 As mentioned previously, FPIP is part of
2 California Climate Investments. Updates on FPIP and other
3 CCI programs can be found in the CCI Annual Report to the
4 Legislature. The 2020 report was published in April. On
5 the left is the title page, in the middle is the FPIP
6 summary page and on the right is a profile write-up for one
7 of our projects at the Sun-Maid raisins factory. Next
8 slide, please.

9 Thank you for your time and attention. If you
10 could please transition back to the agenda, I'll now pass
11 the floor to my colleague, Kaycee Chang, to present the
12 recommended awards.

13 MS. CHANG: Thank you, Kevin. Good morning,
14 Chair, Vice Chair, and Commissioners. My name is Kaycee
15 Chang and I am with the Energy Research and Development
16 Division. Staff is seeking approval of 16 Food Production
17 Investment Program projects for a total of \$36.6 million.
18 All 16 projects will result in reduced greenhouse gas
19 emissions and energy consumption. Eleven of the projects
20 are expected to benefit priority populations through either
21 criteria pollutant emission reductions or job creation.

22 The first project is with Spreckels Sugar Company
23 to install a microgrid system at their sugar manufacturing
24 facility in Brawley. The system consists of 1 megawatt of
25 ground mounted solar photovoltaic panels, 880 kilowatt-

1 hours of battery energy storage, and a microgrid
2 controller.

3 The second project is with Aemetis Advanced Fuels
4 Keyes, a biofuels and animal food producer in Keyes. They
5 will install a microgrid system consisting of 1.56
6 megawatts of solar photovoltaic panels and 1.25 megawatts
7 of energy storage, integrated with a microgrid controller.

8 Microgrids provide resilience to food processors,
9 allowing them to continue operating during blackouts or
10 power shut-offs.

11 The third project is with California Custom
12 Processing, an organic almond processing facility in
13 Madera. They will install an industrial-scale high-
14 temperature solar thermal energy system to convert solar
15 energy into heat for facility processes and is an early
16 example of the potential to decarbonize industrial process
17 heat.

18 The fourth project is with Pacific Ethanol
19 Stockton, a biofuels and animal food producer in Stockton.
20 They will be implementing Mechanical Vapor Recompression
21 that takes waste steam and recompresses it for reuse. This
22 project will demonstrate the potential for significantly
23 reducing greenhouse gas emissions at food processing and
24 other industrial facilities with large evaporation and
25 distillation systems.

1 The fifth project is with Anheuser Busch who will
2 install over 200 state-of-the-art steam traps at their
3 breweries in Fairfield and Van Nuys. This project will
4 demonstrate the benefits of mass deployment of efficient
5 steam traps at other large industrial facilities, including
6 pharmaceutical and chemical facilities.

7 The sixth project is with J&J Snack Foods, a
8 frozen food producer in Vernon. They will upgrade their
9 inefficient refrigeration system and install heat recovery
10 components and an energy efficient industrial fryer. Heat
11 recovery will allow the facility to capture heat normally
12 rejected to the atmosphere for use of pre-heating water
13 resulting in energy savings.

14 The seventh project is with California Dairies to
15 install dryer exhaust heat-recovery systems and condensing
16 economizers at two of their dairy processing facilities in
17 Turlock and Visalia. Heat recovered from dryer exhaust
18 will be used to pre-heat dryer intake air. Heat recovered
19 from boiler flue gas will be used to preheat water for
20 boiler makeup, sanitation, and other uses.

21 The eighth project is with E & J Gallo Winery in
22 Fresno. The project will replace old refrigeration
23 compressors with efficient ones that have variable speed
24 controls. Installation of these energy efficient
25 replacements has high potential for replicability in other

1 facilities.

2 The ninth project is with Pacific Coast Producers
3 to install a new refrigeration system at their fruit and
4 vegetable canning facility in Oroville and install ceramic
5 insulation on existing rotary cookers at three fruit and
6 vegetable canning facilities in Woodland, Oroville, and
7 Lodi. Ceramic insulation was chosen over fiberglass since
8 it allows for easier wash down and helps prevent corrosion.

9 The tenth project is with PepsiCo, a beverage
10 processing facility in Ventura, to install a condensing
11 heat recovery system, which preheats boiler make up water
12 and process water. This will help displace natural gas
13 consumption to the boilers.

14 The eleventh project is with Sun-Maid Growers of
15 California, a raisin processing facility in Kingsburg.
16 They will install a microgrid consisting of three kilowatts
17 of rooftop solar photovoltaic panels, one megawatt of
18 energy storage, and microgrid controllers.

19 The twelfth project is with Baker Commodities in
20 Kerman to install an efficient boiler with selective
21 catalytic reduction and a regenerative thermal oxidizer.
22 The new thermal oxidizer will utilize waste heat from the
23 existing product drying process, reducing natural gas
24 consumption compared to the existing system, which burns
25 natural gas to provide heat for pollution control.

1 The thirteenth project is with Valley Fine Foods,
2 a frozen food producer in Yuba City. They will replace the
3 existing refrigeration systems that use high global warming
4 potential refrigerants up to 2,000 times the potency of
5 carbon dioxide with high efficiency trans-critical carbon
6 dioxide refrigeration systems.

7 The fourteenth project is with Sun-Maid Growers
8 of California in Kingsburg to install an optimized steam
9 and hot water system. Additionally, they will install a
10 heat exchanger on the steam tunnel exhaust to recover waste
11 heat and further reduce fuel consumption.

12 The fifteenth project is with E & J Gallo Winery
13 to replace old refrigeration equipment, including
14 refrigerants at three wineries in Livingston, San Miguel,
15 and Modesto. They will replace the existing conventional
16 refrigeration system with a high efficiency, ultra-low-
17 global warming potential alternative.

18 The last project is with Bimbo Bakeries USA. They
19 will install advanced ovens at two bakeries in Montebello
20 and Placentia. The ovens will have new controls that allow
21 the ovens to burn natural gas only when necessary, reducing
22 natural gas consumption.

23 These projects are projected to reduce greenhouse
24 gas emissions by over 68,000 metric tons of carbon dioxide
25 equivalent.

1 Staff recommends approval of these 16 projects
2 and I am available to answer any questions you may have.
3 In addition, there are representatives from these companies
4 that would like to make a few comments. Thank you.

5 CHAIR HOCHSCHILD: Thank you.

6 All right, let's go first to public comments.

7 MR. GOLDTHRITE: So we have Andy Foster from
8 Aemetis Advanced Fuels. We have Philip Gleckman from
9 California Custom Processing. Inbal Nachman from
10 California Dairies, Erik Watkins, from Pacific Coast
11 Producers, Mike Miller from Pepsi Co., Brian Cullen from
12 Valley Fine Foods; and Kevin Yavari from Bimbo Bakeries, on
13 the line.

14 CHAIR HOCHSCHILD: Okay. Do you want to just go
15 ahead in that order?

16 MR. FOSTER: Sure, this is Andy Foster from
17 Aemetis. Thank you again to the Commissioners and to the
18 Commission staff, Kevin and Kaycee, for all your work in
19 support of this project. I know you've got a full agenda,
20 so I'll keep it quick.

21 I just wanted to say that this is a very
22 important pillar in our strategy at the Keyes ethanol plant
23 to reduce our steam usage, which is generated with natural
24 gas and convert as much of our process over to electricity,
25 ultimately replacing 85 to 90 percent of the steam uses at

1 our facility. And this is a very key first part of that
2 along with mechanical vapory compression and some of the
3 other projects that we have underway.

4 So we're very appreciative of your support and
5 look forward to implementing this project.

6 CHAIR HOCHSCHILD: Great. Thank you.

7 Is it Philip Gleckman?

8 MR. GLECKMAN: Yes, can you hear me?

9 CHAIR HOCHSCHILD: Yes. Go ahead.

10 MR. GLECKMAN: Philip Gleckman from Sunvapor and
11 I'm speaking on behalf of California Custom Processing, or
12 CCP for short. CCP is one of the San Joaquin Valley's
13 leading almond producers and is a certified organic
14 processor. Today, all of the steam used for pasteurization
15 is generated in natural gas boilers. After this project is
16 built 100 percent of the steam will come from Sunvapor's
17 solar boiler during peak conditions.

18 CCP and their discerning global customers value
19 the unique sustainability impact of this project,
20 engineered by Sunvapor. And we acknowledge the critical
21 role of the Energy Commission in awarding this grant.
22 Thank you.

23 CHAIR HOCHSCHILD: Thank you.

24 Inbal Nachman.

25 MS. NACHMAN: Inbal Nachman, I'm with Skyven

1 Technologies, California Dairies' partner in cutting carbon
2 emissions in their manufacturing processes.

3 On behalf of California Dairies we'd like to
4 thank the California Energy Commission for accelerating the
5 adoption of drop-in technologies that can substantially
6 reduce GHG emission with projects capturing heat from hot
7 exhaust streams and using it to preheat (indecipherable)
8 streams can be applied to many types of industrial
9 processes. And further more typical condensing economizers
10 can improve boiler efficiency by 6 to 10 percent and reduce
11 fuel needed to heat process water.

12 These projects at California Dairies are
13 estimated to reduce about 9,300 metric tons of CO2
14 emissions per year. So that is very substantial for
15 California Dairies. So thank you again for giving
16 California Dairies the opportunity to prove that
17 sustainable business practices and integrative solutions
18 pay off and benefit both the industrial sector and local
19 communities. Thank you.

20 CHAIR HOCHSCHILD: Thank you.

21 Cody, sorry who is next? Is it Mike Miller or
22 Erik Watkins?

23 MR. GOLDTHRITE: Erik Watkins is next.

24 CHAIR HOCHSCHILD: Okay.

25 MR. WATKINS: Okay. Hi, good morning. This is

1 Erik Watkins from Pacific Coast Producers. We would like
2 to thank the California Energy Commission for approving
3 this grant through the FPIP program. We are very strong
4 supporters of this program and believe it is the best
5 method to support food manufacturing as they take the
6 difficult steps required to meet California Climate Action
7 Goals.

8 We'd also like to thank the Commission and staff,
9 especially Cyrus and Kevin. We probably wouldn't have a
10 program without them. And their support is much
11 appreciated. Thank you.

12 CHAIR HOCHSCHILD: Thank you.GENERAL COUNSEL:
13 Mike Miller. Noemi, is Mike on the line? Mike?

14 MR. GOLDTHRITTE: Followed by Brian Cullen.

15 CHAIR HOCHSCHILD: Okay. Mike, can you hear us?

16 MR. MILLER: I can hear you. Can you hear me?

17 CHAIR HOCHSCHILD: Yeah, now we can hear you.

18 Good morning.

19 MR. MILLER: Very good. Thank you. I appreciate
20 the opportunity. I just wanted to thank the Commission and
21 FPIP for the opportunity. We have to continue to improve
22 some of our older operations. And we as Pepsi Co. have
23 signed on to some pretty aggressive greenhouse gas
24 reductions as just one pillar of our sustainability
25 program. And certainly grants like this help us in our

1 scope one and scope two areas to continue to improve our
2 operations and reduce our impact on the California
3 environment.

4 So I just wanted to take a moment and thank the
5 work that everybody's done to work with us, Kevin and the
6 team, to approve this project. So thank you for your
7 kindness.

8 CHAIR HOCHSCHILD: Thank you.

9 Let's go to Brian Cullen. Brian, can you hear
10 us?

11 MR. CULLEN: Can you hear me?

12 CHAIR HOCHSCHILD: Yeah, we can hear you.

13 MR. CULLEN: Good morning, Commissioners. My
14 name is Brian Cullen. I'm the CFO of Valley Fine Foods. I
15 produce refrigerated and frozen pasta and also convenience
16 breakfast items. I'd like to extend a very large thank you
17 on behalf of my organization for your consideration for
18 your consideration of this grant.

19 As a smaller company with variability in cash
20 flow and profits, it's often times difficult for us to
21 prioritize projects that are focused on the environment and
22 reducing our greenhouse gas footprint. This grant will
23 allow us to do just that. Reducing our process facility's
24 greenhouse gas emissions and also replacing our current R22
25 system with environmentally friendly CO2 refrigeration. So

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1 this is very exciting for us and once again thank you very
2 much for your consideration.

3 CHAIR HOCHSCHILD: Thank you.

4 Do we have any other folks on the line wishing to
5 comment?

6 MR. GOLDTHRITE: We have Kevin Yavari from Bimbo
7 Bakeries and that's the last one.

8 CHAIR HOCHSCHILD: Okay, Kevin, good morning.

9 MR. YAVARI: Good morning. Thank you. Can you
10 hear me?

11 CHAIR HOCHSCHILD: Yes, good morning.

12 MR. YAVARI: Good morning. Yes, Kevin Yavari,
13 with Bimbo Bakeries, USA. We want to issue an overwhelming
14 thank you to the Commissioners today for your consideration
15 and the staff of the Energy R&D Division for this award and
16 are in full support of funding for such a critical program
17 for California's food industry.

18 Our company is best known through our brands that
19 are in 83 percent of households across the US: Sarah Lee,
20 Orowheat, Ball Park, Thomas's English Muffins, Entenmann's
21 to name a few. We operate seven large bakeries spanning
22 California from Sacramento to San Diego. And your
23 investment is allowing us to make significant impacts to
24 the energy efficiency of these facilities and make real
25 sustainable improvements come to fruition.

1 So your approval today will not only decrease our
2 GHG impact, but keep and add jobs to our facilities and
3 other businesses within California. So thank you.

4 CHAIR HOCHSCHILD: Terrific. Thank you so much.

5 Madam Public Advisor, do we have any other public
6 comments in writing?

7 MS. GALLARDO: Yes, this is the Public Advisor.
8 I have a comment from Daniel, spelled D-A-N-I-E-L, last
9 name is Slagel, S-L-A-G-E-L, on behalf of E. & J. Gallo
10 Winery, a California Beverage Processor. I'd like to thank
11 you for this investment, which is being leveraged with our
12 own funding to advance greenhouse gas emission reductions
13 at our Courthouse, Modesto, Livingston and Fresno
14 facilities.

15 We are grateful for the opportunity to partner
16 with the Energy Commission on this important project. We
17 also would like to take the opportunity to encourage future
18 funding and continuation of the Food Production Investment
19 Program. We know that you have limited resources and a
20 number of worthy programs that you support. But this
21 program does have such a significant impact on this
22 critical California industry and investment that individual
23 food and beverage processors can make a substantial impact
24 in ensuring the viability of the operation, continued
25 employment opportunities, reliability of processing options

1 and continued economic sustainability. Thank you. This
2 concludes the comment.

3 CHAIR HOCHSCHILD: Thank you.

4 Let's move on to Commissioner discussion, Vice
5 Chair Scott.

6 VICE CHAIR SCOTT: All right. Well, I'd like to
7 say thank you first to our staff for doing the overview of
8 the FPIP program. I just thought that was an important
9 summary to provide to you my fellow Commissioners, and also
10 to the interested public, especially since we've got about
11 16 grants that are up for consideration.

12 And I also really want to appreciate the project
13 proponents, all of you, for participating, so closely with
14 us and also for dialing in and spending a little time to
15 speak with us this morning.

16 I think that our team knocked this one out of the
17 park. They did a really fantastic job in the outreach,
18 reaching out to the food production folks, really listening
19 to what would make this be the most impactful and effective
20 program that it could be. And I think you see that in the
21 breadth of food producers that have participated, the
22 different types of projects that we're going to see and the
23 amount of CO2 or global warming pollutant reductions that
24 we anticipate seeing.

25 So I'm just very excited about this. I won't

1 repeat the things that you saw in the Food Production
2 Investment Program overview, but this is a great set of
3 projects.

4 CHAIR HOCHSCHILD: Great.

5 Are there any other comments from the other
6 Commissioners? Commissioner McAlister. Yeah, go ahead.

7 COMMISSIONER MCALLISTER: I guess I just wanted
8 to reiterate, actually, just thanks to the staff first and
9 all the applicants for a huge group of wonderful projects.
10 And some of you know I did industrial energy efficiency for
11 a really long time. I had sort of a previous career doing
12 that internationally and just across the border in Mexico.

13 And this is agricultural, but a lot of these
14 projects really they're industrial. And I think the
15 comment that was made about drop-in technologies that have
16 common applications and common processes is really
17 relevant. Industrial broadly is a hard -- each facility
18 has a history and a way, an operational market composition.
19 But there are categories of initiatives. You know, you've
20 got on energy efficiency like compressors and economizers
21 and heat recovery. Steam management is huge. Steam is an
22 old technology, but it is still everywhere. And it is
23 because steam is -- hopefully will do a lot of things.

24 Heat pumps, market developments for heat pumps
25 and natural gas efficiency. And then alongside the heat

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1 pumps the refrigeration work, and so all of these things
2 work together. And I think we need to -- I agree with the
3 comment that looking for more funding and figuring out how
4 to leverage this investment learn from that. More broad
5 coverage in the broader agricultural industrial sectors
6 would be very helpful and clearing this is very critical
7 for reaching our goals down the roads. So anyway, I think
8 all of these investments are a really helpful look forward.

9 As Commissioner Scott said last time we're
10 impatient to see the results and learn and grow and do
11 more, so I'm very supportive.

12 CHAIR HOCHSCHILD: Thank you, Commissioner.
13 Yeah, the only other thing I would add is it's just nice to
14 engage with this set of stakeholders. We have worked very
15 closely for a very long time with folks like home builders
16 and clean energy technology, clean transportation, but not
17 really as much with food producers. And thanks to this
18 program we've been able to do that very successfully.

19 So I just really want to complement the Vice
20 Chair and all the staff for that engagement. Vice Chair
21 Scott and I did a visit with a couple of these companies a
22 few days ago with Secretary Karen Ross from the Agriculture
23 Department and it was terrific to go (indiscernible) so an
24 incredible projects and so fully support.

25 Unless there are other comments from the

1 Commissioners I'll entertain a motion from the Vice Chair
2 on Item 13.

3 VICE CHAIR SCOTT: Yes. I move approval of Item
4 13.

5 CHAIR HOCHSCHILD: Commissioner McAllister, would
6 you second?

7 COMMISSIONER MCALLISTER: I'll second Item 13.

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

10 VICE CHAIR SCOTT: Aye.

11 CHAIR HOCHSCHILD: Commissioner Douglas?

12 COMMISSIONER DOUGLAS: Aye

13 CHAIR HOCHSCHILD: Commissioner Monahan?

14 COMMISSIONER MONAHAN: Aye.

15 CHAIR HOCHSCHILD: Commissioner McAllister?

16 COMMISSIONER MCALLISTER: Aye.

17 CHAIR HOCHSCHILD: And I vote aye as well. That
18 motion passes unanimously. Congratulations to all the
19 recipients.

20 Let's move on to Item 14, Proposed Natural Gas
21 Solicitation for Air Quality Impacts from Natural Gas and
22 Improving Natural Gas System Resilience.

23 MS. SCHMIDT-POOLMAN: Good morning Chair, Vice
24 Chair and Commissioners. I am Martine Schmidt-Poolman and
25 I am with the Environmental Research Unit at the Energy

1 Research and Development Division.

2 Under the Proposed Natural Gas Solicitation for
3 Air Quality Impacts from Renewable Natural Gas and
4 Improving Natural Gas System Resilience, staff proposes
5 four applied research agreements, totaling a little over \$4
6 million.

7 The first two proposed agreements that are
8 proposed are aimed at improving our understanding of
9 California's historical climate and improving availability
10 of quality-controlled and up-to-date historical climate
11 datasets to foster natural gas sector resilience.

12 To start, we propose awarding Eagle Rock
13 Analytics around \$1 million to develop a data assimilation
14 platform. This web-based platform will provide for central
15 access of multiple, quality-controlled data streams that
16 are significant to the natural gas sector. And this
17 includes weather observations, remote sensing and modeled
18 historical climate data.

19 Secondly, we propose awarding the University of
20 California, San Diego almost \$1.4 million to develop two
21 separate regional models in order to produce a spatially
22 and temporally detailed historical climate record. One
23 model will be targeted to realistically describe a range of
24 wet weather including atmospheric rivers. And the second
25 will be targeted towards dry weather, with an emphasis on

1 wildfire conditions.

2 The resulting fine scale data is then going to be
3 used to evaluate high-impact extreme events and to provide
4 insight for preparation for co-occurring extremes and
5 sequences of hazardous events.

6 The next two proposed agreements are both to
7 characterize climate and criteria air pollutant emissions
8 before and after a renewable natural gas project is
9 developed. The generation of biomethane, which is also
10 called renewable natural gas, is an important strategy for
11 both reducing methane emissions from the dairy sector and
12 providing a renewable, low-carbon substitute for fossil
13 natural gas.

14 These projects will help the state move forward
15 in the ability to quantify the emissions at a wide-ranging
16 set of separate facilities across the state through
17 complementary approaches at different sites.

18 The third agreement that we propose is to
19 Electric Power Research Institute, for about \$1 million.
20 This project will characterize and quantify emissions of
21 greenhouse gases and other air pollutant emissions from a
22 variety of waste management activities that potentially
23 produce biomethane, such as at a landfill, wastewater
24 treatment facility, and dairy.

25 And then the fourth proposed agreement will be to

1 the University of California, Riverside, also for about \$1
2 million. This project will conduct a comprehensive, multi-
3 season study of methane emissions from dairies in order to
4 quantify the greenhouse gas reduction benefits of
5 installing these dairy digesters.

6 The project will measure in depth on-farm
7 methane, nitrous oxide, and ammonia emissions from standard
8 manure handling practices. And will measure how these
9 change following digester installation in order to provide
10 an evaluation of the impact of this mitigation measure on
11 total greenhouse gas emissions from a California dairy
12 farm.

13 This concludes my presentation. Thank you so much
14 for your consideration. We have staff, including myself,
15 available for any questions you might have.

16 CHAIR HOCHSCHILD: Thank you so much.

17 Any public comments on this item.

18 MR. GOLDTHRITE: This is the Secretary. We have
19 no one on the line.

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

22 CHAIR HOCHSCHILD: Okay, Madam Vice Chair?

23 VICE CHAIR SCOTT: Yeah. I think this is an
24 important set of projects for us to consider. It's always
25 important to have the most up-to-date and granular data

1 that we can have in order for us to make these kind of well
2 thought through decisions and to be able to have science to
3 base our decision and policy making. And I think both of
4 these areas that Martine presented are areas where having
5 some additional data would be really useful to us.

6 And that is all I will layer on.

7 CHAIR HOCHSCHILD: Great. Unless there's
8 additional Commissioner comments, let's entertain a motion
9 from the Vice Chair.

10 VICE CHAIR SCOTT: I move approval of Item 14.

11 CHAIR HOCHSCHILD: Commissioner Douglas, will you
12 second? Yes, second by Commissioner Douglas?

13 COMMISSIONER DOUGLAS: Sorry, seconded.

14 CHAIR HOCHSCHILD: Okay. All in favor say aye.
15 Vice Chair Scott?

16 VICE CHAIR SCOTT: Aye.

17 CHAIR HOCHSCHILD: Commissioner Douglas?

18 COMMISSIONER DOUGLAS: Aye.

19 CHAIR HOCHSCHILD: Commissioner McAllister?

20 COMMISSIONER MCALLISTER: Aye.

21 CHAIR HOCHSCHILD: Commissioner Monahan?

22 COMMISSIONER MONAHAN: Aye.

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

25 CHAIR HOCHSCHILD: Let's move on to Item 15,

1 Storage Monitoring, Smart Shutoff and 3D Mapping
2 Technologies for Safer

3 MS. ORTIZ: Hi. Yes, can you hear me okay?

4 CHAIR HOCHSCHILD: Yes, good morning or good
5 afternoon, I mean.

6 MS. ORTIZ: Good morning Chair, Vice Chair and
7 Commissioners. My name is Rita Ortiz. I am an Energy
8 Commission Specialist with the Energy Systems Research
9 Office in the Energy Research and Development Division.

10 I am requesting your approval today for three
11 agreements, which are results of a solicitation intended to
12 improve the safety and integrity of natural gas
13 infrastructure in California. These projects will improve
14 pipeline-locating technologies and develop 3D visualization
15 software for mapping underground pipelines and improving
16 assets management. These projects will collect and
17 integrate pipeline data from multiple sources and different
18 technologies, visualize pipelines on maps, and make the
19 information available to field workers on GPS-enabled
20 devices. If successful, these agreements will improve
21 natural gas supply reliability, increase gas customer
22 safety, and reduce property loss due to excavation damages.

23 The first agreement is with Gas Technology
24 Institute. The recipient will conduct a field
25 demonstration of above-ground and in-pipe measurement

1 technologies for mapping subsurface pipelines. The project
2 will adapt and improve electromagnetic detection technology
3 to locate metallic pipes from the ground surface and use an
4 in-pipe technology to focus on congested areas and plastic
5 materials. These technologies will improve the accuracy of
6 subsurface pipelines in both the horizontal and vertical
7 dimensions.

8 The second agreement with Bakhtar Research and
9 Engineering will enhance an existing pipe detection
10 technology using forced resonance imaging. This is a new
11 and cost-effective approach to estimate depth and diameter,
12 and confirm pipe material type. This proposed technology
13 will improve the accuracy of detection by at least 70
14 percent from current mainstream locating equipment.

15 In the third agreement Gas Technology Institute
16 will develop and demonstrate a 3D visualization software
17 tool for mapping subsurface pipelines and improving
18 pipeline asset management. This platform will assist field
19 users and utility operators by visualizing pipeline data
20 from a variety of locating technologies in near real time.
21 The technology will also provide field operators with
22 digital documentation and guidance, so that the proper
23 procedures are applied to the selected locating technology.

24 Thank you for your consideration. This concludes
25 my presentation. And myself and staff are on the line to

1 answer any questions.

2 CHAIR HOCHSCHILD: Thank you. Let's go to public
3 comments.

4 MR. GOLDTHRITE: We have no comments on the line.

5 MS. GALLARDO: This is the Public Advisor, no
6 written comments.

7 CHAIR HOCHSCHILD: Okay. Madam Vice Chair?

8 VICE CHAIR SCOTT: Yeah, again I'll just note
9 that this is another important set of science-based
10 projects that I think really help us with the natural gas
11 infrastructure insuring that we are able to better locate
12 it. That helps us to keep it safe and helps us to make
13 sure that we are keeping the safety and the integrity of
14 that system and know what's there in a much more impactful
15 and meaningful way. So I support these projects as well.

16 CHAIR HOCHSCHILD: Great. Unless there's other
17 comments from the Commissioners, I'll entertain a motion
18 from the Vice Chair.

19 VICE CHAIR SCOTT: Yes. I move approval of Item
20 15.

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

23 COMMISSIONER DOUGLAS: Second.

24 CHAIR HOCHSCHILD: Okay. All in favor say aye.
25 Vice Chair Scott?

1 VICE CHAIR SCOTT: Aye.

2 CHAIR HOCHSCHILD: Commissioner Douglas?

3 COMMISSIONER DOUGLAS: Aye.

4 CHAIR HOCHSCHILD: Commissioner McAllister?

5 COMMISSIONER MCALLISTER: Aye.

6 CHAIR HOCHSCHILD: Commissioner Monahan?

7 COMMISSIONER MONAHAN: Aye.

8 CHAIR HOCHSCHILD: And I vote aye as well. That
9 item passes unanimously.

10 CHAIR HOCHSCHILD: Let's move on to Item 16,
11 Decarbonization in Healthcare and Large Buildings.

12 MR. MEISTER: Commissioners, I'm Bradley Meister
13 with the Energy Efficiency Research Office. Can you hear
14 me?

15 CHAIR HOCHSCHILD: Yeah, good morning.

16 MR. MEISTER: Good morning or good afternoon, I'm
17 here today to request approval of five energy projects.
18 Healthcare buildings, including hospitals, are the second
19 largest consumer of energy per unit of floor area of all
20 building types using about 2.5 times more energy than other
21 commercial buildings.

22 Healthcare related greenhouse gasses in the
23 United States are unfortunately increased 30 percent
24 between 2006 and 2016. Additionally, many large buildings
25 in California have an unnecessary high demand for building

1 heating energy, high hot water distribution system losses
2 and exceptionally poor boiler operational efficiency.
3 Based on the review team scores and suggested funding
4 level, staff requests approval of the following projects.

5 The first project is with the Gas Technology
6 Institute. This innovative project will design, model, and
7 demonstrate integrated HVAC water heating technologies for
8 a large medical center located in the disadvantaged
9 community in Baldwin Park and includes the following: heat
10 recovery chiller and boiler stack economizers;
11 implementation of a variable air volume system with
12 economizers; optimize control strategy to minimize
13 building heating, ventilation, air conditioning energy
14 consumption. And the benefits of this project will reduce
15 energy in these systems by over 30 percent.

16 The next project is with the Electric Power
17 Research Institute. And this project will demonstrate an
18 innovative energy efficient and effective ventilation
19 system at a health care facility. Large air handling units
20 equipped with a new energy recovery technology called high
21 efficiency dehumidification system will replace aging
22 conventional system at Jacobs Medical Center at the
23 University of California, San Diego. This high efficiency
24 dehumidification energy recovery system will reduce or
25 eliminate energy consumption associated with reheating

1 supply air and also increase chiller efficiency and reduce
2 water usage at the cooling tower.

3 The benefits of the proposed project will
4 completely eliminate the reheating load and can also reduce
5 the cooling load by about 24 percent.

6 The next project is with the University of
7 California Berkley, Center for the built environment. And
8 this project will reduce natural gas consumption in large
9 commercial buildings. The project will target three main
10 areas of energy waste and natural gas fired boiler-fed hot
11 water systems, a necessary demand for space heating, hot
12 water distribution losses and poor boiler operational
13 efficiency.

14 The packages will be demonstrated in a
15 disadvantaged community at Genentech campus in South San
16 Francisco and as a tool to identify future projects at a
17 California State University campus and also with the City
18 of Oakland. When implemented this project has the
19 potential to reduce HVAC energy use by over 30 percent.

20 The next project is the Southern California Gas.
21 And this project will deploy and demonstrate the technical
22 and economic viability of high efficiency natural gas fired
23 heat pumps to significantly reduce the consumption of
24 natural gas and greenhouse gas emissions at large
25 commercials hotels in Southern California.

1 The Weston Bonaventure is a 1.5 million square
2 foot hotel located in a low-income census tract in Los
3 Angeles. It is surrounded by disadvantaged community
4 priority populations and is the site for deployment and
5 demonstration of modular high-efficiency heat pump
6 technologies. The technology has the potential to double
7 the efficiency of the existing hot water system.

8 And the last project is with Mazzetti. This
9 project will result in the development of a comprehensive
10 and interactive guidebook for decarbonizing existing
11 healthcare facilities. The decarbonizing healthcare
12 guidebook will include emerging energy efficiency equipment
13 and systems, customized design improvements to reduce
14 natural gas use, increase efficiency and provide a clear
15 path to decarbonizing hospitals.

16 The recipient will collaborate with hospital
17 engineers and designers as well as state regulatory
18 agencies and healthcare nonprofits and organization to
19 design a comprehensive design guide.

20 The Office of Statewide Health Planning and
21 Development participated on the scoring committee, and is
22 looking forward to this future research and guidebook as
23 well.

24 The innovative retrofit guidebook will provide a
25 path to reduce energy use at existing hospitals by 10 to

1 over 30 percent. This concludes my presentation and I'm
2 happy to answer any questions. We also have staff on
3 standby. Thank you.

4 CHAIR HOCHSCHILD: Thank you.

5 Let's go to public comment.

6 MR. GOLDTHRITE: We have Ram Narayanamurthy from
7 EPRI on the line.

8 CHAIR HOCHSCHILD: Ram, good afternoon.

9 MR. NARAYANAMURTHY: Commissioners, thank you
10 again for the opportunity. We want to give thanks to the
11 Commission staff for your support, also to our partners at
12 USCD Health who have been very innovative and very
13 proactive in working on this award. And hopefully as we go
14 through this we can also demonstrate how we can do
15 decarbonization (indiscernible) demonstrate the indoor air
16 quality and health benefits of our dehumidification
17 technology.

18 So thank you again. Thank you to everyone.

19 CHAIR HOCHSCHILD: Thank you.

20 Any other comments in wiring, Madam Public
21 Advisor?

22 MS. GALLARDO: This is the Public Advisor, no
23 written comments.

24 CHAIR HOCHSCHILD: Okay. Let's go to
25 Commissioner discussion, Vice Chair Scott.

1 VICE CHAIR SCOTT: Yes. This is also, I think, a
2 nice cutting edge set of projects for us to consider. I
3 like that it is looking at critical infrastructure. I
4 think that's just a really important component of many of
5 the projects that we're looking at increasing the energy
6 efficiency of the equipment, reducing the amount of gas
7 that it uses. It helps reduce global warming pollution and
8 it also helps save money. And again it's helping to make
9 improvements in this critical industry in the state.

10 I also wanted to highlight the note that our
11 friend from EPRI made and that we've heard Commissioner
12 McAllister say many times, the indoor air quality is also a
13 really important consideration. And so I'm looking forward
14 to seeing what the results of that are with the set of
15 projects as well.

16 CHAIR HOCHSCHILD: Great. Thank you.

17 Unless there's other -- oh, Commissioner
18 McAllister, yeah.

19 COMMISSIONER MCALLISTER: Yeah, just quickly,
20 thanks Bradley. I really appreciate your effort on this
21 and Ram for being here.

22 Just to highlight the healthcare industry
23 specifically, it does have a unique relationship with the
24 Building Code in California. And that's because for good
25 reason historically it's a sector that has a lot of

1 autonomy due to its particular requirements and that are
2 obviously critical for healthcare, which is fundamental to
3 our quality of life. So bringing that conversation along,
4 staff, various staff at the Energy Commission have been
5 doing that, Gabe Taylor and others engaging with these key
6 stakeholder group. And looking for solutions together with
7 OSHPD, (phonetic) who really oversees the facilities in the
8 healthcare industry.

9 And so there's a lot of detail but avoiding
10 reheat is one of these critical needs that is a huge energy
11 waster. And now we have technology to help improve that
12 situation, so I'm super optimistic about this looking
13 forward to this project and seeing how it (indiscernible).

14 CHAIR HOCHSCHILD: Are you optimistic enough to
15 make a motion?

16 COMMISSIONER MCALLISTER: Oh, yes. Well,
17 actually I'll leave it to Vice Scott to make a motion.

18 VICE CHAIR SCOTT: Alright. I will move approval
19 of Item 16.

20 COMMISSIONER MCALLISTER: I'll second it.

21 CHAIR HOCHSCHILD: Okay, second by Commissioner
22 McAllister. All in favor, Vice Chair Scott?

23 VICE CHAIR SCOTT: Aye.

24 CHAIR HOCHSCHILD: Commissioner Douglas?

25 COMMISSIONER DOUGLAS: Aye.

1 CHAIR HOCHSCHILD: Commissioner McAllister?

2 COMMISSIONER MCALLISTER: Aye.

3 CHAIR HOCHSCHILD: Commissioner Monahan?

4 COMMISSIONER MONAHAN: Aye.

5 CHAIR HOCHSCHILD: And I vote aye as well. Item
6 16 passes unanimously.

7 Item 17, approval of the minutes? Do we have any
8 public comments on the minutes, on May 13th?

9 MR. GOLDTHRITE: We have no comments on the line.

10 MS. GALLARDO: This is the Public Advisor, no
11 written comments.

12 CHAIR HOCHSCHILD: Okay, any comments from the
13 Commissioners. Is there a motion, Madam Vice Chair?

14 VICE CHAIR SCOTT: Yes, I'll move approval of the
15 minutes.

16 CHAIR HOCHSCHILD: Okay. Is there a second?

17 COMMISSIONER MCALLISTER: I'll second.

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

20 Vice Chair Scott?

21 VICE CHAIR SCOTT: Aye.

22 CHAIR HOCHSCHILD: Commissioner Douglas?

23 COMMISSIONER DOUGLAS: Aye.

24 CHAIR HOCHSCHILD: Commissioner McAllister?

25 COMMISSIONER MCALLISTER: Aye.

1 CHAIR HOCHSCHILD: Commissioner Monahan?

2 COMMISSIONER MONAHAN: Aye.

3 CHAIR HOCHSCHILD: And I vote aye as well. That
4 item passes unanimously.

5 Item 18, Lead Commissioner and Presiding Member
6 Reports, Commissioner Monahan.

7 COMMISSIONER MONAHAN: Well, I want to start just
8 by saying we're kind of just beginning the IEPR workshop
9 process. We already had one, thanks to all of you for
10 joining that on heavy-duty vehicle electrification. Now
11 we're moving into light-duty electrification where we've
12 been dealing with some vehicle miles traveled issues on
13 Friday.

14 So and I wanted to congratulate both the Fuels
15 and Transportation Division and the IEPR team for
16 accomplishing this. I mean, there's a lot to do to go from
17 in-person into a Zoom meeting platform. As I think the
18 first meeting went off without a hitch. We had some
19 lessons learned. And we're trying to smooth things in the
20 next one where we're going to be allowing participants to
21 ask questions and then ranking the questions, so that the
22 facilitator of the panels can then look at the questions
23 and see if they want to incorporate those into the panel
24 discussion.

25 And I feel like it's a good example of where the

1 teams are really trying to use technology to do the best
2 public outreach that we can. I mean, we all know these are
3 trying times. It's hard to do public outreach well in an
4 online platform. And we recognize that some folks in some
5 cities just don't have access to good Wi-Fi. So trying to
6 make sure there's always a phone call in option, but I do
7 think there are things that we can do or technology that
8 we've never done in our IEPR workshops that can actually
9 make them more interesting. And we're trying, so we'll see
10 how it goes.

11 I really -- Heather in particular like she -- it
12 takes a lot of folks to pull off some of these Zoom
13 webinars, as we all know. You have to have a whole team of
14 people making sure that it goes off without a hitch. So
15 I'm excited to try and see how it goes.

16 I also think one of the benefits, as I mentioned
17 last time, is you could do it two days instead of having it
18 one day of eight hours. You can do two days, but it also
19 means you have to kind of do it shorter because three or
20 more hours, as we all know, on a Zoom call and your head
21 wants to explode. So we were trying to have shorter
22 workshops over two days and use these new technologies to
23 make them more interesting for everybody.

24 So I mentioned last time that I had held an all-
25 hands FTD meeting with our team and we did it again, so we

1 had a second one. And we tried Zoom breakout rooms this
2 time, because again we're trying to figure out like how do
3 you foster collaboration and community when you work
4 remotely? I would say it was just varying degrees of
5 success, because there were some lessons learned like
6 people have to be at the computer and they have to tap a
7 button saying, "I want to go into that breakout room." But
8 for those who were in the breakout rooms I think they had a
9 good experience.

10 So today we're going to be publishing the -- well
11 we, not me -- the Fuels and Transportation Division is
12 going to be publishing the Revised Investment Plan. There
13 is an advisory committee meeting next week. And then we're
14 going to meet with the Disadvantaged Communities Advisory
15 Group the week after that.

16 Really again, our plan is to get the -- our goal
17 is to get the Investment Plan to you this summer. Some of
18 it will depend on what kind of feedback we get. We really
19 were prioritizing in the revision like how do we continue
20 to make progress on clean transportation, electrified
21 transportation as much as possible, but also create jobs
22 and promote economic recovery to respond to the crisis, the
23 economic crisis for like COVID.

24 So I'm very curious to get feedback from
25 stakeholders, since as I mentioned I think in our last

1 time, we got feedback in a pre-COVID world. And so this
2 will be the first time we're getting feedback in the COVID
3 world. And because we're -- as I said you can only have
4 these ZOOM meetings for so long, so we're focusing the
5 conversation at this next Zoom meeting really on the
6 economic crisis caused by COVID and reactions from the
7 Advisory Committee and others, the public on that question.

8 So I think that about wraps it up for me.

9 CHAIR HOCHSCHILD: Okay, Vice Chair Scott?

10 VICE CHAIR SCOTT: Great. Well, before I jump
11 into my updates, I wanted to take a minute to thank our
12 staff in the R&D Division, but also those in Contracts,
13 Grants and Loans and the Legal Office. Today, you may have
14 noticed that today we did over 40 R&D agreements, which as
15 the Lead Commissioner for R&D is really exciting for me.
16 But that's a lot of work for our Contracts, Grants and
17 Loans, our Legal Office R&D Division to develop those
18 agreements, to get them prepared to be considered at the
19 Business Meeting. So I just really wanted to recognize and
20 acknowledge the tremendous amount of work that they did to
21 help bring these projects across the finish line.

22 Here, we have a few more that are coming for your
23 consideration. Those will be in early July, because we
24 have a few extra days to get some of those projects done
25 thanks to an Executive Order, so stay tuned for a few more.

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1 I also wanted to highlight the heavy-duty ZEV
2 market trend workshop. Great work, Commissioner Monahan,
3 in kicking out the IEPR. I thought it was really
4 interactive and engaging. And I think new ideas about how
5 to continue to make them more interacting and engaging,
6 making sure all the panelists are on video so people can
7 see them when they're speaking and other things like that,
8 I think will really wonderful going forward. And I was
9 happy to be able to participate on that initial IEPR
10 workshop.

11 I wanted to highlight also that the Chair and I
12 had a chance to check in with all of the deputies across
13 the Energy Commission just to get a sense of how is
14 teleworking going. How are people feeling about it? What
15 else can we do to help support folks as we do telework,
16 because we recognize that this a challenging time. Folks
17 are still trying to balance home school, telework, how to
18 amuse bored kids, taking care of parents, keeping an eye
19 out for pets. And there's no kind of clear delineation any
20 more between home and work or home and school or things
21 like that. And so just kind of really being mindful of
22 what we can do to help support folks as we continue to
23 telework, so that it continues to be a good experience for
24 people. And that we keep firing cylinders, which I really
25 think that the Energy Commission has done and that's in no

1 small part to excellent work across many folks within the
2 Commission.

3 I wanted to highlight also that we had a virtual
4 tour of food processor facilities, so as the Chair
5 mentioned that as we were doing the FPIP grants just a
6 little while back. But that was really fantastic. I
7 appreciate the hard work that Laurie ten Hope and her team
8 and LeQuin from the Chair's Office and Rhetta from my team
9 did to put that together, and really make it interesting
10 and engaging. I think we had about 90 minutes.

11 I was pleased to be joined with Secretary Karen
12 Ross, as the Chair had mentioned, Alice Reynolds from the
13 Governor's Office joined us as well. And we heard from
14 about three or four of the FPIP projects and they did a
15 really nice job. We had some short videos to see. We had
16 a chance that we could have some discussion. And so this
17 is a nice way to see what some of these projects look like
18 in a time where most of us are all still maybe hanging out
19 at our houses or home offices and not having a chance to
20 travel around the state and really see these projects.

21 One of the ones that was super impressive and I
22 might get the number of days wrong, but they swapped out
23 major equipment within nine days. And that they literally
24 had no wiggle room on either end. It was like the food
25 processing was going. They stopped. They had nine days

1 until they had to get the next set of food processing up
2 and running and they put in all that new equipment in that
3 timeframe.

4 And so one of the other things I think I really
5 appreciate the collaboration with the food processors in
6 working with the Commission, and our Commission staff in
7 working with the food processors, to understand what those
8 cycles look like. And how we can be most effective in
9 getting the equipment out, but also in doing the grants at
10 times when people are available to apply and then
11 understanding, oh okay, well they didn't put it in
12 yesterday, because we've got to wait until they've got that
13 nine-day cycle or that nine-day availability two or three
14 months from now. So their flexibility and nimbleness
15 within the program I think is really quite impressive. So
16 I was glad to have a chance to do that virtual tour. I'm
17 looking forward to doing more within FPIP and also within
18 R&D.

19 I also wanted to mention to you all that
20 yesterday I had the opportunity to participate in a -- I'm
21 looking up the title of it here -- a house natural
22 resources committee discussion, which was really quite
23 wonderful. The official title of the forum was "After
24 Coronavirus, Building a Prosperous Environmentally Friendly
25 Economy." So there were me and three other speakers. And

1 we had a chance to talk about the types of programs that
2 the House Natural Resources Committee may want to consider
3 as they're thinking through how do we build jobs?

4 So I talked a little bit about the EPIC program
5 and the Energy Innovation Pipeline that you guys are so
6 familiar with, which is basically how do we get a good idea
7 to proof-of-concept, out into how you manufacture it, into
8 the market, out into the public market at the market place.
9 And how we really kind of nurture great ideas that are
10 interesting and innovative technologies that we hope will
11 be some of the things that help us get to the 100 percent
12 clean energy standard. And we need to plant those seeds
13 now right, 2030 is not that far away. And this pipeline
14 takes a little bit of time, so I talked about that a little
15 bit.

16 I talked also about the importance of diverse
17 communities in this transition. We have to make sure that
18 we bring our low-income communities, tribal communities,
19 rural communities, communities of color, all the
20 communities that have been unduly impacted by the burden of
21 pollution need to be part of the solution in a meaningful
22 way. And we need to make sure that they are part of the
23 clean energy economy both in helping shape it, but also
24 with meaningful, living wage jobs, jobs that you can raise
25 a family on, jobs that you can send kids to college on.

1 But that is also an important consideration. And I talked
2 a little bit about how the Energy Commission tries to do
3 that with some of the grants that we give out as well.

4 And then the third thing that I highlighted were
5 that there's a lot of state programs that are actually
6 already up and running in this space. And so if you add
7 some funding to some of those programs we don't need to
8 recreate everything from -- we don't need to recreate the
9 wheel. And so I talked about Prop 39 and how that was a
10 win-win-win all around. We had schools. Those are
11 critical infrastructures. We put money in to help improve
12 energy efficiency and HVAC, which means these better
13 learning environments for students. It helped create jobs
14 and an upgraded critical infrastructure.

15 And I also talked about the charging
16 infrastructure and also hydrogen refueling infrastructure.
17 And how much more of that we need around not just the
18 state, but around the country, because obviously this is
19 how natural resources committee -- they're interested in
20 more than just California. And that those are also jobs
21 that can't be outsourced. Those are jobs that happen right
22 here in the communities where you're upgrading a school or
23 where you're putting in that infrastructure.

24 So those were three of the things that I talked
25 about with the House Natural Resources Committee. That was

1 just yesterday. And then I know the Chair will probably
2 speak about this, but I did want to note how much I
3 appreciate hearing from Professor Duster last Friday to
4 talk with our staff about everything that's going on in the
5 world right now and providing us a little bit of
6 perspective and an opportunity to talk with one another.

7 So those are my updates for you all today.

8 CHAIR HOCHSCHILD: Great. Thank you.

9 Let's go on to Commissioner McAllister.

10 COMMISSIONER MCALLISTER: Yeah. Great, so thanks
11 Chair for all of your attention. So I just wanted say this
12 was a great meeting and congratulations to Vice Chair Scott
13 just for all of the items, and the R&D team for getting all
14 of those items on the agenda. Just a really great slate of
15 wonderful projects, looking forward to seeing those move
16 forward, I mean doing the people's business. And kudos to
17 the Executive Office and just all the admin heft behind all
18 of that to do this virtually and seamlessly. And the
19 Public Advisor obviously is front and center in that as
20 well. So really it's a team effort, so doing the
21 Commission and California's business is just a pleasure
22 when all the cylinders are firing, in particular when all
23 the cylinders are firing. So I wanted to just say that.

24 I wanted to just point out the Assembly Bill 3232
25 building decarbonization efforts has had a lot of progress

1 in the last month or so. We've had two workshops, one on
2 May 22nd and another one yesterday on various aspects of
3 that. There's a growing, I think, level of expertise and
4 attention to this in both the Efficiency Division and the
5 Assessments Division. It was a really key joint effort
6 across divisions.

7 And there are many threads in our buildings:
8 technological, cross fuels, with local governments, just a
9 lot of stakeholders, technologies, programs to help with
10 focus subsidies or financing on different market
11 development initiatives. There's just a lot of different
12 activities. And 3232 alongside a list of a whole suite of
13 activities across buildings and appliances and planning and
14 forecasting. Really, you have to work together and so
15 staff has kind of -- we are all developing this muscle of
16 integration where we're always trying to pay attention, oh
17 what other group does this apply to and who do I need to
18 bring into a given conversation? That obviously is made
19 more challenging with COVID and remote work.

20 And I'm just really heartened to see that sixth
21 sense kind of developing across the staff that I work with
22 and oversee. So I really want to thank everybody for that.

23 Let's see, I wanted to give everyone a heads up.
24 You'll remember a couple of a few meetings ago I
25 highlighted the December release of the US Energy and

1 Employment Report that was a national effort that NASEO
2 kind of put under its wing when it was disowned by the
3 Department of Energy a few years ago in the change of
4 administration. So that had been happening with great
5 feedback on that and a lot of good data. And together with
6 the Public Utilities Commission, the Energy Commission
7 funded a California-specific effort to deepen the survey,
8 to do more sampling, to ask -- to target more California
9 entities, to understand the jobs landscape here in
10 California.

11 So that work is nearing completion. It's
12 basically completed. Been tweaking a few final details and
13 we'll be seeing that in the next few days. It's not a
14 Commission document. It's from DW Research with our logo
15 and the PUC's logo on it. But it'll be coming out
16 hopefully by the end of this week.

17 And obviously the jobs landscape is something
18 that we're all looking at. And trying to figure out, as
19 Vice Chair Scott just said, these are jobs that can be key
20 to restart our economy in ways that really focus on a green
21 and sustainable and our communities, disadvantaged
22 communities, low income communities, communities of color.

23 And I think the increasing importance or just
24 urgency of the equity issue and what we deal, we've been
25 focusing on this for years. But I think it's only worthy

1 of more and more ever increasing focus really as an
2 organizing principle for much of what we do.

3 So hopefully the jobs report can -- the data will
4 have access to more data than even is in the report. And
5 hopefully we can look at the demographics and the
6 geographies and look at that data in some more detail to
7 help us formulate policy recommendations and certainly
8 implement the ones that we already have responsibility for.
9 So I'm excited to get that California-specific product out
10 there, so we can start to work with that.

11 Let's see. I wanted to second Commissioner
12 Monahan's sort of appreciation of Zoom as a potential tool
13 to increase engagement, because I've been on a few calls --
14 we're all of a certain age and I certainly am learning how
15 to do -- no criticism there, right? I'm probably more of a
16 certain age than the rest of you basically. But I think if
17 you think about what it was like when it has been like in a
18 physical space, and hearing (indiscernible) in a meeting,
19 that is a linear activity. There's no way to have
20 different threads going on at once. Everybody is focused
21 on the same thing in any given moment.

22 And with the potential, like yesterday in the AB
23 32 workshop, 3232 workshop that we had, yeah there were
24 questions on different themes coming up in real time in the
25 chat. And so to the extent that there's five or six

1 questions floating in on a given topic, well maybe there's
2 a way, since that is recorded and it's on the record maybe
3 there's a way to sort of say, "Okay, well cost
4 effectiveness. We're going to break out a session quickly.
5 Let's have some real time interaction with stakeholders and
6 get that on the record." Rather than, or not in
7 substitution for it completely, but rather than having to
8 wait two weeks for everybody's comments to come in on that,
9 maybe we can get it started and get staff engaged and
10 another topic at the same time, which you just can't do
11 when your physical presence is not set up.

12 And yet here we have the opportunity to put
13 multiple streams on the record at once that is transparent
14 and accountable. So I know there are lots of issues there
15 and it's certainly a lot of effort on staff's part to
16 manage that. I don't want to get ahead of ourselves, but I
17 do feel like there's at least a potential to speed up or
18 enhance engagement that allows us to develop a record for
19 decision making in a more efficient way than maybe
20 historically we've been able to do. So anyway I've gotten
21 kind of excited in thinking about that.

22 I know Commissioner Monahan is kind of the
23 thought leader on this front here, so I'm happy to pitch in
24 my own two cents with Executive Office and everybody who's
25 actually got to actually execute on this. But just some

1 thoughts there.

2 And then kind of related, I guess more broadly,
3 but I want to just thank all of you for -- I talked earlier
4 about the kind of web of issues and so many details that
5 cross our silos and our divisions and our responsibilities
6 for oversight. And I just want to thank you for sort of
7 managing this inter related web of issues. So when staff
8 comes and talks with you about a certain issue that we're
9 all mindful and I think that's happening.

10 So it's a new set of skills, because all of us
11 have a so related in the decarbonization world that we're
12 in. So your attention to all of that is very appreciated.
13 Buildings are complex. Transportation is complex. And
14 behavior is complex. And so all of our touches really
15 matter and they need to be coordinated.

16 So and then finally I imagine, Chair Hochschild,
17 you'll bring this up. I also appreciated the talk from
18 Troy Duster, the other day. And I wanted to thank both you
19 and Vice Chair Scott for the letter, for the statement you
20 sent out last week, I think it was, just about
21 acknowledging the pain or historically-based pain and
22 systemic injustice we still have to deal with in our
23 society.

24 And I think I am working on it sort really going
25 into listening mode and just kind of trying to understand.

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1 We certainly have levers to pull at the Energy Commission
2 to focus on equity to emphasize that, to make it an
3 organizing principal in our world. The problems we're
4 talking about really are deeper and more systemic. And
5 they're not energy related, per se. What we can do is help
6 create jobs for folks look like the communities they serve,
7 and try to really make that happen in practice in a way
8 that it hasn't enough of. It hasn't been enough of and we
9 don't have that situation now. We need to help create that
10 situation, that economic vitality across the board and that
11 justice.

12 But anyway I wanted to just bring that up and
13 give it a little bit of voice from our perspective and just
14 acknowledge that listening is probably the skill we need to
15 practice, many of us need to practice the most going
16 forward.

17 So that's it for my comment.

18 CHAIR HOCHSCHILD: Thank you, Commissioner
19 McAllister, very well said.

20 And let me just say again for all the staff and
21 stakeholders, you know that letter, we're prohibited under
22 Bagley-Keene from being able to send a letter from all five
23 of us. But I very much feel that what the Vice Chair had
24 noted is it reflects the sentiments of all the
25 Commissioners and we're all in this together.

1 Commissioner Douglas.

2 COMMISSIONER DOUGLAS: Thank you. I have a brief
3 report. Our work has continued at a rapid clip here and
4 I'll join my colleagues in their comments about the
5 effectiveness of the remote public meetings. It's of
6 course not perfect, but I think it's gone very well under
7 the circumstances. I participated in a number of the IEPR
8 workshops and the DCAG meeting, the last DCAG meeting,
9 which was remote. We have held a series of permitting
10 meetings, public meetings both pre-hearing conferences and
11 evidentiary hearings for data center cases.

12 We recently conducted a public workshop for the
13 update to the RPS regulations. And that process is moving
14 forward on time I'm glad to report. And we got from you
15 know very helpful public comment at the workshop. And
16 we're now waiting written comments.

17 I also had a chance to participate in a panel
18 discussion of the implications, or what does COVID-19 mean
19 for the clean energy transition? This was hosted as part
20 of the energy systems management program first virtual
21 speaker series at the University of San Francisco. It was
22 a nice panel, a nice event, and one of the things that I
23 talked about there was how the state is moving forward and
24 we are meeting our goals. And we're able to implement our
25 programs. And of course there are challenges and there are

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1 changes presented by COVID. And those challenges and
2 changes, as has been discussed, are deep and broad and
3 societal. And for people directly affected with their
4 health and their jobs and so on, you know dramatic
5 sometimes, and has been very significant. And we're a
6 small piece of the picture. But I do think that we have
7 been able to continue moving forward in a positive way with
8 the work that we do.

9 And so anyway that's my only report today.

10 CHAIR HOCHSCHILD: Good. Well, thanks everybody.

11 Yeah, just building on Commissioner McAllister's
12 comments sort of about what's happening now in our country,
13 I have found myself the last 10 days getting very emotional
14 on certain points. Just, you know, watching that horrific
15 media on what happened in Minnesota, but also the massive
16 peaceful protests. One of which I had an opportunity to
17 participate in with my family on Saturday. And just seeing
18 the incredible diversity of support in age and race and
19 people marching, not just in our country but all over the
20 world, these protests in Australia, in India.

21 And it's really remarkable and I actually feel a
22 great sense of hope that this moment has really reached a
23 tipping point. And that we can make some lasting positive
24 changes in our country. And I also just want to say I
25 feel so thankful to be with all of you at the Energy

1 Commission. I really feel that we've become closer
2 together. And the town hall we had on Friday with
3 Professor Duster was extraordinary.

4 Thank you to Lindsay from making that into a
5 recording. That video is on YouTube now. And Drew sent it
6 out to all staff, but please feel free to forward that,
7 share it widely. I think it's a remarkable talk about the
8 moment we're in and sort of the path forward.

9 So I wanted to just say also we have two summer
10 interns starting, Lou Nguyen (phonetic) who is a senior in
11 high school has just joined this week and is going to be
12 helping with the IEPR. And on some research around
13 Lithium, recycling and some other projects. And then Jane
14 Stevenson (phonetic) who is at Stanford and is going to be
15 working support on SB 100. So welcome to them and I look
16 forward to meeting with everybody else, some fellows as
17 well. I am very sorry not to be able to be in the office.
18 It's really not quite the same experience doing this
19 remotely, but (indiscernible) summer fellows are a great
20 experience.

21 I really think that mentorship changes lives. I
22 feel absolutely the beneficiary of that just having had
23 people encourage me and inspire me. And so I know we all
24 aim to do that, to pass that on.

25 Just a couple of interesting companies that I met

1 with this week that I just love to see the innovation. One
2 of them is called Canoo that is a new company, about 300
3 people I think in Southern California, that's manufacturing
4 an electric vehicle. But rather than selling it they do a
5 long-term lease, but only to one customer. And it's a new
6 business model that goes along with Gabe cars (phonetic)
7 and everything else, but we're just seeing a lot of
8 innovation in the business model as well, particularly
9 transportation.

10 And the other is called Renewal, (phonetic) which
11 is using depleted oil and gas wells to do a gravity feed
12 energy storage system. You know, just very creative stuff.

13 So the last thing is really just with the Vice
14 Chair, one topic I'd love to work with you on is around
15 lithium recycling. And I understand PUC and CalRecycle
16 have done a little bit on this. And obviously we've funded
17 some stuff relevant to this, but I do think we need to work
18 to make a more robust lithium recycling plan and maybe even
19 set some goals for the state. Because my sense is the vast
20 majority of lithium ion batteries, particularly in two-
21 wheel devices like scooters and bicycles and such, are not
22 being recycled effectively. So that's something on my mind
23 I'd love to explore further.

24 Anyway, those are the main points that I feel are
25 super-important.

1 So let's go to the Executive Director's Report,
2 Drew. Drew, did we bore you to tears, are you still with
3 us?

4 MR. BOHAN: Apologies, I had not unmuted the
5 second place I need to unmute. Can you hear me now?

6 CHAIR HOCHSCHILD: Yes, we can. Yes.

7 MR. BOHAN: Commissioners, thank you. I just
8 have two quick points to make. The first is this is the
9 last Business Meeting of the fiscal year and the budget is
10 set to be in print this Friday and adopted Monday or
11 Tuesday of next week. And so we'll know the finals then
12 and I'll report at the next Business Meeting on the budget
13 and how we faired, which so far looks like we faired pretty
14 well.

15 And the second thing is I just wanted to share
16 the thanks that Vice Chair Scott said first to the teams
17 that made this meeting possible. End of year can sometimes
18 be a scramble and COVID made this year particularly
19 challenging. But I want thank some of our admin team, Rob
20 Cook who leads it, Melanie Vail (phonetic) is number two,
21 Rachel Rechtenwold (phonetic) who runs our accounting
22 division and Adrian Winnick (phonetic) who runs Contracts,
23 Grants and Loans. They and their teams, every single one
24 of them really worked very hard to make sure we got these
25 all pulled together for this meeting.

1 And then I also want to thank in particular
2 Laurie ten Hope and her team for doing the substantive work
3 on the EPIC projects. I'll just give one illustration,
4 Mike Gravely spoke about non-lithium storage. Mike is a
5 state treasure, as you know, I think we've even declared
6 that officially. And these projects start with an idea and
7 then a lot of heavy workload that nobody really sees in
8 figuring out how to write the solicitation, what do we want
9 exactly and what don't we want and what does a team look
10 like that is what we judge to be successful? And all of
11 that goes in right at the front end. Fast forward today,
12 you guys see the back end and the final projects and then
13 ultimately they get implemented and completed.

14 But there's just I wanted to illustrate what I
15 know you know, but wanted to say it, that there's a lot of
16 work that goes into it. With that I'll thank you very
17 much.

18 CHAIR HOCHSCHILD: Great, thank you.

19 Public Advisor's Report?

20 MS. GALLARDO: Hello, this is Noemi Gallardo, the
21 Public Advisor. I have a quick thing. The Commissioners
22 did touch on how the agency is doing what it can to make
23 sure that we're making our remote proceedings more
24 engaging, interactive and equitable.

25 My office is definitely working on that and I

1 wanted to invite the public to also help us with this by
2 providing any feedback or input on what would work for you.
3 So I wanted to let you know to feel free to contact my
4 office. And the way you reach us is to either write via
5 email at publicadvisor@energy.ca.gov. You can also call us
6 at 1-800-822-6228 and you can also find this information on
7 the CEC website.

8 That concludes my report. Thank you.

9 CHAIR HOCHSCHILD: Okay. Thank you.

10 Is there any public comment?

11 (No audible response.)

12 MR. GOLDTHRITE: We have no public comments on
13 the line.

14 MS. GALLARDO: This is the Public Advisor, no
15 written comments either.

16 CHAIR HOCHSCHILD: Okay. Let's go to Chief
17 Counsel's Report.

18 MS. HOUCK: Yes, thank you, Chairman. Just a
19 brief report, I wanted to introduce our summer interns.
20 Danielle Rosendun (phonetic) is a rising QL at UC Davis and
21 Katherine Romero (phonetic) is a rising QL at UC Hasting.

22 Danielle's previously worked for private law
23 firms and she's also worked on solar development projects
24 and Senator Ed Marky's campaign as well as for the Sierra
25 Club. And Katherine has worked for the San Luis Obispo

1 District Attorney's Office and has previously volunteered
2 for a grassroots campaign to ban fracking in San Luis
3 Obispo County.

4 We are really happy to have both of them on board
5 for this summer. I know that there's been challenges with
6 the intern program given the shelter-in-place order and
7 remote working, but we seem to be making it work in large
8 part thanks to two of our attorneys: Samantha Aarons and
9 Nick Oliver who've really gone above and beyond to help
10 integrate our interns into the office. And make sure they
11 have assignments and can connect with all of us. But I
12 want to welcome them to the office.

13 And then I also just want to thank Alan Ward and
14 our Transactions Unit for all of the hard work they've done
15 in working with staff to get this end of the year meeting
16 in place. And I really appreciate everything that they
17 have done, so that's my report. Thank you.

18 CHAIR HOCHSCHILD: Great, thank you.

19 I think that's it. I think we're adjourned.
20 Thanks everybody.

21 (The Business Meeting adjourned at 12:50 p.m.)

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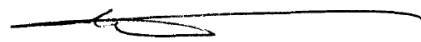
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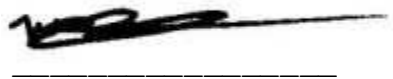
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