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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

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

CALIFORNIA ENERGY COMMISSION

THE WARREN-ALQUIST STATE ENERGY BUILDING

ART ROSENFELD HEARING ROOM - FIRST FLOOR

1516 NINTH STREET

SACRAMENTO, CALIFORNIA 95814

WEDNESDAY, JANUARY 22, 2020

10:00 A.M.

Reported by:
Peter Petty

APPEARANCES

Commissioners

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

Staff Present: (* Via WebEx)

Drew Bohan, Executive Director
Darcie Houck, Chief Counsel
Michael Murza, Chief Counsel's Office
Nick Oliver, Chief Counsel's Office
Jacqueline Moore, Chief Counsel's Office
Nancy Fletcher, Air Resources Engineer
Mazi Shirakh, PE, Project Manager
Rosemary Avalos, Public Adviser's Office
Cody Goldthrite, Secretariat

	Agenda Item
Steven Kerr	3
Lisa DeCarlo	3
Eric Veerkamp	4
Nick Fugate	5
Cheng Moua	6
Peter Strait	7
Balraj S. Sandhu	8
David Michel	9
William Pfanner	10
Geoffrey Dodson	11
Eleanor Oliver	12

Others Present (* Via WebEx)

Interested Parties

Scott Galati, for Oppidan Investments	3
Drew Johnson, Oppidan Investments	3
Jeff Harris, for Geysers Power Co.	4
Barbara McBride, Calpine Corp.	4
Paul Hauser, Trinity PUD	6

Interested Parties (Cont.)

Greg Mahoney, City of Davis	7
*Eli Goldstein, SkyCool Systems, Inc.	12
Joy Larson, New Energy Nexus	12
David Frost, InPipe Energy, Inc.	12
Dr. Eric Cummings, MaxOut Renewables	

Public Comment (* Via WebEx)	Agenda Item
Delphine Hou, CAISO	5
Wes Scribner	6
Joanne Harper	6
Lauren Cullum, Sierra Club	7
Nikita Koraddi, NRDC	7
Kevin Messner, AHAM	

I N D E X

Page

Proceedings 8

Items

1. Consent Calendar. (Items will be taken up and voted on as a group. A commissioner may request that an item be moved and discussed later in the meeting.) 8

   a. ALLIANCE TO SAVE ENERGY MEMBERSHIP

   b. NATIONAL ENVIRONMENTAL BALANCING BUREAU 2019 UPDATE REPORT (13-ATTCP-01)

   c. CAMPTONVILLE COMMUNITY PARTNERSHIP

   d. CALIFORNIA CLEAN ENERGY FUND DBA CALCEF VENTURES - Amendment 1 to grant EPC-18-002

   e. CALIFORNIA CLEAN ENERGY FUND DBA CALCEF VENTURES

      i. Transfer of $150,000 award for project titled "Enhancing Renewable Fuel Production with CO2 Microbubbles" from University of California (UC), Riverside to OceanForesters.

      ii. Transfer of $150,000 award for project titled "Graphite-coated High Energy Density Powder" from UC, Riverside to SiLi-ion, Inc.

      iii. Transfer of $150,000 award for project titled "Low-Cost Portable Smart WiFi Programmable Learning Bio-Mimicking Solar Shrub" from California State University, Fullerton to Aura Technology LLC.

   f. ADVANCED POWER AND ENERGY PROGRAM (APEP)

   g. ORDER INSTITUTING RULEMAKING PROCEEDING (20-AAER-01)

~~2. Small Power Plant Exemption for the Laurelwood Data Center (19-SPPE-01)~~ ~~xx~~

3. Mission College Data Center (19-SPPE-05) 9

4. Lake View Geothermal (79-AFC-01C) 13

5. California Energy Demand Forecast, 2019-2030 (19-IEPR-03) 16

6. Trinity Public Utility District (19-BSTD-05) 30

7. City of Davis Local Ordinances Exceeding the 2019 Energy Code (19-BSTD06) 44

8. City of San Leandro 53

9. Rim of the World Recreation and Park District 55

10. Digital Energy, Inc. 56

11. Renewable Energy for Agriculture Program – Farmers' Fresh Mushrooms California, Inc. 58

12. California Clean Energy Fund DBA CalCEF Ventures 66

a. CALSEED INITIATIVE 2019 PROTOTYPE AWARDS

i. Stasis Group, Inc., Modesto

ii. Empow Lighting, LLC, Sacramento

iii. Maxout Renewable, Inc., Livermore

iv. InPipe Energy, Inc., Chino

v. GenH, Inc., Palos Verdes Estates

vi. SkyCool Systems, Inc., Mountain View

13. Minutes 79

14. Discussion Item: Lead Commissioner or Presiding Member Reports 81

14. Discussion Item: Executive Director's Report 98

15. Discussion Item: Public Adviser's Report 98

16. Public Comment 24, 34, 49, 98

17. Discussion Item: Chief Counsel's Report 103

a. Pursuant to Government Code Section 11126(e), the Energy Commission may adjourn to closed session with its legal counsel to discuss any of the following matters to which the Energy Commission is a party:

i. I*n the Matter of U.S. Department of Energy (High Level Waste Repository)* (Atomic Safety Licensing Board, CAB-04, 63-001-HLW); *State of California v. United States Department of Energy* (9th Cir. Docket No. 09-71014)

ii. *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)

iii. *State Energy Resources Conservation and Development Commission v. Electricore, Inc. and ZeroTruck* (Sacramento County Superior Court (34-2016-00204586)

iv. *Natural Resources Defense Council, Inc., et al. v. United States Department of Energy* (Federal District Court, Northern District of California, (17-cv03404)

18. Chief Counsel's Report (Cont.) 103

v. *City of Los Angeles, acting by and through, its Department of Water and Power v. Energy Commission* (Los Angeles Superior Court, Case No. BS171477).

vi. *Helping Hand Tools v. California Energy Commission, and Vantage Data Centers LLC* (Sacramento Superior Court, Case No. 34-2018-80003026).

vii. In re: PG&E Corporation and In re: Pacific Gas and Electric Company (United States Bankruptcy Court, Northern District of California, San Francisco Division, Case No. 19-30088)

viii. State Energy Resources Conservation and Development Commission v. HyGen Industries, Inc. (Sacramento County Superior Court, Case No. 34-2019-00252543)

ix. *National Electrical Manufacturers Association, et al. v. CEC, et al.* (U.S. Eastern District Court of California Case No. 2:19-cv-02504)

x. *Olson-Ecologic Testing Laboratories, LLC v. CEC.* (Orange County Superior Court Case No. 30-2019-01115513).

b. Pursuant to Government Code section 11126(e), the Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and circumstances exist that warrant the initiation of litigation, or that constitute a significant exposure to litigation against the Commission, which might include.

Adjournment 104

Reporter's Certificate 105

Transcriber's Certificate 106

P R O C E E D I N G S

JANUARY 22, 2020 10:05 a.m.

CHAIR HOCHSCHILD: Good morning friends, welcome. Let's begin with the Pledge of Allegiance.

(Whereupon the Pledge of Allegiance is recited)

CHAIR HOCHSCHILD: Well, Happy New Year to everybody. And as a hardcore San Francisco 49ers fan, the year has started very well for me, my voice is a little bit horse from yelling at the TV on Sunday.

So we're going to first take up just the Consent Calendar Item 1a and Commissioner McAllister is going to recuse.

COMMISSIONER MCALLISTER: Yeah I was kind of glad that the Titans lost, because I was going to have a hard time figuring out who to root for. But it's good the 49ers won.

So I am on the Board of the Alliance to Save Energy. And this is a membership is Item 1a, and so the Commission is a long-standing member of the Alliance. And so I'm going to step out and recuse myself from that vote.

CHAIR HOCHSCHILD: Is there a motion for Item 1a?

COMMISSIONER DOUGLAS: Move approval of Item 1a

CHAIR HOCHSCHILD: Moved by Commissioner Douglas.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: Second by Vice Chair Scott.

All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That item passes 4 to nothing.

And now we'll take up the remainder of the Consent Calendar. Is there a motion for items b through g?

COMMISSIONER DOUGLAS: Move the Consent Calendar Items b through g.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Item 2 has been pulled, so we'll move on to Item 3, Mission College Data Center. Go ahead.

MR. KERR: Good morning Chair and Commissioners. My name is Steve Kerr. I supervise the Siting and CEQA Review Unit of the Environmental Office of the Siting, Transmission and Environmental Protection Division. With me are staff attorneys Lisa DeCarlo and Mike Murza. We're here to present a proposed order appointing a committee to oversee a Small Power Plant Exemption, or SPPE proceeding for the Mission College Data Center Project.

The SPPE option is only available for thermal power plants between 50 and 100 megawatts. And pursuant to Public Resources Code, Section 25541 the exemption can only be granted if no substantial adverse impact on the

environment or energy resources will result from the construction or operation of the proposed facility. The Applicant, Oppidan, filed its SPPE application on November 25th, 2019 seeking an exemption from the Commission's power plant application for certification process.

The Mission College Data Center would be in Santa Clara and include two three-story buildings housing data servers and associated diesel-fired backup generators to provide an uninterruptable power supply of up to 78.1 megawatts during an emergency utility power outage.

Staff will conduct an environmental review of the exemption application and produce an Initial Study. In addition to the Mission College Data Center, staff is currently working on the Walsh, Sequoia and San Jose City Data Center projects. Staff anticipates submittal of three more SPPE applications for data centers in the San Jose and Santa Clara area within the next month.

Thank you. We'd be happy to answer any questions you may have.

CHAIR HOCHSCHILD: Yeah. So the committee we were proposing is Commissioner Douglas as Lead and Vice Chair Scott as Associate. But do we want to hear from -- did you want make any comments or questions or should we hear from the Applicant?

COMMISSIONER DOUGLAS: No, I think should hear

from the Applicant. Thank you.

CHAIR HOCHSCHILD: Okay. Yeah, go ahead.

MR. GALATI: Scott Galati representing Oppidan Investments.

MR. JOHNSON: Drew Johnson, Oppidan Investments. We're the current owner and landlord.

MR. GALATI: Commissioner, thank you very much for giving me the opportunity here. What's being brought to you is kind of unique.

In 2018, this project already got a permit to be built by the City of Santa Clara. There was a full Initial Study, an MMD, prepared and adopted. And in fact demolition permits have been issued and demolition is ongoing. What has happened now is there are some minor changes to the project that are being proposed. And this was now at a time when we all know that these projects need to come to the Energy Commission.

So just real briefly, the project's changes are it's entirely within the same site. It's basically replacing one larger building with two smaller buildings. It's relocating the generators into the center and reducing from 120 small generators to 43 larger generators. It is relocating the substation within the site, relocating the access and the entrance way into the site. And it is revising the cooling option to reduce water by 90 percent

over what was originally approved.

Oppidan went out and hired the consultant that the City of Santa Clara hired to prepare the original IS/MND for the city and asked them to prepare this application in the same form that the city would use as an addendum. And that's what we've done.

So we ask and we believe that especially with staff's current work load this ought to be a lot easier than projects that are green field projects so to speak. The IS/MND has already been certified and all that staff needs to do is look at the changes, relying on the old IS/MND. It's only been adopted in July of 2018. And we're hoping that that reduces staff's load and this can go a lot quicker than some of the projects that you have, that I have before you, which are the environmental analysis has not been done and they're starting from scratch.

So that's what makes this unique. Time is of the essence. Phase 1 already has a tenant ready to move in as soon as we can build it. So we ask that this project get expedited and expedited in a way that makes a lot of sense. Let's do this much more as an addendum than starting from scratch. Thank you.

CHAIR HOCHSCHILD: Thank you.

Yeah. Staff?

MS. DECARLO: Lisa DeCarlo, Staff Counsel.

Generally when we have a situation where the city has already done an environmental analysis, we do use to the extent we can information provided and analysis provided. So we'll certainly do so in this case as well and expedite the analysis to the extent we can.

CHAIR HOCHSCHILD: Okay. Unless there's additional Commissioner comments we'll just take public comment on this. Is there anyone in the room wishing to make a comment or on the phone? Hearing none, did you want to say anything else before --

COMMISSIONER DOUGLAS: No. Go ahead.

CHAIR HOCHSCHILD: Yeah, is there a motion to appoint Commissioner Douglas as Lead and Vice Chair Scott as Associate for this committee?

COMMISSIONER DOUGLAS: So moved.

CHAIR HOCHSCHILD: All right.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Thank you all.

CHAIR HOCHSCHILD: Let's move on to Item 4, Lake View Geothermal.

MR. VEERKAMP: Ah, there's a green light. Good morning, Commissioners. My name is Eric Veerkamp. I work

in the Compliance Office of the Siting, Transmission and Environmental Protection Division. I'm the Project Manager for the Lake View Unit 17 Geothermal Project.

For your consideration this morning is a post certification petition for modification of the Lake View project. With me this morning is Nick Oliver, Staff Counsel. And we do have Nancy Fletcher in the room from our Air Quality Engineering Unit as well. And there are representatives from the project owner here as well.

Lake View, formerly known as PG&E Geysers Unit 17 Geothermal Project is an operational geothermal facility located in Sonoma County.

The petition for modification requests the addition of a stationery permanent emergency diesel engine for the cooling tower wet-down system. The emergency diesel engine would be used to prevent fire damage to the cooling tower from approaching wildfires. This proposed modification is similar to the amendments for Grant, Socrates and Quicksilver geothermal plants approved by the Commission in December of 2018.

In order to provide clarity and eliminate confusion between Air District conditions and CEC Conditions of Certification, staff has proposed revised, renumbered and reordered Air Quality Conditions of Certification for consistency with the Northern Sonoma

County Air Pollution Control District permit language for this project.

Staff concluded that with the adoption of the Amended Conditions of Certification approval of the petition will not have a significant effect on the environment and will not affect the project's ability to continue to comply with LORS.

Staff is recommending commission approval of the petition to install a new permanent diesel engine-driven pump for the cooling tower wet-down system at Lakeview along with the new proposed Air Quality Conditions of Certification set forth in staff's analysis.

This concludes my presentation and I'll be happy to take any questions you might have.

CHAIR HOCHSCHILD: Commissioner Douglas?

COMMISSIONER DOUGLAS: Just a brief comment. Actually let me see if the Applicant would like to say something.

MR. HARRIS: Good morning. Jeff Harris on behalf of the Geyers Power Company. In what will become your favorite appearance by me I don't have anything to add at this point, so thank you. (Laughter.)

CHAIR HOCHSCHILD: That's the first time you've said that, Jeff.

MS. MCBRIDE: And Barbara McBride with Calpine,

yeah. I have nothing to add but to thank staff for pushing this amendment through quickly, so we can get the pump installed.

COMMISSIONER DOUGLAS: All right, well I just wanted to say that this item reflects pro-active steps taken by Energy Commission staff and by the Applicant to improve resilience and safety at this power plant and to ensure that they're able to run the cooling tower wet-down system when needed. And I think this is very important. I'm happy to see it here and I move approval of the item.

CHAIR HOCHSCHILD: Is there a second?

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: I'm sorry. Did I call for public comment? Sorry, is there any public comment in the room or anyone on the phone? Hearing none, is there a motion.

COMMISSIONER DOUGLAS: Move approval.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passers unanimously. Thank you.

CHAIR HOCHSCHILD: We'll move on to Item 5, California Energy Demand Forecast.

MR. FUGATE: Good morning, Commissioners. I'm

Nick Fugate with the Energy Assessments Division. And I'm here today to propose adoption of the California Energy Demand 2020 to 2030 Forecast.

The demand forecasting is one of the Energy Commission's core responsibilities. And if adopted today, the forecast will be incorporated into the 2019 IEPR. The demand forecast is also a critical planning tool and lays the foundation for a number of state-sponsored planning and procurement efforts including transmission and distribution planning, integrated resource planning, resource adequacy and other activities aimed at keeping California's energy clean, affordable and reliable.

2019 was a full forecast cycle. Not only did we refresh all of our inputs and conduct a complete set of model runs, we also made some analytic improvements. Climate change impacts were incorporated into the forecast through adjustments to hourly temperatures based on new projections from Scripps Institute of Oceanography. The forecast includes incremental load growth associated with projected increases in cannabis cultivation following legalization in California and surrounding states.

Our hourly model now uses refreshed load shapes for energy efficiency, electric vehicle charging and time-of-use rate impacts. In a staff analysis of battery charge and discharge profiles allowed us to include behind-the-

meter storage impacts in our hourly forecast. All of these improvements were presented and discussed during IEPR workshops in 2019.

As part of every forecast we produce a set of high, mid and low-demand scenarios that reflect assumptions around energy efficiency, which are committed. That is we know when and how they are being implemented. These are our baseline scenarios. Of course, California has some ambitious climate goals. And there are a number of additional programs, standards and measures that have been proposed or that are already in development.

It's reasonably likely that these additional efforts will occur, but there is significant uncertainty around their implementation. So in order to ensure that a reasonable level of efficiency is considered in procurement and system planning, we developed additional achievable scenarios, or AAEE.

Each AAEE scenario represents savings that should be expected from future measures, given a particular set of assumptions around their timing, duration and funding. Importantly, an AAEE scenario can be paired with a baseline scenario to create a managed forecast for planning.

This is our statewide forecast of electricity sales and a high-level example of these baseline scenarios. The spread between them reflects different assumptions

around economic and demographic activity, retail rates, climate change impacts and photovoltaic systems and electric vehicle adoption.

The efficiency assumptions are relatively consistent across all three scenarios at the baseline forecast contains only programs and standards that are fully committed.

In the mid-case, the addition of significant amounts of PV along with projected increases in utility rates depress growth in the near term. Toward the end of the forecast, PV additions taper off and electric vehicle adoption contributes to long-term growth of a little over half a percent annually.

The story is similar for our non-coincident statewide peak forecast. PV additions have less of an affect though as the system peak hour shifts later in the day when PV output is reduced. Also, load growth from electric vehicles is not as significant since the bulk of EV charging is expected to occur outside of time-of-use peak windows. Here long-term growth is a little under half of a percent.

This slide illustrates the consumption savings associated with each of six AAEE scenarios. The name of each scenario indicates first which baseline scenario these savings are meant to be paired with, and second the level

of assumed program commitment. The high- low savings scenario, for example, is meant to be paired with our high baseline forecast and represents a relatively low level of savings.

The mid-mid scenario, which is commonly used for planning, reaches about 16,500 gigawatt hours by 2030. A little over half of the savings expected over the same years during the previous forecast cycle. This is due largely to a sizable decrease in traditional IOU program investment.

For this cycle, however, our staff significantly expanded their analysis of savings opportunities beyond traditional utility programs. And so the mid-high plus case, a bookend scenario which assumes the most aggressive level of program commitment reaches over 48,000 gigawatt hours, which is comparable to the previous forecast cycle.

All of these scenarios suggest that the IEPR forecast is not a single forecast, but actually a set of forecasts. Peak energy and hourly forecasts, they're all consistent but distinct products. The different baseline and AAEE scenarios apply to each. And our peak forecast even has different variants to account for extreme weather.

All of these projections have been docketed along with a notice of availability, which describes the complete set of forecasting considered today for adoption. The

appropriate selection of a baseline scenario, weather variant, and AAEE scenario from among the entire set depends on the specific use case.

There is an agreement between leadership at the Energy Commission, the Public Utilities Commission and the California ISO, known as the Single Forecast Set Agreement, which describes the current commitments at each organization to use a particular forecast for particular planning purposes. That agreement has been updated and will be memorialized in the text of the 2019 IEPR.

So our forecast is developed within a public vetting process. We held three IEPR workshops last year presenting and soliciting stakeholder input on our inputs and assumptions, on our preliminary forecast results, and on our revised forecast. We also held a number of demand analysis working group meetings to discuss specific technical elements of the forecast and to review forecast results in more detail.

We routinely engage with JASC. This is a joint organization working group promoting coordination between the IEPR forecast and its dependent processes at the CPUC and ISO.

Many of the formal comments that we received after a final workshop were forward looking. Any comments that we felt were not ready for inclusion in CED 2019 will

be considered again this coming cycle as part of our work planning.

We did make two adjustments to our forecast following our December workshop. A number of stakeholders noted that our behind- the-meter storage capacities appeared low relative to currently known interconnections. The CPUC was able to provide us with a supplemental data set in time for us to adjust our storage forecast. We also made an upward adjustment to our initial 2019 weather normalized peak estimates in response to formal comments from the ISO and after additional informal discussion with CPUC and the IOUs.

The adjustment brings our 2019 normalized peak estimates closer to the 2018 normalized peaks, which were the starting point for our peak forecast last cycle.

When we produce a forecast, we also like to issue a forecast report to memorialize all the inputs, methods and results that we spent the previous year discussing. We also plan to publish a staff white paper, a companion piece to the exploratory fuel substitution analysis presented at our December 2nd workshop. While the analysis is not part of this forecast, we hope that it will engage stakeholders in additional discussion and analytic work that will inform future forecasts.

2020 will be an update year, which typically

means the forecast will have a narrower scope. Fewer model runs means more time and staff resources will be devoted to improving our process.

Staff discussed with stakeholders this year the concept of an open request window. During the February and March timeframe we will be asking stakeholders to identify planning needs that could be served or perhaps better served by the forecast. And also to help us determine which of these needs represent changes the Energy Commission can and should pursue.

This is the last of my slides. I should mention now that there will be some activity on the IEPR Demand Forecast Docket later today. We'll be posting an amended version of our 1.1(c) forms. These are the tables that allocate our planning area sales forecasts to individual load-serving entities. On an earlier published version of the form, the IOU bundled line items mistakenly included some CCA and direct access customers. But this is an easily corrected allocation error and does not affect the overall forecast that we're asking you to adopt today.

Lastly, I'd like to thank all of our staff who supported this forecast, particularly our Assessments Division and our incredible IEPR team. And our very recently retired Chief Forecaster, Chris Kavalec. I'd like to thank our stakeholders who are consistently engaged in

this year-long process and who provided valuable feedback along the way.

And with that I'll conclude by recommending that the Commission adopt the California Energy Demand 2020 to 2030 forecast.

CHAIR HOCHSCHILD: Great. Thank you.

Commissioner McAllister? We do have some public comments. Did you want to say anything first or ask any questions or should I do the public comments card? Yeah. We do have one public comment from Delphine Hou. Are you here? Delphine, come on up.

MS. HOU: Good morning. This is Delphine from the California ISO. Chair and Commissioners, I just wanted to express the thanks from the California ISO for the fantastic work that the CEC team has done.

As Nick mentioned, we use a single forecast set for some of our very core processes, our transmission planning process, our local capacity, our flexible capacity and all of that is to ensure that we have what we need in order to operate the grid reliably as we integrate renewables.

I can't say enough for this fantastic team, so I'll do a quick shout out to Nick, Cary, Wynn Sedocra, (phonetic) Ingrid, Mike, Matt, Alicia and of course Siva. And there's more that I'm missing, completely my fault. We

really want to express our gratitude for the staff who've been working very hard especially with Chris Kavalec's departure, this being a full IEPR year, so there was a lot to do. And they took on additional tasks as they saw fit.

In addition to that they were very open and receptive to our feedback and our comments. And we really do feel like this is an excellent work product. So thank you very much. We very much appreciate it and we're looking forward to using the single forecast set and working with everyone in the future. Thank you.

CHAIR HOCHSCHILD: Well, we really appreciate that, Delphine. It's great to see interagency collaboration. We really appreciate your collaborative spirit as well.

Are there any other public comments in the room or on the phone? Hearing none, Commissioner McAllister.

COMMISSIONER MCALLISTER: Yeah, so I won't repeat what Delphine said, because that's pretty much what I was going to say. But so it's great to see that coming from stakeholders. But really it’s a tremendous effort with a large staff that's highly capable. And really some of the best analysts that we have in the state on these issues. And that's because it's super important work.

And I guess I certainly wanted to thank Nick and Siva and the team and Cary for sort of bifurcating Chris

and moving along. And Chris himself who you know obviously has been at this for a long time and I think created a culture that is continuing on, which is one of responsible planning.

I wanted to thank the ISO and the PUC and really just maybe frame this work as a platform for collaboration as much as for development of the forecast. Because the interagency discussion itself is incredibly valuable for us to understand the sort of pressures and needs and roles and responsibilities of each of our respective agencies. And so that triangulation that happens sort of on a consistent, constant basis during the development of the forecast is critical to getting to the right place and to making sure that everyone's informed.

And so when things come up we've all got -- staff across agencies all have an understanding of the context. And if there's an issue with a particular load pocket or a particular power plant or whatever, with markets, we can tune in to what's going on quickly and sort of have a common understanding relatively effectively.

And that's incredibly important for reliability in real time, really. And so I think the relationships that develop because of the forecast have a much broader relevance and importance.

And I would just add a couple of things.

Probably the thing that Nick you talked about the most was the AAEE. And that's because it's arguably the most complex piece of the forecast. And it reflects that fact that we know energy efficiency is incredibly important. We know it's actually going to be more important going forward for a clean energy future. The demand side has to be a key part of the solution for integrated renewables and load flexibility is really key. And so we're kind of moving that discussion in a much more sophisticated direction. And that's going to continue. And so I think the resources we're bringing to that are very well invested.

And then so as you said this is a full forecast. And next year is not a full forecast. And I think the goal there is to minimize the complexity as much as we can, so that we have the luxury of some methodology discussions going forward. And so just to point out to my colleagues there will be some interesting thinking going on about how the forecast should evolve, how it can use data better. You know, we've been talking a lot about data. How it can be more localized. How it can really embrace demand shapes, fuel switching, all of our fuel substitutions rather.

And so I think there are these topics of long relevance, long-term relevance that we're really kind of grappling with, but I think starting to get a handle on.

And that's really important for the forecast. And I want to just applaud Siva and the whole team for -- Mike Jaske is doing some interesting work. I think there's a lot of quality thinking going on there. We're going to need stakeholders to really step it up as well. So that's what's coming on in 2020 and I've very excited about that discussion, because it's super interesting. Certainly a little bit technical, but also extremely important.

So with that I think I won't recapitulate the forecast itself. I think it's a great product. I want to again thank the PUC and the ISO for just that iteration. And that kind of self-correction that's part of the system now I think, part of the relationships that we have. And the utilities for bringing their data and pointing out where they think there are inconsistencies and all the other stakeholders for suggesting different topics and themes going forward.

I think it's an incredibly valuable enterprise. And obviously we have to do it, but I think the reason we do it is much broader than statutory obligation. It's because it really helps the state get to where we need to go.

So with that I'll wrap it up. So thanks for indulging me.

VICE CHAIR SCOTT: Can I just add also my thanks

to Commissioner McAllister for his leadership and taking this on and really being down in the weeds on a lot of these topics. I appreciate that very much.

This is such a robust and transparent process. So Nick I really appreciate you kind of highlighting the stakeholder process that we went through. And Commissioner McAllister has expressed just the value that we get in both having a fantastic energy demand forecast, but also the relationships that it builds and really thinking through some of these critical issues for the state.

I appreciate very much also the collaboration with our sister agencies. And really what we've done is we've built the foundational information for the state's energy planning, right? And that's kind of what we do every other year. And then update it, tweak it in the interim.

And it's getting much more complex, as Commissioner McAllister mentioned. We've got lots more data that we have and we need to think through what to do with that, how to use is smartly, which data helps inform things for us to make better and better decisions. We're including increasing granularity into our forecasting, which is also very important. And then there's just ton of more complexities in the system, right, like load management which we had a workshop on earlier. There are

things like electric vehicles, which are sometimes demand and sometimes supply, right?

And so there's a lot of things that are changing and it's all changing very rapidly. So being able to capture that in the thoughtful and smart way that our forecasting team does is really fantastic. So I just wanted to kind of pile on there.

CHAIR HOCHSCHILD: Make a motion?

COMMISSIONER MCALLISTER: Okay, I'll move this item.

CHAIR HOCHSCHILD: Is there a second?

VICE CHAIR SCOTT: I'll second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Thank you.

COMMISSIONER MCALLISTER: Thanks Nick

CHAIR HOCHSCHILD: Let's move on to Item 6, Trinity Public Utility District.

MR. MOUA: Thank you and good morning Chair, Vice Chair and Commissioners. My name is Cheng Moua. I'm with the Building Standards Office of the Efficiency Division. With me is Mazi Shirakh and Jacqueline Moore from the Chief Counsel's Office.

Trinity Public Utility District is submitting an

application package which is our first application for a solar PV system requirement determination regarding whether the new PV requirement in the 2019 Building Energy Efficiency Standards should apply to its service area.

This item was presented at the October 2019 Business Meeting where the Commission requested that staff further document the analysis that was performed in the findings and allow the public an opportunity to comment before voting on the item. Staff has since prepared a report detailing the analysis that was completed and posted on the Commission's website allowing a 15-day public comment period. No comments were received during this period.

As a recap, and to provide background, the Energy Commission adopted the 2019 standards, which requires rooftop solar PV on all newly constructed low-rise residential buildings. The 2019 standards became effective on January 1st, 2020.

As part of the adoption, Section 10-109(k) titled "Photovoltaic System Requirement Determination" states that the Commission may upon written application or its own motion determine that the PV requirement should not apply to particular buildings if the Commission finds that the implementation of public agency rules regarding utility system costs and revenue requirements, the compensation for

customer-owned generation, or the interconnection fees causes the Commission's cost effectiveness conclusions to not hold. This ensures that the solar PV requirements apply where they are cost effective, consistent with the Public Resource Code.

Trinity Public Utility District conducted a public hearing and approved a decision to seek the determination from the Commission submitting an application under 10-109(k). Trinity Public Utility District serves most of Trinity County, servicing approximately 7,200 customers. Trinity distributes and sells 100 percent hydropower and splits its territory into two geographic zones, providing its customers with energy rates of 5.5 cents and 7.8 cents per kilowatt-hour.

Trinity acknowledges the Commission's ambitious goals. However it proposes that its energy rates are much lower than those used by the Energy Commission when determining the cost effectiveness of the PV requirement and that their low rates make solar PV not cost effective.

Staff made the application available to the public for a 60-day public comment period. Two comments were received during that period and were taken into consideration. Staff reviewed the application and performed the life cycle cost analysis using the same approach used during the development of the solar PV

requirement to determine if Trinity's agency rules would cause PV to not be cost effective.

Staff found that applying both Trinity energy rates and the net energy meeting rules for the analysis resulted in the solar PV requirement to indeed not be cost effective. Results showed that the electric bill savings during the generated over having PV were less than the solar PV system costs, having the benefit to cost ratio of less than one. This is the analysis that was detailed in the report.

For this reason staff recommends the Commission to approve the resolution determining that the solar PV requirement in the 2019 standards for newly constructed low-rise residential buildings not apply to Trinity Public Utility District service area.

We're here to answer any questions as well as Paul Hauser from Trinity. Thank you.

CHAIR HOCHSCHILD: Do we want to have comments from Paul?

COMMISSIONER MCALLISTER: Yeah, if Trinity wants to have some comments that'd be great. Appreciate your being here.

MR. HAUSER: Thank you, Commission. Paul Hauser, I'm the general manager for Trinity PUD. There's also a couple of other folks that are here with me that are

familiar with the building industry and Trinity County.

We were here in October. Thanks for having us back again. It's been a lengthy process, but I do want to complement your staff on a really thorough and conservative cost effectiveness analysis. I would be happy to answer any specific questions you have relative to Trinity PUD.

It was mentioned by staff, but I think it's an important reminder also that we are 100 percent carbon free. We applaud the Commission's efforts to decarbonize the electric grid. You might not realize it, but since Trinity PUD's inception in 1982 we have always every kilowatt hour we've sold has been 100 percent carbon free. So we applaud that. We're actively trying to move folks from propane in our area to our electric. And we'd be happy to answer any questions that you have.

Joanne Harper and Wes Scribner would also like to say a few words on (indiscernible).

CHAIR HOCHSCHILD: Absolutely. Thanks for coming again. I know it's been a bit of a long process. Yeah, go ahead.

MR. SCRIBNER: Thanks for having us here today. As Paul had mentioned, my name is Wes Scribner. I'm a Civil Engineer and General Contractor. I managed our water utility up in Weaverville for eight years. I worked for the Department of Transportation. And being such a small

community you're really in touch with everything and it takes kind of a whole village to keep everything going.

I've been talking to Paul and our PUD about this coming up too, because we're pretty in tune to the construction industry up there. I started in construction at the age of 10. My family has had a business up there for years. And probably one of the largest contractors in Trinity County, which is not much bragging rights.

The rooftop solar, my fear is becoming the straw that breaks the camel's back, because we're such a disadvantaged community you gets real in tune with just the dire need for housing and the bare minimum margins when people are constructing homes. And I would even go so far as to say housing. It's really we've got a modest community up there, modest pay and modest housing. And this kind of pushes us over the limit to the point where it's going to have a negative impact on our development.

The last point I'd like to make is that I know that there's a concern about setting a precedent here in California. I see this exemption not really as a precedent, but more of a focus of our efforts.

Like Paul had mentioned we already have a no carbon footprint with our power. What would be the point of us trying to pull resources away from other areas of the state that do need that development and put them up there

into the mountains?

It's tough for us to get construction resources up there. People don't want to drive up. In turn it's pretty expensive, so construction is challenging up in these rural areas. And so I appreciate your consideration for this exemption. It may or may not be a big decision for you guys, but just know that tucked away in these rural communities that these decisions to make a pretty significant impact for the people that do live here. Thank you.

CHAIR HOCHSCHILD: Thank you.

Go ahead, ma'am.

MS. HARPER: Good morning. Thank you for this opportunity to speak as a concerned involved Trinity County resident. My name is Joanne Harper. And I moved to Trinity County from Sacramento 20 years ago. My husband and I both graduated from UC Berkeley in the late '80s and very conscientiously chose Trinity County as the place we wanted to raise our family.

The fact that TPUD, our local utility district, receives 100 percent carbon-free electricity from hydro power was one of the many incentives for us to move to Trinity County.

I am also a California licensed architect with one of my main job responsibilities being the provision of

energy calculations to fellow residents. To date, I've prepared over 300 sets of energy calcs and I take this job very seriously. Our county is the poorest in the entire state as I understand it. Therefore it's especially important to be aware of the balance of residential construction costs in Climate Zone 16, which is the most extreme of climate zones, extreme heat, extreme cold, while being aware of building efficiency.

I do take it very seriously with great concern for my children's and grandchildren's future on the planet and respect for the visionary strides that the state of California continually make.

Additionally, I've taken many classes on the changes from the 2016 to the 2019 codes as well as studied the documents provided over the course of the last year on the topic of TPUD exemption from solar rooftop mandates. After much research and consideration and compassion for my fellow 7,200 Trinity County TPUD customers I stand before you urging you to reflect upon the staff review paper from CEC, dated December 2019, as well as the December 17, 2019 letter from Assemblymember Jim Wood.

TPUD provides 100 percent carbon free electricity from hydro power and has since 1982. How great is that? There's no other county in the state with this situation, yet we are so small and underprivileged we get lumped in

with all the other electric utilities throughout the state that actually do have quite a carbon footprint requiring negating. Trinity County does not.

The double whammy of being the poorest county in addition to the toughest climate extremes creates an exceptional challenge to folks wanting to build new homes here. It's very difficult for residents of Trinity County to build. We have a rather drastic housing shortage, because of this.

The mission of the CEC is to reduce the California carbon footprint, a concept that I fully support. Trinity County has been accomplishing exceptional strides in this regard for nearly 40 years with innovative, reliable hydropower. It simply does not make sense for our TPUD residents to install solar panels. Our electricity intrinsically is green. The argument that I've read about this being a precedent to other counties simply doesn't have weight, because there's absolutely no other county in our situation. We're small. We're exceptional. And we are doing above and beyond our part to have minimal carbon foot print.

Our county does have many homeowners that are off the grid. They simply cannot be served by TPUD. I've prepared dozens of energy calcs for these residents and all do have solar panels. It gives me such pride to know that

our small county accomplishes all that the latest strides in energy efficiency that you're shooting for. Our TPUD-served property owners are 100 percent carbon free with hydropower. And the other property owners off the grid are solar powered.

In summary, it clearly doesn't make sense for property owners in the TPUD District to install solar panels. We are fully aware of the environmental impact. And a rooftop solar mandate in Trinity County does absolutely nothing to help our environment while only increasing the building costs to a severely economically-disadvantaged community with a housing shortage to boot.

Thank you for listening. And I do urge you to respect our small county of great people that have been pioneers in minimizing our environmental impact for decades. Thank you.

CHAIR HOCHSCHILD: Thank you.

Is there any other public comments either in the room or on the phone? Hearing none, Commissioner McAllister.

COMMISSIONER MCALLISTER: Yeah, thanks everybody for being here. And I want to actually just ask maybe a clarification from Paul. I understand that the 5.5 and 7.8 cents kind of is all going to go down to 5.5 at some point as the bond gets paid off and you guys sort of revert back?

So I mean, the overall cost is going to be even lower than was represented now going forward into the future.

So I really appreciate everyone's effort on this, because I think it was very important to establish a process. I mean that's the conversation that we had in October was the merits seemed to be there, but it's important enough because it's the first and we want to make sure we get this process right and give everyone a chance to look at it and comment on it. It sounds like that went through in a fairly uncontroversial way.

And really just I think the reassurance that I can give to folks that are visiting from Trinity, is I really appreciate your comments is that this is exactly what we set out to do when we framed the building standards. Where we did a calculation that showed cost effectiveness on average, reasonably robustly, very robustly across the state, but we knew there would be exceptions. And we wanted to encourage those exceptions to come forward if they felt necessary. So that's what's happening. And then first one and this is exactly the way we thought about it.

And in fact that's what stakeholders, the broad group of stakeholders had suggested and we took those recommendations in the development of the rulemaking package. So I feel like at this point it's

straightforward. We have WAPA Power that's cheap. It's going to be cheap. And that community has made the case that they need to make. And we've vetted it and it's clear.

So I support this item.

CHAIR HOCHSCHILD: Yeah. The only thing I'd add just statewide we did just get the new estimates that we're now at 57 percent carbon free electricity as a state. So 36 percent renewables, 13 percent large hydrate percent Diablo Canyon and just an important point --

COMMISSIONER MCALLISTER: Yeah.

CHAIR HOCHSCHILD: -- that we are over the tipping point and fossil is now the alternative energy, so we have -- go ahead.

COMMISSIONER MCALLISTER: I guess the only other thing I would add is I certainly appreciate Trinity's situation in that it's already 100 percent hydro.

The conversation that we had in the development of the rulemaking, I think it's just worth saying -- it's not exactly in rebuttal, but solar -- in many places where solar -- it doesn't have to be as expensive as in the IOU-serviced territories to be cost effective. And it doesn't have to negatively impact build ability when you have a mortgage. Now many people don't have a mortgage. And I think those edges we have to really think about. But we

showed very clearly that solar is cost effective when it is part of a financed construction. Because of the cash flow that results from it in sort of the typical net metering arrangement at the typical utility.

Now Trinity is not the typical utility and that's the conversation we're having right now. But I do think that the conversation about housing affordability and solar's impact on it is often kind of misunderstood. So I think we need to just keep that note -- we need to make sure we're educating the public about that as well going forward.

But with that, I strongly support this item.

COMMISSIONER DOUGLAS: So if I could, I was just going to make a brief comment as well.

You know, when we adopted the solar requirements in the 2109 standards the Energy Commission very consciously added not only the new prescriptive requirements for furthering the state's goals of ensuring that the newly-constructed residential buildings would have solar. But we also put in place exemptions and a process for applying for exemptions when that requirement was not feasible or was not cost effective. And we fully expected that some utilities or some areas would come forward with a rationale that could be articulated and analyzed and understood. And I think Trinity has met that burden in

this case.

And I appreciate staff's hard work and rigorous work with Trinity to put forth the factual basis that we can all consider as we look at this item. So I think the work here was well done and I do understand that the folks from Trinity had to come here twice and I'm sorry about that.

But I also do appreciate Commissioner McAllister's request that we just ensure that we have a fully transparent and public process and a fully-vetted item to consider today. So we are sorry about the second trip, but I think it's a solid item and I think it's well done. So I'm in support of this.

CHAIR HOCHSCHILD: Vice Chair Scott?

VICE CHAIR SCOTT: Yeah, I have to actually really echo many of the things that you just heard from Commissioner McAllister and from Commissioner Douglas. I also want to thank the folks from Trinity for being here again today. We appreciate you making the trip.

I know that perhaps this first round didn't go quite as smoothly as everyone might have liked, but as the Public Member for the Commission it's so important that we have a good process and that folks understand what we're up to. And that the easily-accessible report that the staff put together that everyone can have a chance to look at and

not have to cobble pieces from different places. I know the information was there, but might have not been in an as-easily accessible format.

It's just really important, so I also appreciate the great work that has been done.

CHAIR HOCHSCHILD: Okay. Is there a motion?

COMMISSIONER MCALLISTER: Yeah. I'll move this item.

CHAIR HOCHSCHILD: Is there a second?

COMMISSIONER DOUGLAS: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Thank you.

MR. HAUSER: Thank you.

COMMISSIONER MCALLISTER: Thanks, everybody.

CHAIR HOCHSCHILD: Let's move on to Item 7, City of Davis Local Ordinances Exceeding the 2019 Energy Code.

MR. STRAIT: All right, good morning Chair and Commissioners. The California Public Resources Code requires locally adopted building energy standards to result in reduction of energy consumption levels compared to the requirements of the California Energy Code. As a consequence, in order for a local standard to be enforceable, the local jurisdiction must file its

determination that the standards are cost effective with the CEC. And the CEC must find the local standards will require a reduction of energy consumption levels compared to the statewide energy code.

The City of Davis has submitted an application for its Ordinance Number 2565, which specifies the following: first, mixed fuel single-family buildings shall achieve a total energy design rating of 9.5; second, mixed fuel low-rise multifamily buildings shall achieve an EDR of 10; and both types of mixed-fuel buildings shall be pre-wired to allow the use of electric equipment for space heating, water heating, cooking and clothes drying.

Staff posted the complete application, including the local ordinance and adopted cost effectiveness analysis, on the CEC's website under Docket Number 19-BSTD-06 for a mandatory 60-day public review period on November 13th, 2109. No public comments were received specific to the date of this ordinance.

Staff also reviewed the application to determine whether the standards will require the reduction of energy consumption levels permitted by the 2019 Energy Code, per the requirements in the Public Resources Code. Staff found that the standards will reduce the amount of energy consumed and will not lead to increases in energy consumption inconsistent with state law.

Staff further confirmed that the City of Davis publicly adopt a finding of cost effectiveness for its standard. Because staff has found that the application meets all the requirements of the Public Resources Code, staff recommends approving the enforcement of the City of Davis ordinance. I am available to answer any questions. And Greg Mahoney from the City of Davis is also here.

CHAIR HOCHSCHILD: Great. Any questions?

COMMISSIONER MCALLISTER: No, let's ask for Greg.

CHAIR HOCHSCHILD: Okay. Let's go to Greg then. Thank you.

MR. MAHONEY: Good morning, Chair and Commissioners. My name is Greg Mahoney. I'm the Assistant Director of Community Development Sustainability for the City of Davis.

And the Reach Code ordinance before you is really just a continuation of our existing energy policies in the City of Davis. The only real difference is that we're not requiring any additional energy efficiency measures for all-electric homes as a way to incentivize all-electric homes. And the city has a stated objective of carbon neutrality for the community by 2040. So that's why we included the pre-wiring for future electrical retrofits, so we can convert to all-electric homes down the road.

And I'm happy to answer any questions.

CHAIR HOCHSCHILD: Great, well I just want to thank you for being here and to point out this is actually kind of a little milestone. Peter correct me if I'm wrong, I believe this is the 100th Reach Code that we've approved for local cities in California since I think 2000. So did I have that right, Peter?

MR. STRAIT: Yes, I can confirm this is the 100th local ordinance that has been approved for enforcement through the Energy Commission.

CHAIR HOCHSCHILD: Some confetti and balloons somewhere that -- (Laughter.)

COMMISSIONER MCALLISTER: We can shop that in.

CHAIR HOCHSCHILD: Again these decisions are made at the local level. Our authority here is highly prescribed. We're looking to see if it violates Title 24 in any way, and if you've considered costs, and if it meets those two tests we approve everything. But just generally we are heading, as a state per the Executive Order, towards carbon neutrality by 2045. And we need local partners to get there. I really want to thank you and your colleagues, and all the leadership in the City of Davis for putting in the work.

Commissioner McAllister, do you want to say anything?

COMMISSIONER MCALLISTER: Yeah, thanks for those

comments. And how many of those were the City of Davis, of the 100? (Laughter.)

MR. STRAIT: At least half. I don't have a good count, but as a supervisor of the Standards Development Unit within the Building Standards Office I can express my own thanks, because it's another example of local jurisdictions leading this charge in the sense that they're paving the way for us to come behind with statewide standards. They're taking the risks to do some of this initial adoption, to put some of these ideas out in front of the public and see whether they work.

And the City of Davis has been a reliable partner in this. I think they've adopted under every code cycle since 1998 or was it 2005, but they've been a regular participant in this. And we wouldn't be where we are without all of this local effort including the effort by the City of Davis. So you have my thanks.

COMMISSIONER MCALLISTER: I also want to just thank you, Greg, for your leadership. I mean just in the CALBO context and being willing to step up and lead your colleagues in the building departments across the state, I think it's really tremendous. And you're just a voice that people look to and respect. And I think the City of Davis is positioned largely, because of your consistency and longevity there. So I really appreciate it. And having

actually put myself through the building code and the Building Department of Davis, I understand how rigorous you and your team actually is. And I really grew to appreciate that during the course of my own construction project.

But I think there's not a whole lot to add to Peter's presentation and to Greg's comments. You know, we're looking to prepare the ground.

CHAIR HOCHSCHILD: Is there any other public comment either in the room or on the line?

COMMISSIONER MCALLISTER: Oh, sorry.

CHAIR HOCHSCHILD: Yeah, go ahead.

MS. CULLUM: I forgot to turn in the blue slip, sorry. Lauren Cullum with the Sierra Club, California representing 13 local chapters in California and half-a-million members and supporters throughout the state. I'm here to express our support for the Energy Commission's approval of the Davis Reach Code today.

Reach codes such as this one are not just a key measure to reduce our greenhouse gas emissions, but are also critical to making housing more affordable, to lower the costs of new construction, to reduce indoor and outdoor air pollution and associated health and economic impacts. And to make our communities safer and more resilient.

California must prioritize efforts to electrify homes and buildings to achieve climate safety and

affordable housing goals and stop (indiscernible) our gas dependency. So not only are we supportive of Energy Commission approving these Reach codes, but we also urge the Commission to consider more bold action and make the Title 24 Building Energy Efficiency Standards in the 2022 Code Cycle explicitly focused on clean energy all-electric new construction. The cost to achieve greenhouse gas reduction goals will increase dramatically if we continue to expand the gas system with new construction.

So please consider electrification not just as a climate solution but an affordability solution in the 2022 Code Cycle. Thank you.

CHAIR HOCHSCHILD: Thank you.

Ms. Koraddi, Go ahead.

MS. KORADDI: Chair and Commissioners, Nikita Koraddi with the Natural Resources Defense Council also here in support. The local building code ordinance that the City of Davis is seeking approval for today is an example of California policy at its best.

California law authorizes local governments to adopt local energy ordinances that exceed statewide code requirements. In 2019 alone, 24 local governments from Carlsbad to San Jose to Santa Rosa have exercised this authority to adopt local codes that lead the way in clean and affordable new construction.

The City of Davis has adopted this ordinance after an extensive stakeholder process and determined that the proposed standards are cost effective for customers. The proposed ordinance encourages efficient all-electric new construction, which dramatically reduces carbon emission when powered by California's clean energy grid and rooftop solar panels.

All-electric homes cost less to build than conventional mixed-fuel homes and they save money on energy bills. Davis's ordinance also allows mixed-fuel construction with higher energy efficiency and pre-wiring for future electrification.

This local democratic process is leading the way for the state and the nation to fight climate change at a time when the wildfires in Australia, the Amazon and closer to home in California, are stark reminders that the climate crisis is upon us and requires bold and urgent leadership. The City of Davis is providing this bold leadership in a way that will also reduce the cost of constructing new homes and lower utility bills.

And for these reasons we urge your approval. Thank you.

CHAIR HOCHSCHILD: Great. Thank you.

Any other public comments either in the room or on the phone? Hearing none --

COMMISSIONER MCALLISTER: I actually have one question for Greg.

CHAIR HOCHSCHILD: Go ahead.

COMMISSIONER MCALLISTER: Just now that we're thinking about it, I think it would be good for us to do it in a public sphere. So are you -- I know this would not be in our vote here, but are you also promoting water efficiency measures in the code?

MR. MAHONEY: Well, we adopt Tier One, so that's a 12 percent increase in water efficiency above and beyond CALGreen requirements.

COMMISSIONER MCALLISTER: Okay.

MR. MAHONEY: We also have a requirement in our previous Reach Code where we require a receptacle at the most remote outlet, fixture outlet, for future on-demand re-circ pump. Because that was the biggest hurdle, was for the on-demand was that they manufacture re-circ pumps that all you have to is plug them in and connect them at the most remote outlet. And the cost to have an electrician come in and install the receptacle was often cost prohibitive for people.

COMMISSIONER MCALLISTER: Okay, that rings true. I guess I wanted to just commend you on that front too, because I worked with the city in my project to do some rainwater catchment tank and a grey water system just from

the ground up. And it was kind of new for all of us. And I really appreciated your working with us through that process. And it's working great.

MR. MAHONEY: Thank you, very good.

COMMISSIONER MCALLISTER: And it's saving a lot of water, saving a lot of water. So anyway, I was curious and wanted to ask what more you're doing.

But with that I'm very pleased to support this item and I move Item 7.

CHAIR HOCHSCHILD: Is there a second?

COMMISSIONER DOUGLAS: Second.

CHAIR HOCHSCHILD: Second by Commissioner Douglas. Let's take a vote. All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Thank you.

MR. STRAIT: Thank you, Commissioners.

CHAIR HOCHSCHILD: Let's move on to Item 8, City of San Leandro.

MR. SANDHU: Good morning Chair and Commissioners. My name is Balraj Sandhu. I'm with the Local Assistance and Finance Office in the Efficiency Division. Today, I'm here to request your approval of the proposed resolution for an Energy Conservation Assistance Act loan for approximately $1.3 million to the City of San

Leandro.

The measures at various city facilities will include upgrades to the interior and exterior lighting, heating ventilation and air conditioning, replacing chillers and adding a variable frequency drive to the pool water circulating pump at the Aquatic Center. The proposed project is estimated to save approximately 550,000 kilowatt hours and about $113,000 annually.

We request your approval of this loan and I'm happy to answer any questions you may have.

CHAIR HOCHSCHILD: Okay. Is there any public comment on this item?

MR. SANDHU: None.

CHAIR HOCHSCHILD: In the room or on the phone? Okay. Any questions?

COMMISSIONER MCALLISTER: No, I just want to commend staff. I think the process is well-oiled at this time. I appreciate the conversation, the presentation, and I think that this is a good project. So thanks. So I'll move Item 8.

CHAIR HOCHSCHILD: Great. Is there a second?

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: Second by Vice Chair Scott. All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Thank you.

COMMISSIONER MCALLISTER: Thanks, Balraj.

MR. SANDHU: Thank you.

CHAIR HOCHSCHILD: Let's move on to Item 9, Rim of the World Recreation and Park District.

MR. MICHEL: Good morning Chair and Commissioners. My name is David Michel from the Local Assistance and Finance Office within the Efficiency Division. We are requesting your approval of a proposed resolution for an Energy Conservation Assistance Act loan for approximately 157,000 to Rim of the World Recreation and Park District in Rimforest, California, in San Bernardino County.

The project proposes upgrading its interior and exterior lighting to LED and installation of solar PV systems totaling 24 kilowatts at three locations. The proposed project is estimated to save the district over 58,000 kilowatt hours and $9,600 annually.

We are requesting your approval of the loan and I'm prepared to answer your questions. Thank you.

CHAIR HOCHSCHILD: Thank you.

Are there any public comments on this item either in the room or on the phone? Okay. Commissioner McAllister.

COMMISSIONER MCALLISTER: It's great to see it being used for a part district, so thanks for bringing that to us. And no further comments. So anybody? All right, so I'll move Item 9.

CHAIR HOCHSCHILD: Is there a second?

COMMISSIONER DOUGLAS: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously.

MR. MICHEL: Thank you.

COMMISSIONER MCALLISTER: Thanks, Dave.

CHAIR HOCHSCHILD: Let's move on to Item 10, Digital Energy, Incorporated.

MR. PFANNER: Good morning, Chair and Commissioners. My name's Bill Pfanner. I'm the Acting Office Manager for the Efficiency Division's Local Assistance and Finance Office filling in today for Marites Antonio. And we're seeking your approval of an agreement with Digital Energy, Inc. for a $2.1 million technical assistance contract funded through the Energy Conservation Assistance Act, also known as ECCA.

So the Technical Assistant Program dates back to the 1980s. It consists of the Bright Schools Program and the Energy Partnership Program. And Bright Schools serves

K through 12 public schools and Energy Partners Program serve cities, counties and special districts.

The program provides public entities various technical assistances that range from energy audits to promote implementation of energy efficiency, feasibility studies for PV systems, thermal and battery energy storage and such. The program also offers professional engineering support services such as energy project proposal review, monitoring and evaluation of energy projects.

In May of 2019 the CEC released the RFQ solicitation for the Bright Schools and the Energy Partnership Program. The intent of the solicitation is to select a single prime contractor that heads a team of professional engineers and architects to assist and support the CEC's Technical Assistance Program.

The CEC received eight statements of qualifications of which the proposal from Digital Energy scored the highest. And the $2.1 million agreement will secure services for three years for the Energy Commission. And I would just note that Digital is the current contract owner that we are working with presently and we're very happy with their services. So I'd be happy to answer any questions you might have.

CHAIR HOCHSCHILD: Great. Good to hear.

Is there any public comment either in the room or

on the phone?

Okay. Commissioner McAllister?

COMMISSIONER MCALLISTER: There's no representative from Digital here?

MR. PFANNER: No.

COMMISSIONER MCALLISTER: There's no representative from Digital, okay. Well, I think we've been working with them for a while with good results, so I think I'm happy with continuing the contract with them.

CHAIR HOCHSCHILD: A motion?

COMMISSIONER MCALLISTER: Yep, I will move Item 10.

CHAIR HOCHSCHILD: Is there a second?

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That passes unanimously. Thank you.

Let's go on to Item 11, Renewable Energy for Agricultural Program - Farmers' Fresh Mushrooms, California.

MR. DODSON: All right, well good morning Chair, Vice Chair and Commissioners. My name is Geoffrey Dodson and I'm representing the Renewable Energy Division. I work in the Technology and Incentives Office where we administer

incentive and grant programs promoting renewable energy projects including the Renewable Energy for Agriculture Program known by the acronym REAP.

We're here today to ask for your support to approve the last of the 45 REAP grant awards resulting from our program's first grant funding opportunity. And additionally, as the last proposed aware we would like to use this opportunity jut to provide a brief update of our program.

So the REAP Program is part of the California Climate Investments and is financed by the Greenhouse Gas Reduction Fund. Accordingly, the key REAP project objective is reducing greenhouse gas emissions.

REAP provides grant funding for renewable energy projects, currently all solar PV system to serve agriculture operations throughout California. The grants range from $25,000 to $350,000 and funding can also include optional equipment including EV chargers, battery storage, and electric agriculture pumps that replace diesel pumps. The photo before you here on the slide just shows a solar array that was funded by our program and it currently serves a walnut orchard.

As you may recall, we released our grant-funding opportunity in January of 2019 and we received 98 grant applications collectively requesting almost $20 million in

grant funding. Out of the 98 applications, 45 renewable energy projects were selected in April of 2019 totaling all of our full funding amount available, which was $9.5 million. The grant awardees provided $5.5 million in match funding. To date, 44 of these grant agreements have been executed.

Currently, over 30 projects are in their build-out phase right now. Two projects are finished and the majority are expected to be completed in the first half of this year. Some projects are waiting to start due to various scheduling reasons such as availability of the equipment installers and the equipment themselves, as well as interconnection.

Since REAP is a new program serving busy farmers whose main expertise is agriculture rather than filling out paperwork, staff collaborated with key staff from other officers including the Contracts, Grants and Loans Office, our Legal Office, our Siting Office and our Public Advisor's Office and our Internal Audit offices to develop an innovative approach to our solicitation application and review process and the management of the grant applications. Many thanks to the key staff from these offices.

This resulted in an oversubscribed grant program and a streamlined, efficient management of the grant

projects. The implementation of these grant innovations and our exceptional customer service represent the unique programmatic qualities that REAP brings. These measures are contributing to high stakeholder satisfaction and trust in the program.

If today's grant agreement is approved the collective impact of the 45 renewable energy projects will include the addition of almost 7 megawatts of clean energy, all serving on-site agriculture operations. Two-thirds of our projects include the additional equipment funded through the program, as shown here on the red, orange, green and purple slices of the pie.

Over the lifespan of the installed equipment REAP projects are estimated to reduce greenhouse gas emissions by over 128000 metric tons of carbon dioxide or CO2 equivalent, which is comparable to burning 141 million pounds of coal are taking over 27,000 cars off the road for 1 year.

Additionally, over half of our projects are located in disadvantaged or low-income communities. Several of which include direct benefits to these residents like one of our grants with an entity that runs a farmer training and education program for low-income residents. The new solar PV system will directly reduce the electricity costs for these low-income tenant farmers that

pay for their own use.

The location of the project's funded projects are spread across the 18 counties throughout California, concentrated in agriculture-rich counties and benefit 8 out of the top 10 agriculture counties. The red dots here on the map show you the exact project locations while the green-colored counties indicate the total grant funds spent in those counties.

Now that I have had an opportunity to provide a brief program update I would like to move on to the proposed grant agreement that we seek your approval on today. The proposed grant agreement will be the final grant agreement of the initial 45 awardees. The proposed grant agreement with the Farmers' Fresh Mushrooms California, Incorporated is for $300,000 to install a 125 kilowatt solar PV system on the roof of their mushroom farm growing operation in Colusa County.

Like all REAP projects, this project will directly serve the onsite energy needs of the business and will result in greenhouse gas reduction benefits. Staff recommends the approval of this proposed agreement allowing the opportunity to proceed with the agreement execution and project implementation as such with our program solicitation requirements.

And I thank you for your consideration and time

and I am here for any of your questions.

CHAIR HOCHSCHILD: Okay, let me just say, Geoff, I really appreciate your diligence. I know you've worked really hard on all aspects of this program. This is a terrific program and I'm very proud, along with Commissioner Douglas, just how quickly this program got put together, got the money out the door. It's a win-win saving money for the agricultural community, it's creating jobs in the clean energy space and it's reducing our emissions and building energy Independence. And importantly, it has a good acronym. We have some truly terrible acronyms in the state of California. REAP, whoever -- was that you who came up with this or I forget who did?

MR. DODSON: I think it was a team effort in our office.

CHAIR HOCHSCHILD: A team effort, that's I think maybe our best one. Is there any other public comment on this item, either in the room or on the phone?

Hearing none, Commissioner Douglas?

COMMISSIONER DOUGLAS: I just wanted to briefly acknowledge the hard work of staff and this is a great program. I also wanted to say part of the reason why some of the outreach was so effective was not only the staff's hard work, but also coordinating with the Public Advisor's

Office. And so that's a really great way of working as a team within the Energy Commission.

As has been noted, this is the 45th and final award of the $9.5 millionth, so I just wanted to make sure that we acknowledged the great work on this program. And with that I will move approval of the item.

CHAIR HOCHSCHILD: Actually, I had one question when we designed this program just before we go to the motion, which is when we designed this program we get this feature where it's a larger Grant if the project includes electric vehicle charging infrastructure. What portion of the projects are including EV charging, roughly?

MR. DODSON: Let's see, from our pie chart that we showed, I think it was 52 percent of our projects have at least an EV charger. Some have EV charging plus other equipment.

CHAIR HOCHSCHILD: Which is great, terrific.

Okay. There was a motion from Commissioner Douglas, is there a second?

COMMISSIONER MONAHAN: Oh, can I ask a question before?

CHAIR HOCHSCHILD: Oh, go ahead. Yeah, tell me.

COMMISSIONER MONAHAN: As a new Commissioner I just don't just don't even know, but is it possible, I mean now that we've distributed all the grants we won't hear

from you again. And I'm just wondering if there's an opportunity during a Business Meeting for us to get like a six-month progress report? Just because this is such an amazing program and it would be great just to hear how things are going as you actually get money out the door and get these solar installations up and running. Is that possible that we could get just like a update at a Business Meeting?

CHAIR HOCHSCHILD: Sure.

MR. DODSON: Yeah, definitely as the projects are implemented we'd be happy to.

CHAIR HOCHSCHILD: You know, the other thing that I'd actually like to ask if we could work on this is I have talked to Secretary Ross about doing a site visit together. And anyone would be welcome to join that, certainly Commissioner Douglas and I, to go see some of the most successful projects?

MR. DODSON: Yes, definitely.

CHAIR HOCHSCHILD: Could you maybe draft an agenda and run it by Commissioner Douglas?

MR. DODSON: Yes, and we're actually actively working with her right now about that.

CHAIR HOCHSCHILD: Good. Yeah, yeah, great. Great, okay. Thank you.

All right, any other comments or questions?

Okay.

COMMISSIONER DOUGLAS: So move approval.

CHAIR HOCHSCHILD: Commissioner Douglas, is there a second?

COMMISSIONER MONAHAN: I second.

CHAIR HOCHSCHILD: Second from Commissioner Monahan. All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: That motion passes unanimously. Let's move on to Item 12, California Clean Energy Fund DBA CalCEF Ventures.

MS. OLIVER: Good afternoon Chair and Commissioners. My name is Eleanor Oliver from the Energy Research and Development Division.

I am here today to request approval of six awards for $450,000 each totaling in $2.7 million from the EPIC small grant program the CalSEED Initiative.

As you know, CalSEED provides small grants to entrepreneurs with early-stage clean energy technologies. Applicants first apply for a $150,000 concept award, which also comes with access to technical resources and business development expertise. Those that successfully receive a concept award are then eligible to compete for a 450,000 additional dollars to further develop their innovation.

The awards under consideration today are the

second round of those $450,000 prototype awards.

The prototype awards are evaluated through a business plan competition and awarded to CalSEED concept award recipients who have shown the greatest technical and commercial potential.

After being granted a concept award, recipients went through a CalSEED Initiative sponsored curriculum to complete a written business case package and prepare a technology pitch. They pitched their cases to a panel of judges who then evaluate both the written portion, an in-person pitch for technical potential, environmental and social impact, business strategy and the expertise and experience of the team.

The second prototype award business plan competition took place in August 2019 and the companies with the top six scores are presented here for your consideration today. Those companies are the Stasis Group, Empow Lighting, Maxout Renewables, InPipe Energy, GenH and SkyCool Systems.

The first company is Stasis Group, which is developing a simple bolt-in ducted thermal energy storage system that will integrate with HVAC systems to reduce heating and cooling energy use. This innovation uses phase change materials that can absorb heat in an active air stream, which allows continuous cooling without operating

the condenser unit.

In addition to continual comfort this technology aims to reduce the amount of energy required to condition the spaces we live and work in by eliminating up to 40 percent of the peak heating and cooling load.

During the concept award the team was able to demonstrate proof of concept on a lab scale. With the prototype award the Stasis Group will continue lab testing to fine tune the final prototype as a full-scale product, do field installations to demonstrate real-world electric cost savings and collect data that can facilitate future steps towards commercialization.

The next company is Empow Lighting who has developed a low-cost LED retrofit solution for linear fluorescent fixtures that can enhance energy efficiency light quality and aesthetics without requiring new or additional training or rewiring. This innovation employs a unique flexible thin sheet of film as an overlay to fluorescent fixtures. This design can spread light into a wide area and increase the useful light output.

Retrofitting with this technology will result up to a 70 percent energy savings from lighting within commercial buildings.

During the concept award Empow Lighting was able to demonstrate the fluorescent to LED-to-retrofit concept

and develop a working prototype of a small-scale retrofit panel. With the prototype award Empow Lighting will design and fabricate full-scale prototypes in standard size fluorescent troffers and validate the technology performance.

The third company is Maxout Renewables who has developed an all-in-one solar inverter called the Maxout Polyverter that is inexpensive, failure resistant and more effective at maximizing solar power output than commercial inverters currently sold on the market.

The Maxout Polyverter innovates by combining three previously separate devices: an inverter, optimizer, and battery storage into a single system. This technology decreases the cost of owning and maintaining a solar PV system compared to its competitors.

During the concept award the Maxout Renewables team were able to complete simulations that helped create a baseline design of the technology system and escalate the technology into a lab test for risk analysis. With the prototype award, the team plans to finalize the prototype and begin demonstrations for performance testing of the complete system.

The next company is In Pipe Energy. This company's technology is a pressure recovery valve renewable energy generation system. This innovation combines smart

software controls, sensors and hardware components that work in tandem with existing pressure-reducing valves to generate renewable energy and precisely manage pressure in water pipelines.

This technology has the ability to fit onto existing pipeline infrastructure without adversely impacting the effectiveness of water transmission. With this system, loss energy associated with the pressure reduction valves is captured and available for use.

During the concept award, InPipe did market research to validate the value proposition of this technology. From this market research, the team conducted field visits to pressure control sites to significantly advance its design and refine the technology capabilities.

With the prototype award, InPipe Energy will do a field installation and demonstration at a California-based water agency, which will help validate the technology design and collect vital data on performance.

The fifth company is GenH who has developed a mobile envelope dam electrification system. The innovation consists of modular siphons moving upstream water up and over a dam head into a set of modular turbines that quickly electrified non-power dams and canals in weeks instead of years.

This system generating capacity can be easily

scaled based on flow patterns and is designed to avoid interactions with the dam, removing the need for costly civil works in eliminating structural load analysis at the site.

During the concept award GenH team did extensive technology development with in-house performance validation. The team also secured a primary test site for demonstration and has optimized the system for commercial dam deployment. With the prototype award the team will do a final testing and fine-tuning of the system for a demonstration at the test site.

The final company before you today is SkyCool Systems. This innovation is a multi-layer optical coating on Sky panels that enables a passive method for rooftop cooling to increase the energy efficiency of a building. These panels can cool without evaporating water and only require minimal electricity to run a small circulating pump within the system.

During the concept award the SkyCool team completed an initial market research for the value proposition of this technology within the data center space and demonstrated the cooling ability of the panels in similar operating conditions as a data center.

With the prototype award the team will integrate with a modular data center to design and deploy a SkyCool

system for testing and collect data for the cooling performance of the panels.

Thank you for your time and I am happy to answer any questions you may have.

CHAIR HOCHSCHILD: Thank you.

We do have some public comments on this item, so let's begin with Eli Goldstein.

MR. GOLDSTEIN: Hello, can you hear me?

CHAIR HOCHSCHILD: Yeah. Go ahead, Eli.

MR. GOLDSTEIN: Yeah, my name is Eli. I'm one of the co-founders of SkyCool. I appreciate the opportunity to have this grant. And yeah, we're excited to be in the program. I'm happy to answer any questions that you guys have.

CHAIR HOCHSCHILD: Any questions for Eli?

Okay. Thank you.

Let's move on to Joy Larson from CalSEED.

MS. LARSON: Hi there. I'm really excited to be here. I am a Program Director for CalSEED Initiative at New Energy Nexus. And this was a long competitive process that these companies went through to get these awards. Combining the expertise of our partner from Cleantech Open as well as guidance from R&D at the CEC I think we have a pretty strong rubric for evaluating these potential grants.

So I'd like to thank our partner, Cleantech Open

for their help in coordinating the competition and for their expertise. And I need to also thank the specialists on the Technical Advisory Committee for their thoughtfulness and diligence in scoring all of these projects.

On behalf of the CalSEED team at New Energy Nexus, I'd like to also thank our colleagues at the CEC who continue to collaborate with us: Josh Croft and Anthony Ng, Eleanor Oliver and Erik Stokes.

The technologies that you saw Eleanor present are really clever, but we also heard at the business plan competition from these companies about how scaling their technologies will increase access to renewable energy. They'll create jobs. They'll lower electricity costs, and they will enhance reliability of the grid.

The timing of these grants is really crucial for these companies. You can see that these innovations are kind of far out there a little, you know? They're pushing the edges of technology and they need some de-risking before they can scale. And so the timing of these prototype awards, you saw that they're going to provide the pilot projects, field installations, prototype development, lab tests, certification testing and product optimization.

And so the timing of these awards for these companies is absolutely crucial. And we are really happy

to be a part of the process and excited to recommend these companies.

CHAIR HOCHSCHILD: That's great.

All right, Vice Chair Scott?

VICE CHAIR SCOTT: Yeah, I mean --

CHAIR HOCHSCHILD: Oh, no. Pardon me, we do have two more. My mistake, David Frost from InPipe Energy.

MR. FROST: Good morning. Hi, I'm David Frost from InPipe Energy. I'm here to speak in support of our prototype award. I just want to say how much of a game changer this is for our company.

For a long time you know the CEC has done analysis and determined that 19 percent of California's energy, about 1 in 5 kilowatt hours is water-related. Principally moving and treating water.

Other CEC research has described the substantial opportunity to recover carbon-free energy at the point of delivery in pipelines. The challenge has been in implementing these conduit hydro projects is we needed a way to not complicate or impact the operation of water agencies.

We're out there in the field speaking with water agencies daily and these guys are tough. This is InPipe's focus. You know, CalSEED has really made a difference and our goal is commercializing a first-of-its-kind energy

recovery valve we call the In-PVR. (phonetic) The In-PRV precisely meets the operating requirements of California cities and water districts, but instead of wasting potential green energy it produces it, essentially converting wasted pressure to clean, reliable dispatchable power. What could be more sustainable?

With the CalSEED Phase 1 grant we were able to get out there and do market research. And we've identified viable In-PRV sites throughout the state north and south, and rural and urban locations and many types of water infrastructure such as pumping stations, de-chlorination sites, water recycling facilities.

The proposed grant is really critical for us in terms of demonstrating our potential to economically recover wasted pressure that can be converted to energy and reduce the cost for California ratepayers in terms of energy and water.

This will allow us to take the vital next step of creating a critical case study that we need to support broad adoption. The InPipe team would like to thank CEC and also CalSEED and then the New Energy Nexus team. They've been great to work with for this opportunity.

As Joy said finding a way to finance bridging the gap from prototypes to product deployment is one of our largest hurdles. We feel very lucky to be part of this

program, because this grant will enable us to bring our innovation to California and the world. Thank you.

CHAIR HOCHSCHILD: Great. Thank you.

All right, Dr. Eric Cummings, MaxOut Renewables.

DR. CUMMINGS: Good morning. I was a scientist at Sandia Labs and I left to start Maxout Renewables with the aim of improving the reliability, resilience and affordability of solar power.

And several years ago we came up with an invention for a type of inverter that was highly differentiated from the other ones that promised real reliability improvements and cost savings. And we started doing our own prototyping. We entered the Clean Tech Open. We won it in energy development and we thought okay we'll now go to the next step and do a convertible note or we'll go to the private sector for funding. And we discovered that there was no money, no money whatsoever for an early-stage company in that field. You basically had to have sales if you wanted to get any kind of investment.

So we were actually stuck for several years until the CalSEED program and that has really made the difference. It gave us the money to prove out the technology, to de-risk it. The next phase will let us get through field testing. And at that point we can actually reach a strategic partnership with an inverter company,

which will get the product and the technology out there.

What CalSEED is doing is its unclogging a part of the innovation pipeline that has been dead for ten years. And you see it in the field. You see that inverters are less expensive than they were, but it's because of economies of scale and not technical innovation. The reliability has not improved. It's stagnated. What's needed is this kind of program to advance the technology, so you can hit the kinds of targets that you have aggressively set for yourself over the next few years.

Thank you very much.

CHAIR HOCHSCHILD: Great. Thank you.

Any other public comments either in the room or on the phone?

Before I turn it over to Vice Chair Scott I did have a question for Ms. Larson actually, which is just I'm interested in the non-financial support you're able to offer these guys in terms of introductions to technical advisors and other investors and so forth. How else are you incubating these winners?

MS. LARSON: You know, our partners at Cleantech Open are really helping facilitate with putting together kind of the nuts and bolts of their business plans. Our partners at Momentum are partners with other programs at New Energy Nexus, so also serve to connect all of the

entrepreneurs in CalSEED into a broader network.

We do host a quarterly investor connects night that I encourage everybody to come to, where we target different impact investors, VC, other kinds of corporates to come in and see these companies pitch their ideas. And we also offer a number of different pitch opportunities where companies can come and kind of practice their conversations and their pitch presentations.

CHAIR HOCHSCHILD: Great, good to hear.

Okay, Vice Chair Scott?

VICE CHAIR SCOTT: Well, this is great. It's all very exciting. I just wanted to just take one step back, because I'm not sure if Eleanor mentioned it in her presentations. Just to remind you all that you know our CalSEED program is the California Sustainable Energy Entrepreneur Development Initiative. That one does also have a really good acronym, just like REAP. (Laughter.)

And it's a $24 million grant program overall and it really is meant to help early-step California clean energy startups to bring their concepts and prototypes to market. And I think that you can hear from some of the folks that spoke to you, and also from the awardees that Eleanor has highlighted, that's exactly what it's doing. So I'm really excited about that.

I also just wanted to mention how much I

appreciated Dr. Cummings' words. And also some of the other awardees, because I think the EPIC team has been very thoughtful and diligent in seeking out the areas in this clean energy space where the EPIC funds can have the most impact. And I think kind of hearing from folks, oh wow this is really unlocking the pipeline that's been kind of clogged up, is great to hear back from the real world. Because they're thinking very much strategically about how do we get those dollars into those kind of areas to really unlock some of the innovations around California.

So I think we found a great way to do it through CalSEED. And I think that we have selected a great set of awardees as well, so I'm just excited about the EPIC funds and how they're being utilized. And I think you have a nice set before you.

CHAIR HOCHSCHILD: Any other comments or questions from Commissioners?

VICE CHAIR SCOTT: I will move approval of Item 12.

CHAIR HOCHSCHILD: Okay. Thank you, is there a second?

COMMISSIONER MONAHAN: Second.

CHAIR HOCHSCHILD: All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: All right. Item 12 passes

unanimously. Congratulations to all of you and good luck.

Let's move on to Item 13, the minutes.

Okay, Commissioner McAllister is abstaining on this vote. Is there a motion to approve the --

(Off mic colloquy.)

CHAIR HOCHSCHILD: Sorry, what's that?

COMMISSIONER DOUGLAS: All right, I move approval of the minutes for December 11th.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: Okay. All in favor say aye.

(Ayes.)

CHAIR HOCHSCHILD: So that's a 4-0 vote. Commissioner McAllister is abstaining. And then we have a second vote, thank you, for -- do you want to make a motion (indiscernible)?

COMMISSIONER DOUGLAS: Sure.

COMMISSIONER MONAHAN: Do I need to abstain for the second one?

CHAIR HOCHSCHILD: Yes. You do, yes since you weren't there for the whole thing.

COMMISSIONER DOUGLAS: You can.

CHAIR HOCHSCHILD: I think you should. Yeah, you should.

COMMISSIONER DOUGLAS: You could have looked at the transcript or otherwise satisfied yourself that the

minutes were correct. But okay, so I move approval of the minutes for January 8th, 2020.

VICE CHAIR SCOTT: Second.

CHAIR HOCHSCHILD: All right, all in favor say aye.

CHAIR HOCHSCHILD: With Commissioner Monahan abstaining, that passes 4-0.

Let's move on to Item 14, Lead Commissioner Reports. Commissioner Monahan, go ahead.

COMMISSIONER MONAHAN: Well we had our retreat, which was great and I'm very sorry to have missed the second day. But I missed the second day as you know, because I went to China. And I was a speaker at a conference that Janea spoke -- I'm sorry -- Vice Chair Scott spoke at last year. EV100 which is kind of a business coalition in China, but you know every business coalition still has a link, I would say to the Chinese government.

And it was a great conference. There was a lot of international participants there, which made it a dynamic conversation. When we had a breakout session that was just around what different governments are doing, so we were the only non-federal, non-national entity that was represented. But Spain was there, the UK.

And the UK was especially interesting, because

the person who was there is also helping facilitate the COP. (phonetic) And there's deep interest at the COP in having transportation be one of the elements. And also in having sub-national and potentially even cities represented in this.

And I think this will be especially important to given what's happening with the Trump Administration and the rollback of vehicle standards, the loss of the federal tax credit for Tesla and General Motors as they have exceeded the cap. And no -- at least right now there's not legislation actively that people are very positive about moving forward to replace that, so it makes California and what we're doing even more important. And I had numerous discussions with the lead, Simon, for the COP around what we could do in California and have followed up with Air Resources Board on that. I need to follow up soon with the Governor's Office on that as well.

And the others I've mentioned, Spain, they also are interested in doing more partnerships with California on particularly electric vehicles, but other aspects of transportation. The Netherlands of course, Japan and Norway were all represented.

So it was really interesting and fun to be like my first sort of international foray as a California government representative, so it was really fun.

And then after that I went with Energy Foundation China and some other foundations in the climate space to the lead city on renewable energy and hydrogen and fuel cells. It's Zhangjiakou and it's also going to be the location of the 2022 Olympics. And they're really trying to showcase how to pair renewable energy with hydrogen production and powering fuel cell vehicles. So they have massive solar and wind farms that are being used to generate hydrogen and we went and visited these facilities.

It was very cold. It was negative 20 degrees, so I had to run out one night to a Uniqlo to buy some long johns, because I really came under-prepared for how cold it was.

But it was very inspiring and I will say that if they're successful they're trying to get 1,500 fuel cell buses in place this year or early next for all the Olympic athletes. And it's all going to be powered by renewable hydrogen, you know. And they're building out their bus fleets, so if they're successful they could be using more hydrogen in one city than we're using in the entire state of California.

And we talked with the mayor of the city to explore an MOU on this topic. And because I'm new to this I'm trying to figure out how do we make sure -- you know, I can't do anything without Governor's Office approval, so

starting that process. And hoping in the next several months we'll have something more public to announce through the California China Institute that is at UC Berkeley that former Governor Brown has established.

So it was a really interesting trip and one of the most important announcements. I mean China has been historically half of the electric vehicle market. If you look cumulative sales are definitely half, but last year there was a big drop-off, a 46 percent drop in sales about. We don't have end-of-year data. And the reason is because they got rid of a tax -- I mean a credit for vehicles. And they announced at EV100 they're going to be re-instituting that for one more year to try to make sure the market is really accelerated before they just use incentives and other -- I mean more not fiscal incentives but other like city policies, to help accelerate the EV market. As well as a zero emission vehicle mandate that they modeled after California.

So that was a pretty important announcement. I mean I can't underestimate, like we cannot like undervalue the importance of China to the global electric vehicle market. Just like China helped to bring down prices of solar, China is bringing down the price of battery technology and so their market, the biggest market in the entire world, it's important to make sure that they remain

in a leadership position on this. So that was a pretty important announcement that we heard.

CHAIR HOCHSCHILD: Great. Thank you.

Commissioner McAllister?

COMMISSIONER MCALLISTER: All right, cool. So I was not at the last Business Meeting, so a lot of great stuff happened at that mentioned meeting. So I wanted to just thank you for adopting the California Energy Efficiency Action Plan. I'm very excited about that. Sorry I wasn't here in person to vote for it, but it really reflects a lot of work and a good direction forward. And that sort of ties up a lot of the themes that we talk about routinely with buildings and demand side efforts.

So let's see, and then I also wanted to just acknowledge all the great work that's happening on Load Management Standards, Karen Herter who's leading that on our staff, and we had a great workshop opening sort of kicking that off. There's a lot of positivism and optimism about where that can go and working with our colleagues at the other agencies, particularly the PUC. So I think that's got a good path, a good trajectory forward.

Mostly I wanted to talk about the COP. The reason I missed the last meeting was that I was actually at the council parties (phonetic) and there was a group whilst together representing California led by Secretaries

Blumenfeld and Crowfoot. They provided some great leadership and really got our message out, and so it was nice to sort of lock arms with our team and really taking ownership of California's role and responsibility in this global discussion, because it's real.

And I'll talk about a couple of things that sort of drove that home for me.

And it was a whole team full of folks in the private sector and other agencies and nonprofits. And so it was a kind of good broad representation of California and what we're doing in the climate across the board. The big focus was on oceans and that was I think the equivalent of what transportation might be for the next one. It kind of was a an overarching theme, ocean health, but didn't ignore all the energy and stuff that we do routinely in this agency. But certainly there was a lot of a lot of expertise floating around throughout the Convention Center on oceans and coastal health.

The sponsorship of the COP actually was largely provided through the Climate Action Reserve and the Climate Registry. And so they sort of put together a whole team that wasn't just California, but was nationwide. And so they sponsored most of my trip and a couple dozen others actually across the country, which was great. And part of the reason I was there was representing NASEO and so sort

of speaking for not just California, but the other states.

And so I think there was a really good multi-state, you know local and state jurisdiction conversation and representation throughout the COP and that was great. And US Climate Alliance was also very well represented and so a lot of intersect between the Climate Registry and the Climate Alliance states.

So it was really just kind of all hands on deck, you know? States kind of really carrying -- you know, states that are serious about climate and that have the all-renewables policies and tend to really be pushing in that direction alongside us. So it was a beehive of activity and it seemed like there were always allies popping up in any given any given event session-speaking opportunity.

I want to just thank the Climate Registry and the Climate Action Reserve for sponsoring. That's huge. It really makes it happen for the states, makes it possible.

And then also kudos to the governments of Madrid and of Chile, because I mean you all watched it happen where Chile you know had some civil unrest and had to pull their sponsorship and their hosting. But all of the infrastructure they had built was just transferred seamlessly over to Madrid. And so at any given event you'd see a bunch of Chileans and a bunch of Madrileños working

together to make sure that it came off without a hitch and it did.

It was an incredible event, super well-organized and you wouldn't even have known that Madrid hadn't been organizing this thing for the last year. And it was just a very I think, just well done to everyone and acknowledge what a feat they had pulled off, which was great.

So you know the news from the national level is -- that discussion I think is moribund and was not productive, did not succeed. And I think the US federal government presence there most definitely meets those criteria. But again it sort of just highlights the role of the states and I think independent of that, of all national overall discussion I think there's been over the last decade a growing realization that sub-nationals are really where it's at.

Not starting with Governor Brown, but certainly with his leadership just (indiscernible) MOU and that coalition and C40 Cities. It's clear that that's where the action is and where a lot of the policies that are driving growth and clean energy are at, are not at the national levels and they kind of are playing clean up at best.

And so the side conversations, not the main event between the countries, but actually the side event was really where the innovation was discussed. It was where

the best networking happened. Where the best projects were with a potential for replication. You know, all of that is happening at different scales and typically smaller scales. And so I think that that's just something that California -- I think a few takeaways from my perspective are just that there's this incredible thirst for implementation solutions. There's just this people want to keep it real. They're tired of talking. They want to do.

And their second point they're looking to California for that kind of leadership. And yeah, we always gosh if we only had more resources to do this with that. Well, we have way more resources than most of the sub-national jurisdictions and I think we sort of lose sight of it in our bubble. But we have so many more levers to pull than most other folks do that are operating at the city or province or region or state level within their countries.

And so I certainly came away super thankful for that. There's a frustration about the national efforts and there's just this real sense of urgency to get things done.

Let's see then I think a few sort of technical notes, and certainly there's a strong focus on energy efficiency, all the different renewables technologies, but a few overarching themes really emerged for me. And I was on a whole bunch of panels with probably 15 or 20 different

countries on different topics. That are sort of carrying the water for all of the things that the Commission and the state actually do in energy. So it was renewables and storage and obviously buildings and efficiency.

And the role of hydrogen I think is much more mature than maybe the conversation we're having in California. I know that there's a there's a big role in transportation that we've been talking about for a while, but I think in the power sector generally we've kind of under-baked our hydrogen conversation.

And, you know, Germany and Scotland and other national jurisdictions that have significant natural gas infrastructure, their fossil gas infrastructure, are really looking hard and pretty far down the road I would say in in hydrogen as a substitute fuel or energy carrier in some form or another. And that maybe we're overestimating infrastructure problems and kind of underestimating the maturity, the existing maturity of that hydrogen ecosystem.

So did you want to say something?

COMMISSIONER MONAHAN: Well, yeah. I actually think this is something we would should think more about as a conversation about how do we use renewable energy to generate hydrogen for transportation. And potentially for the power sector like they're doing in the EU and other places.

COMMISSIONER MCALLISTER: Yeah, exactly. The EU is really taking this seriously and where in Scotland, where the next COP is in Glasgow next year, they have all this North Sea gas infrastructure. And they're looking, they have really committed that hydrogen has to be part of their clean energy future.

So I think there's if we need to build kind of a fact-based discussion, because I think sometimes there's a sense of hydrogen is a little bit of a get-out-of-jail-free card for fossil gas. Because a lot of its you know you're reforming the natural gas to get the hydrogen and what keeps that clean, right? And so but I think there are ways, you know DWP has got some interesting work going on with clean hydrogen. And certainly some of these other jurisdictions and nations do.

COMMISSIONER MONAHAN: Can I say one last thing?

COMMISSIONER MCALLISTER: Yeah, go for it.

COMMISSIONER MONAHAN: So it is a conversation I recently had with Mary Nicholas as well, so ARB is also interested in this topic. So it is just worth thinking through how do we do research that really grounds this potential, so we better understand what is the potential for hydrogen in California for multi uses.

COMMISSIONER MCALLISTER: Yeah, exactly. And a lot of it is about the electrolyzers getting cheaper. But

there's some sites that are great that are natural places where that could get tried out. So but I totally agree. I think a platform for that conversation possibly -- well we have a number of forums that we could create or just leverage for that. So anyway just a suggestion, but I was a little bit surprised by that. By the commitment that some of our counterparts in Europe particularly have to hydrogen.

And then also we talked about in the forecast discussion about we sort of compared and contrasted the EFI Report and E3 Report on the future of natural gas. You know, I think one difference is the role of CCS and I think that sort of diversity of opinion was definitely reflected in some of the serious jurisdictions that are dealing with climate that were at the COP as well.

So, you know, not exactly the same cast characters as in hydrogen, but I think the CCS is another place where there are proven technical solutions and the question is you know what's their cost trajectory? What's their potential role in our clean energy future?

So again, I think that's a conversation we need to figure out a way to have without getting distracted. Because again it looks a lot like the fossil industry and so we have to kind of be careful. Okay, how do we manage that conversation, so that it's responsible and actually

focuses on decarbonization, so anyway.

And then the third technical theme was the load flexibility. It's time has come. I mean I came back completely convinced that we are out ahead of this in terms of load management standards and we've been talking about in the buildings context demand response and trying to figure out a way to get that to work. And I think we're starting to really hit on something that's going to have resonance across the globe. So again I think California is in the right place to lead that conversation and to work with our progressive counterparts to develop solutions there.

And then finally I wanted to just I guess it may be emblematic, but the last talk I gave was sort of like late the night before I got up early to leave the next day. And it was to the Spanish equivalent of the ISO, right? The folks who run the wholesale grid in Spain. And so I was kind of -- the talk was about describing the wholesale system and how this batch happens and sort of how we do things in California.

And I said how many people have heard of the California Independent System Operator? And basically nobody raised their hand, a couple people, but these were insiders. I mean these are people who like run the ISO. You know these are like the equivalents of people that work

there or work with their version of the ISO.

And I said how many people have heard of the duck curve, right? *La femosa curvo de pato*, you know? And everybody raised their hands. So like the marketing or the messaging around the duck curve has had global residents. Regardless of nobody knows where it came from, but they know that the duck curve is a thing.

And so they're -- but they're facing not exactly the same issues, but they're facing identically complex but solvable issues. And I think that that connection, that networking is something that we need to build on with them. Whether it's at the COP or you know between years I think there's a lot to focus on, a lot to collaborate on. So you know it's certainly Germany who we work with and Mexico, and others I think can be part of that conversation.

And then finally I just want to thank my Advisor Brian and Alana Sanchez for all the international work they're doing. I think it gets to be a burden sometimes, because organizing these international get-togethers is a lot of detail work and just a lot of work. But it's really important actually to get the delegations in here and get them socialized. And, you know, reciprocate as much as we can when we get out of the building. So I want to just show some appreciation to them.

So that's it for me. Thank you.

CHAIR HOCHSCHILD: Thank you.

Vice Chair Scott?

VICE CHAIR SCOTT: I don't have too many updates for you all. I did want to note that I had a chance to attend at least the first part of a load management standard workshop kickoff, which was last -- that was last week, right? Yeah, okay.

And yeah, I am appreciative that you and Commissioner Douglas have taken a look at that and are bringing the Energy Commission's authority back to the forefront to kind of really think through what we can do there. I think it is going to be critical to how we get to our clean energy, 100 percent clean energy standards' decarbonized grid here in California. And so it was a delight just to get to listen to the first half.

And I want to pay close attention to that as it goes on because I think there is a lot of complexity. It's very interesting. We've got all kinds of data and technical pieces and thinking through with the EPIC team, the research team. Are there things that we ought to be putting dollars towards right now that can help answer some of the questions that may come up in the proceeding? I'm very much very much intrigued by that and looking forward to it.

The EPIC program I think you all know is being

considered before the Public Utilities Commission right now for a continuation of that program. And so the Energy Commission has joined that proceeding as a party, which we did a few months ago. And they're kind of in the pre-hearing conference stage of that right now. But I am sure that if you want additional details or status updates or that kind of thing as that goes along please feel free to reach out to the EPIC team, Laurie ten Hope and her folks. I will be happy to provide briefings about where we are and how that's going.

And then I just wanted to highlight a couple of things that are coming up. We have a resilience forum, which will be in Long Beach on February 25th. We will be looking at things like the wildfires and PSPS and how some of the projects -- oh and also like Cal-Adapt and some of the research that the Energy Commission has done with Cal OES, CAL FIRE and others to really think through the types of technologies and research we need, that we've done that are helping with resilience. But that we also need to continue to do to help with resilience in our globally-warmed world here.

And then the annual EPIC Symposium is also coming up, so mark your calendars for April 1st. And second it will be over not in the Convention Center, because the Convention Center is under construction right now, but over

in oh I think it's Sac State but don't quote me on that. We'll make sure that everyone's got those details, but if your calendars fill up as quickly as mine please do mark the 1st and 2nd, so that you can attend at least part of it if not all.

And those are my updates.

CHAIR HOCHSCHILD: Great. Thank you.

Commissioner Douglas?

COMMISSIONER DOUGLAS: I have two very brief updates. I did appreciate the opportunity to participate in the load management standards workshop kickoff and I was happy to do that. And we also held an RPS pre-rulemaking workshop on Friday January 10th and that was well attended and we got great feedback and we're going through comments on that now.

So those are my updates.

CHAIR HOCHSCHILD: Okay. Just real quick on my end, I attended an energy forum led by former Senate Pro Tem President Kevin de Leon in LA last week along with Assemblyman Holden, Chair of the Assembly Utilities and Senator Hueso, Chair of Senate Energy. Great dialogue on decarbonization in the transportation and building sectors, and a lot of stakeholders there.

And I also spoke to the Board of Audi who was in Silicon Valley recently. They are going very big and

aggressive on electric vehicles and looking to ramp that part of their business rapidly. And I drove down there in the Audi e-tron, which is I think is the first electric SUV that's you know priced at a more moderate range and I think to the 20 mile range. And a great car.

So then coming up we've got a couple things including military confab with the new Commander of the Navy Region Southwest and the new Commanding General of the Marine Corps. So bringing a bunch of folks there.

I also want to say I had Davie Earn (phonetic) with me at this thing with the Senator de Leon, who was terrific and gave a great update on all the R&D progress we're making. And I was really glad to see that message get through and what we're doing with microgrids.

Those are my highlights, so let's move on to the Executive Director's Report.

MR. BOHAN: Good morning, nothing to report. Thank you.

CHAIR HOCHSCHILD: Okay. Public Advisor's Report?

MS. AVALOS: No report, thank you.

CHAIR HOCHSCHILD: Okay. And we do have a public comment, Kevin Messner from AHAM.

MR. MESSNER: Thank you and good morning. I was hoping to be coming up to speak on an agenda item, but I'm

not. I just wanted to take the time though, it's just frustration building from us and just on a couple items. It's being increasingly difficult to comply with CEC regulations and I'm going to give you three examples and --

CHAIR HOCHSCHILD: I'm sorry, can you just identify yourself again?

MR. MESSNER: Sorry, Kevin Messner with the Association of Home Appliance Manufacturers.

CHAIR HOCHSCHILD: Association of Home Appliance Manufacturers, okay. Thank you.

MR. MESSNER: Yes. And they've just been -- a lot of these have been brewing. We have been working with staff and trying to resolve them, so I do appreciate that staff has been responsive and talking to us. But we're just still not getting to any resolutions on things, so these go back a while.

One is we still have the issue of LEDs do not work in high-temperature range hoods and that's been going on a while. And there's no solution, so it's just we haven't figured out a way forward, but yet LEDs don't work. They just -- the laws of physics, they degrade with high heat, so you put them in a range hood and with the light bulb standards -- I realize light bulb standards is a big deal.

And I'm not trying to get in the middle of that

mess, but it's just a compliance issue for our manufacturers.

CHAIR HOCHSCHILD: I have LEDs and have for a long time in my range hood and they work fine for me, but is this for particular types of residential or commercial applications you're talking about?

MR. MESSNER: No. The LED, the diodes will degrade with high heat, just permanently degrade with high heat, so they will they will more quickly degrade over time. They won't last as long as they're supposed to, so over time every time there's a high heat that they go to that will just physically degrade some of the diodes. And they will be permanently destroyed.

CHAIR HOCHSCHILD: Is this mostly a commercial though? I mean --

MR. MESSNER: No, this would be in residential. So if you put let's say you have a current range hood and it has -- and it was built for an incandescent light bulb and you can only buy let's say a replacement LED or you're going to sell one, if the heat that comes from let's say steam or just cooking will degrade the LED.

CHAIR HOCHSCHILD: I've had them in my hood for four or five years.

COMMISSIONER MCALLISTER: I'm in the same boat. They work great, they dim great.

MR. MESSNER: You can Google it or check with the light engineers there. They will -- high heat will degrade -- I mean that's not a like -- I'm not raising this as like a controversial CEC agrees with that and staff. It's just there's not a way to move forward, because of the requirements of light bulbs. And yet there's usually an appliance lamp exclusion for the P whatever 26 one, there's no appliance exclusion or high heat specialty exclusions in the others. And it's just this tug-of-war that's been existing.

CHAIR HOCHSCHILD: Okay. I mean, I get that. I guess I'm not sure the front of my range hood where these lamps are actually see very high heat even when I'm cooking, I guess so anyway.

MR. MESSNER: It could depend on the range hood. It could depend on the range hood, yeah but if they're in there that if they do have the high heat they will (indiscernible)

CHAIR HOCHSCHILD: Anyway so on all three of these issues and you've only talked about one, but we'll definitely -- I see Mike nodding back there -- we'll definitely focus on those with you and try to work them.

MR. MESSNER: Good. Thank you. And then on the portable air conditioner standards I was here before. And as a reminder you set an effective date that was a couple

years earlier than every other state in the country. And now is apparently too quick even for CEC, because the certification packets aren't even ready yet for product manufacturers to certify. And the effective date is February 2nd, so in a couple weeks. And there's not even a certification packet ready.

So it's those things that just makes it tough to comply when we said that was too early and we can't even -- the manufacturers ask me where the packet is, so that's the second one that's just frustrating now.

And third one, the last one which I was hoping to be here is the range hood directory and we're trying to work through the issues right now. As I was here before the Commission a couple years ago there's a monopoly given to an entity on a range hood directory. And I was told that there is an administrative path to approve an alternative option if that's the case. We are working to try to do that.

We were still working as early as this morning to try to do that, but we're in this potential Iron Triangle where I kind of think back to the steel monopoly. Is there where the steel monopoly back in (indiscernible) would have to approve their competitors. And we need to break through that, because if it were held to where the monopoly has to approve our lab in order to get approved they're not going

to approve a competing lab. And you're going to be stuck with a monopoly.

And this is kind of a do-loop (phonetic) that we need to get out of. I think there's a way forward. We feel there's a way forward. Hopefully CEC staff agrees there's a way forward. We need to work through that still more, but it's just right now you can't even get a range hood approved for a directory, because of the backlog. You don't even get your phone calls returned, because there's only one lab that's available. It's a five-month wait if you're lucky and that's if you get your phone calls returned.

And the due date to comply was January 1st and you can't even get things tested for six months, so we need some more lab capacity ASAP.

CHAIR HOCHSCHILD: Yeah, this one I think we can work through and yeah.

MR. MESSNER: So those are my three issues.

CHAIR HOCHSCHILD: Well, I very much appreciate you raising those, Mr. Messner. We always want to hear where there's concerns so please thank you for coming and sharing that.

MR. MESSNER: Sure.

CHAIR HOCHSCHILD: We'll follow up.

MR. MESSNER: Thanks guys.

CHAIR HOCHSCHILD: Thank you.

Let's move on to Item 18, discussion from Chief Counsel's Report?

MS. HOUCK: No Report.

CHAIR HOCHSCHILD: Okay. We're adjourned.

(The Business Meeting adjourned at 12:08 p.m.)

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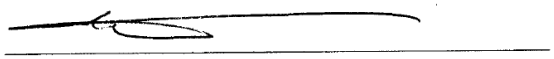

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