

## DOCKETED

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In the Matter of: )  
 ) 17-BUSMTG-01  
 *Business Meeting* )  
 )

## APPEARANCES

### Commissioners

Robert Weisenmiller, Chair  
Andrew McAllister  
Janea Scott  
David Hochschild

### Staff Present:

Rob Oglesby, Executive Director  
Kourtney Vaccaro, Chief Counsel  
Alana Mathews, Public Adviser's Office  
Cody Goldthrite, Secretariat

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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:

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P R O C E E D I N G S

APRIL 27, 2017 10:02 a.m.

CHAIRMAN WEISENMILLER: Good morning. Let's start the Business Meeting with the Pledge of Allegiance.

(Whereupon, the Pledge of Allegiance was recited in unison.)

CHAIRMAN WEISENMILLER: We're going to start the business meeting with a minute of silence for Jackie Pfannenstiel.

(Whereupon, a moment of silence was observed.)

CHAIRMAN WEISENMILLER: Okay, thanks. Commissioner?

COMMISSIONER HOCHSCHILD: Thank you, Mr. Chairman for that moment of silence and for sending the note out yesterday. I just wanted to say it's a huge loss to all of us at the Commission and to the State as well to Jackie Pfannenstiel's family. She was Chair of the Commission for, I think five years if I'm remembering correctly.

I can say I would not be in this job today were it not for her and I think the same may be true for Commissioner McAllister. We first met her over ten years ago on an Advisory Committee and she just exemplified the type of pragmatic idealism that I think that we sorely

1 need.

2           And the other point I want to make is just that  
3 there's very few women still in leadership positions in the  
4 energy world. And she was an inspiration, I think, to a  
5 whole generation of younger women coming in. And we were  
6 very fortunate, the Chair and Commissioner McAllister and  
7 I, were with her when she came to give a guest lecture here  
8 to staff a few months ago. And it was wonderful. She just  
9 shared her story and her experience at the Commission,  
10 going on to serve as Assistant Secretary for Installations  
11 at the Navy.

12           And she will be sorely missed, so I just wanted  
13 to share my thoughts. I don't know if others have --

14           COMMISSIONER MCALLISTER: Yeah, just really  
15 briefly. I mean she was obviously a very private person  
16 and so I don't want to speak for too long. But I certainly  
17 revere her as a person and obviously as a high functioning  
18 professional, who led the Commission incredibly capably and  
19 with an amazing vision. And her positive essence is just  
20 what really permeated everything she did.

21           On a personal note, she -- and my family's  
22 undergoing something that's always different with severe  
23 illness -- but when she was going through her up and down,  
24 she provided some emotional support that has really been  
25 valuable for us. So she was that kind of person and an

1     incredibly big loss and we'll all really miss her.

2                 COMMISSIONER SCOTT: I might just add that  
3     absolutely a wonderful inspirational woman, for so many of  
4     us to look up to. And I like what you said about the  
5     pragmatic idealism, because that's exactly right. And you  
6     know one of my favorite things about Jackie was also she's  
7     just totally down to earth. You could just sit and have a  
8     great conversation with her about anything, so she will  
9     absolutely be missed.

10                CHAIRMAN WEISENMILLER: Yeah, definitely. I sent  
11     out my note yesterday, and I'm sure the family will talk  
12     more at the service, so anyway let's move on to the  
13     Business Meeting.

14                In terms of the Business Meeting, Item 1a and  
15     Item 2 are being removed from the calendar. I think we  
16     have a disclosure? I think it's 7b, oh right now I can't  
17     find it. But let's go on to the Consent Calendar.

18                COMMISSIONER SCOTT: Move approval of the Consent  
19     Calendar.

20                COMMISSIONER MCALLISTER: Second.

21                CHAIRMAN WEISENMILLER: All those in favor?

22                (Ayes.)

23                CHAIRMAN WEISENMILLER: So this passes 4-0.  
24     Commissioner Douglas is not here, so just at this point  
25     leave it as absent as we go through the agenda items.

1               So let's go on to Item 3, Diversity Update?

2               MS. MATHEWS: Good morning Chair and  
3 Commissioners. I'm pleased to present as an informational  
4 item the 2016 Diversity Update, along with each Deputy  
5 Director or their chosen representative whose divisions  
6 have programs that are actively engaged to meet the Energy  
7 Commission's diversity commitment to broaden opportunities  
8 in clean energy funding, programs and policy. Next slide.

9               As you will recall, in 2015 the Energy Commission  
10 adopted the Diversity Resolution, which recognized that  
11 California's promised obsesses and innovations stem from  
12 the rich and diverse qualities and abilities of it's  
13 people. Accordingly, through this resolution, the Energy  
14 Commission formally committed to increased participation of  
15 diverse business enterprises in our funding programs, which  
16 includes minority owned, women owned, disabled veteran  
17 owned and LGBTQ-owned businesses. Next slide.

18              We also committed to increase the Energy  
19 Commission's program benefits to all Californians,  
20 including those in disadvantaged communities.  
21 Additionally, in recognizing the value and benefits in  
22 diversity of thought, talent and perspective we also  
23 committed to increase the diversity of the workforce and  
24 procurement opportunities to insure our energy planning and  
25 policy efforts reflect the rich diversity of our state.

1           This commitment was put into action by  
2   establishing the Diversity Working Group, which serves as a  
3   platform for each division to coordinate diversity efforts,  
4   share ideas and information and establish metrics for  
5   tracking and measuring our performance. Next slide.

6           The metrics for our performance are captures in  
7   three areas. Program funding opportunities, which looks at  
8   the funding amounts awarded to diverse business enterprises  
9   and the funding amounts awarded to projects that benefit  
10   disadvantaged communities. Number two, our outreach  
11   activities, how many outreach activities each division  
12   sponsored or attended. Third, program policy changes that  
13   benefit disadvantaged communities or low-income communities  
14   and that target inclusion of diverse entities or  
15   individuals.

16           Although some divisions may have set specific  
17   targets and goals, the reporting for this year establishes  
18   our initial baseline from which we can track progress and  
19   measure success moving forward. Accordingly, each  
20   division's 2016 Diversity Update today will present on  
21   their performance in the following areas. First, their  
22   program funding opportunities, where applicable; second,  
23   the outreach activities, where applicable; and then third,  
24   any program or policy changes, which have increased  
25   inclusion to benefit low-income or disadvantaged

1 communities.

2 We will now begin with our Energy Efficiency  
3 Division.

4 MR. ASHUKIAN: Good morning Commissioners, Chair.  
5 I'm Dave Ashukian, the Director of the Efficiency Division.  
6 And I'm here to talk about four programs that we currently  
7 provide funding for that are available to the disadvantaged  
8 communities.

9 Those are the Prop 39 Program, also known as the  
10 Clean Energy Jobs Act. The Bright Schools Program, which  
11 provides technical assistance to schools and local  
12 government, and also the ECAA Program, the Energy  
13 Conservation Assistance Account and for loans. And also  
14 finally the local government challenge, which is just about  
15 to be completed. Next slide.

16 So starting with the K-12 Prop 39 Program  
17 provides funding for approximately 2,000 LEAs. That  
18 program has its own criteria for disadvantaged schools,  
19 based on the amount of students that receive assistance.  
20 Our program has funded over or actually 63 percent of those  
21 schools are considered disadvantaged. Next slide, sorry.

22 To date, our program has funded approximately 639  
23 million in funding. About 70 percent of the total funding  
24 for Prop 39 has gone to those schools. Next slide.

25 In 2016, we've made a number of modifications to

1 the guidelines. And in 2016, we specifically made some  
2 modifications that essentially provide additional support  
3 for those disadvantaged schools to meet. That includes an  
4 adjustment of the savings to investment ratio. And also  
5 changing the way maintenance costs are valued. That has  
6 encouraged and increased the cost effectiveness for the  
7 schools in those disadvantaged communities. Next slide.

8           This is a graph showing the counties in which the  
9 LEAs have participated. It's virtually every county in  
10 California, except for one at this point. I know this map  
11 is a little bit dated, so there's two counties that we have  
12 not provided funding for. But in fact, by today it's  
13 actually just one county, Alpine County, that still doesn't  
14 have an application in yet. But we are working to get that  
15 done.

16           Again, these are not necessarily schools that --  
17 I mean every county has a number of schools and a number of  
18 districts. But we essentially we have provided funding in  
19 every county that has a disadvantaged school.

20           The next slide here shows that our Technical  
21 Assistance Program has provided funding. About 75 percent  
22 of the funding that has gone towards providing audits to  
23 schools and local government has gone to disadvantaged  
24 areas as well. So that is a significant portion of our  
25 technical support for the program.

1           Bright Schools basically provides that technical  
2   support of K-12, community colleges as well as county  
3   offices of education are included in that. This map shows  
4   the counties of participation in the Bright Schools  
5   program. Again, 114 Bright Schools disadvantaged LEAs have  
6   participated in 38 of the counties in California, most all  
7   of those in disadvantaged areas.

8           The next map is identification of our ECAA  
9   Program. This is a program that has been in operation  
10   since 1979. It virtually has covered almost all of the  
11   counties, again, that have disadvantaged communities.  
12   You'll see here the colored areas of the Central Valley  
13   primarily are considered the disadvantaged communities,  
14   using the CalEnviroScreen 3.0. And I just want to note  
15   that this program has provided almost 400 million in loans  
16   for projects. I'll also note that because of the funds  
17   that go out to a loan get repaid, then those funds then get  
18   re-circulated back into additional funds.

19           For every dollar that the ECAA program has  
20   invested to date, we have provided almost three dollars in  
21   actual loans to programs and that's just to date. It will  
22   continue on, hopefully in perpetuity, as we continue to  
23   make loans with that fund.

24           Our last slide is regarding the local government  
25   challenge. This is a re-purposing or a re-funding of the



1 remaining ARRA Program. We've got 10.2 million available  
2 that hadn't been spent and we created a new program to  
3 provide support for local government to do things that  
4 would support our goals of redoubling efficiency and the SB  
5 350 goals in general.

6 We have received a number of grants. The grants  
7 were evaluated. The grants were given additional bonus  
8 points for activities that benefit disadvantaged  
9 communities. And the Notice of Award went out about two  
10 weeks ago. There's 13 awards that will be considered in  
11 the June business meeting and 7 of those awards and about  
12 76 percent of the funding from that 10 million is going to  
13 projects that support disadvantaged communities.

14 And that's all I have. Oh, the last slide is the  
15 graph that shows where those projects are located and  
16 that's it. Thank you.

17 MS. O'HAGAN: Good morning. My name is Molly  
18 O'Hagan and I work in the Energy Research and Development  
19 Division.

20 For California to make the leap in the status  
21 quo, to achieving climate and energy goals at the lowest  
22 cost, we need energy innovation. Rigorous, public and  
23 impartial research and development investments,  
24 strategically diversify California's energy portfolio and  
25 move innovations through the pipeline from concept to

1 market. Next slide, please.

2           The Energy Commission administers several R&D  
3 programs that drive innovation and advanced science and  
4 technology in the fields of energy efficiency, renewable  
5 energy, and advanced clean generation, energy related  
6 environmental protection, energy transmission and  
7 distribution and transportation.

8           The Electric Program Investment Charge, or EPIC  
9 Program invests improvements in the state's electricity  
10 system, although natural gas research development and  
11 demonstration programs invest in improvements to  
12 California's natural gas system. Next slide.

13           To address energy-related challenges and  
14 opportunities in disadvantaged communities in December of  
15 2016, the Energy Commission adopted a target for 25 percent  
16 of EPIC technology demonstration and deployment funding to  
17 be allocated to projects sited in disadvantaged communities  
18 under Senate Bill 350.

19           In 2016, 35.7 percent of awards for TD & D  
20 projects went to projects that included at least one site  
21 in a disadvantaged community. Additionally seven projects,  
22 totaling ten million were awarded to develop innovative  
23 approaches to plan, permit and finance advanced energy  
24 communities in disadvantaged communities. And in 2016, the  
25 EPIC Program launched the CalSEED Initiative, which will

1 provide funding and resources for early-stage innovations  
2 And clean energy entrepreneurs, with 4 million dedicated to  
3 helping entrepreneurs from disadvantaged communities and  
4 under-represented groups. And out of the 90 California-  
5 based active and completed natural gas projects in the  
6 2015-2016 fiscal year, 25 had at least one site located  
7 within a disadvantaged community. Next slide please.

8 I want to bring your attention to one of the  
9 advanced energy communities being designed for Lancaster,  
10 California. This project is one of seven slated for  
11 disadvantaged communities across the state totaling 10  
12 million that is envisioning new possibilities for  
13 California's 21st century electricity system and what role  
14 communities will play in its creation and implementation.

15 This project is helping the City of Lancaster in  
16 our goal to be the first ZNE city. And we'll be developing  
17 a municipal finance model and policy framework for new  
18 residential ZNE housing, with a ZNE microgrid, a seven  
19 megawatt community solar project and four megawatts of  
20 energy storage. This project is working to establish a  
21 100-unit affordable housing complex. It's a cornerstone of  
22 their city's pursuit of ZNE. Next slide, please.

23 The City of Lancaster is also home to a project  
24 working to develop cost effective replicable packages of  
25 energy efficiency measures that can be used for deep energy

1 efficiency retrofits of low-income multifamily properties.  
2 Because multifamily housing is a difficult market segment  
3 to address, this project will develop retrofit packages for  
4 low-income, multifamily apartments with different  
5 magnitudes of energy savings, ranging from about 47 percent  
6 improvement from baseline conditions to at least meet the  
7 2008 Title 24 Energy Efficiency Standards to nearly 70  
8 percent for Zero Net Energy capabilities. These packages  
9 will be installed, and demonstrated in 30 apartment units,  
10 at the Beachwood multifamily complex in Lancaster,  
11 California, owned by project partner LINC. And the project  
12 may provide a replicable model to other low-income  
13 multifamily properties, while providing benefits to both  
14 building occupants and owners. Next slide, please.

15           In 2016, Energy Commission staff implemented a  
16 voluntary survey for EPIC funding recipients to better  
17 track participation of self-reported California-based  
18 entities, women, minority, LGBT, disabled veteran owned and  
19 small businesses.

20           We received 95 completed surveys in 2016, which  
21 identified the following: 94 projects of the responses  
22 received included certified California-based entities, of  
23 those 93 were the prime. Furthermore, as either the prime  
24 or subcontractor, 48 projects include a small business, 16  
25 include a women-owned business and 12 include a minority-

1 owned business. One project includes an LGBT-owned  
2 business as a subcontractor and six included disabled  
3 veteran-owned business as a subcontractor. Next slide,  
4 please.

5 In 2016, Energy Research and Development staff  
6 updated the Diversity Outreach Plan in the spirit of AB  
7 865. Some key highlights include the following outreach  
8 activities:

9 The enhancement of our LinkedIn group page,  
10 California Energy Commission's research and development  
11 networking hub, which provides a user-driven platform to  
12 help potential applicants connect and partner on proposals.  
13 Sub groups based on individual funding opportunities, are  
14 helping establish a pathway for new or small firms to  
15 approach our funding opportunities as a possible  
16 subcontractor. They're not ready or interested in applying  
17 as a prime and it gives all potential applicants an  
18 opportunity for networking. As of the end of 2016, we had  
19 nearly 1,200 numbers and dozens of sub groups. Next slide.

20 To broaden our outreach, ERDD staff also attended  
21 and distributed material at some of the state's key  
22 expositions and events across the state, from the  
23 California League of Food Processers Expo and CPUC Small  
24 Business Expo to an event hosted by the Disabled Veterans  
25 Business Alliance on turning contact into contracts. And

1 Greenlining Institute's 23rd annual economic summit on  
2 reinventing California, Solutions for the New Majority.  
3 Next slide, please.

4           Additionally staff continue to meet with leaders  
5 in California's communities including in July, when staff  
6 traveled to the Bay Area to meet with numerous community  
7 and advocacy groups, including the Asian Pacific  
8 Environmental Network, the Greenlining Institute, the  
9 Brightline Defense Council and the Minority Business  
10 Development Association.

11           And finally, on December 1st staff hosted the  
12 2016 EPIC Symposium, which was attended by more than 50  
13 women-owned businesses from throughout the state, as well  
14 as businesses owned people from the LGBT community,  
15 disabled veterans and minority business owners and almost  
16 100 representatives from small businesses.

17           This symposium brought together leaders from  
18 across the state to discuss increasing California's clean  
19 energy future, and had a dedicated session that explored  
20 bringing emerging energy efficiency technologies to low-  
21 income or disadvantaged communities. And how these  
22 projects are helping communities and their occupants lower  
23 energy costs and provide other benefits by building  
24 improvements and access to education and training.

25           Some of these meetings, as well as our more

1 recent workshops and investing in disadvantaged communities  
2 for the third triennial EPIC Investment Plan, help us  
3 better understand the ability of EPIC and our Natural Gas  
4 Program to advance the science and bring increased benefits  
5 to California's communities equitably and efficiently in  
6 line with Senate Bill 350. We look forward to continuing  
7 these efforts in 2017 and beyond. Thank you.

8 MR. BUTLER: Good morning, Chair and  
9 Commissioners. My name is John Butler. I'm the Manager of  
10 the Alternative and Renewable Fuel and Vehicle Technology  
11 Program or ARFVTP within the Fuels and Transportation  
12 Division. Next slide, please.

13 ARFVTP provides funding for alternative fuel and  
14 advanced vehicle technology projects that reduce greenhouse  
15 gas emissions, displace petroleum usage, and improve air  
16 quality. Last year, the program administered ten funding  
17 solicitations resulting in \$140 million for projects within  
18 California. Seven of these solicitations included scoring  
19 criteria preferences for projects providing benefits to  
20 disadvantaged communities. As a result, more than 76  
21 million, or 54 percent was awarded to projects located in  
22 or benefiting disadvantaged communities. Next slide,  
23 please.

24 Of this amount 36 million was awarded to  
25 sustainable freight and vehicle technology projects at

1 seaports. The vehicles in supporting intelligent  
2 transportation system technologies being deployed at these  
3 facilities are essential to reducing the disproportionate  
4 amount of air pollution, impacting the disadvantaged  
5 communities that surround California's major freight  
6 distribution regions. The near zero and zero emission  
7 technologies being deployed at the ports will allow  
8 continued growth of the economically important freight  
9 sector, while reducing any negative environmental impacts  
10 on nearby residents. Next slide, please.

11           Approximately \$37 million was offered to  
12 incentivize the in-state production of bio-fuels. Of this  
13 amount, more than 34 million or nearly 92 percent of the  
14 funds offered were awarded for facilities located in  
15 disadvantaged communities. These ten projects will produce  
16 nearly 38 million gallons per year in very low carbon bio-  
17 fuels and reduce greenhouse gas emissions by over 446,000  
18 metric tons per year.

19           Additionally, these projects are estimated to  
20 create at least 75 jobs. Next slide, please.

21           Over \$6.1 million was awarded to clean fueling  
22 infrastructure projects located in disadvantaged  
23 communities. These projects include 36 direct current fast  
24 chargers located along major California highway corridors  
25 throughout the Central Valley and the counties of Solano,



1 San Bernardino and Riverside. These publically accessible  
2 chargers will support electric vehicles traveling in these  
3 communities.

4 Also a light-duty vehicle hydrogen refueling  
5 station is located in Santa Nella, California, which will  
6 help bridge the Northern and Southern California hydrogen  
7 refueling network for fuel cell electric vehicles.

8 And the most significant direct impact to  
9 localized health benefits and air quality is the  
10 installation of compressed natural gas fueling stations for  
11 school buses at Exeter, Lemoore and Kings Canyon school  
12 districts, located in the Central Valley. The  
13 infrastructure support for these vehicles are especially  
14 important to reduce emissions in financially-challenged  
15 areas that are not yet able to procure the emerging zero  
16 emissions options. Next slide, please.

17 One project I would like to specially highlight  
18 for 2016 is with the City of Gardena. Through a \$2.7  
19 million grant from the ARFVTP the City refurbished and  
20 repowered five old gasoline electric hybrid buses to fully  
21 electric. The City subcontracted with Complete Coach Works  
22 to perform the work at their assembly plant in Riverside,  
23 California. Complete Coach Works employs a diverse work  
24 force. Out of 334 employees, 65 percent are from various  
25 minority groups. Complete Coach Works provides excellent

1 training programs to these employees, equipping them with  
2 the skills needed to perform this work. This project  
3 created 20 jobs.

4 The newly refurbished buses will operate on  
5 routes serving economically disadvantaged communities. The  
6 annual greenhouse gas emission reductions are estimated at  
7 over 106 metric tons of carbon dioxide per year. Next  
8 slide, please.

9 The Fuels and Transportation Division often joins  
10 forces with the Energy Commissions research and development  
11 team on a host of opportunities. Outreach is one of them.  
12 An example of such a venture was a joint trip to the Bay  
13 Area and Silicon Valley to meet with environmental justice  
14 organizations to hear concerns and suggestions for more  
15 effective community engagement.

16 The team also met with various business  
17 organizations to highlight funding opportunities and  
18 provide information and materials for them to share with  
19 community and business members.

20 Fuels and Transportation Division staff is also  
21 participating in a disadvantaged community outreach working  
22 group facilitated by the Strategic Growth Council. The  
23 goal of this working group is to share outreach methods and  
24 plans, to find opportunities where community engagement can  
25 be combined among the various agencies, and create a

1 community outreach model where multiple funding programs  
2 and opportunities can be highlighted at a single event.

3 Staff also participated in several career fairs  
4 throughout the state, highlighting the work of the Fuels  
5 and Transportation Division, the ARFVTP, and the Energy  
6 Commission as a whole. Next slide, please.

7 Finally, per Health and Safety Code 44272.5(b),  
8 ARFVTP has an Advisory Committee member seat that is  
9 allocated to a community-based justice and public health  
10 organization. We proudly recognize that since May of 2015,  
11 Sekita Grant with the Greenlining Institute has represented  
12 that seat. Her participation has added insight towards  
13 addressing racial and economic justice.

14 That concludes my segment of this update. Thank  
15 you.

16 MR. BOHAN: Good morning, Drew Bohan, Interim  
17 Director of the Siting, Transmission and Environmental  
18 Protection Division. And our core function is -- next  
19 slide, please -- is to evaluate applications for power  
20 plants in the State of California, as you all know. And one  
21 of the key measurements of success is the success we have  
22 in reaching to the populations most directly impacted by  
23 these facilities in their communities. And we take that  
24 obligation very seriously. Next slide, please.

25 We looked at five things. You're all well aware

1 of these, but I just wanted to run through safety and  
2 reliability are our top concerns in this Division. These  
3 power plants need to be built properly and then operated  
4 properly. And we are stewards of that process throughout  
5 the life of the power plant, which can be decades.

6 We make sure that all power plants comply with  
7 laws, ordinances, regulations and standards. Or, in cases  
8 where we do an override, we make sure that other standards  
9 are met. We look at all the environmental consequences of  
10 these projects and the cumulative impacts taking into  
11 consideration what other facilities are in the area, and  
12 those types of concerns. In addition, we look at low-  
13 income populations and minority populations, and the  
14 impacts that may be disproportionate in those communities,  
15 to those populations. Next slide, please.

16 I want to point out that the first thing we do  
17 when an application comes in, one of the very first things  
18 is to meet with Alana and her team. And I want to just  
19 give kudos to Alana, individually, and to her team, because  
20 they do -- I've been observing it more in this role -- just  
21 a fantastic job or being welcoming and inviting to members  
22 of the public that would maybe otherwise have a difficult  
23 time participating.

24 We then collaborate on how best to do outreach in  
25 the community given the variables that are present in each

1 place, because every place is different. By law we're  
2 required to notify everybody that's a property owner within  
3 a 1,000 feet of a facility, a potential site. And within  
4 500 feet of a transmission extension from a power plant, so  
5 to the extent that's a part of a project, we do that as  
6 well. We contact local officials, our tribal counterparts,  
7 community groups. And then also try to identify EJ  
8 communities in the area. We use US Census data,  
9 CalEnviroScreen and other tools.

10 And then finally, we identify populations that  
11 self-identify through U.S. Census data as "speaking less  
12 than very well." And when we identify significant  
13 populations, we then make sure we do appropriate outreach  
14 there. Next slide.

15 Here's an example of a recent project, the  
16 Stanton Energy Project, that filed an AFC with us recently.  
17 And we just had a public outreach session a couple of weeks  
18 ago. And at the front end, we identified that there were  
19 indeed EJ populations and that informed our strategy for  
20 doing outreach. We also identified that there were  
21 significant numbers of Korean, Spanish and Vietnamese  
22 language speakers who identified as not speaking English as  
23 well and therefore, we published notices in those  
24 languages. Next slide.

25 This is just an example of what the notices look

1 like when published in different languages, in this case  
2 Vietnamese on the left and Korean on the right. Next  
3 slide.

4 We also again paid special attention to our  
5 tribal counterparts. And we're informed by four basic  
6 things. The first is Governor Brown's Executive Order from  
7 2011 that established a Governor's Office Tribal Adviser  
8 and directed state agencies to come up with tribal  
9 consultation policies.

10 We also look at 2014's AB 52, which adjusted CEQA  
11 and amended it to require that tribal and cultural  
12 resources are a part of the CEQA evaluation and it also  
13 identified protocols for how one goes about making those  
14 evaluations. The Natural Resources Agencies adopted a  
15 tribal consultation policy and shortly thereafter, the  
16 California Energy Commission did as well. And next and  
17 final slide please.

18 This just gives an example of what we've done in  
19 this area. So for the four power plant projects listed  
20 there at the first sub-bullet: Alamitos, Mission Rock,  
21 Pomona and Puente, we did 203 tribal consultations, which  
22 were letters and phone calls and emails. And as a result  
23 of that, we ended up having five face-to-face meetings with  
24 24 different tribes being represented. And another example  
25 was consultations on three plans that you're all aware of:

1 the San Joaquin Solar Least Conflict Study, RETI 2.0, and  
2 our offshore wind planning.

3 So that summarizes the activities of the Siting  
4 Division. I thank you for your time.

5 MS. SMITH: Good morning, Commissioners.  
6 Courtney Smith, Deputy Director of the Renewable Energy  
7 Division.

8 One of the programs that the Renewable Energy  
9 Division administers is the New Solar Home Partnership  
10 Program, which as you know, incentivizes homebuilders to  
11 install solar energy systems on new residences, which  
12 includes both homes and also multifamily buildings.

13 Since 2008, the NSHP Program has helped with the  
14 installation of close to 30,000 new solar systems in  
15 California, with a combined generation capacity of over 98  
16 megawatts. In order to ensure that the benefits of this  
17 program really reach low-income Californians the NSHP  
18 Program provides a higher incentive level for new housing  
19 developments that qualify as affordable housing.

20 In 2016, the NSHP Program provided approximately  
21 \$2.58 million in incentives that supported the installation  
22 of solar on 22 different affordable housing projects across  
23 the state. These affordable housing incentives supported  
24 the installation of 1.6 megawatts of new solar capacity,  
25 which helped to reduce the electricity bills for over

1 400 affordable residences, either through net metering  
2 agreement or more commonly through virtual net metering  
3 agreements. These affordable housing incentives accounted  
4 for 12 percent of the total incentives paid through the  
5 program in 2016.

6           Additionally, in 2016, the NSHP staff worked  
7 closely with stakeholders to identify ways to encourage  
8 more participation with our affordable housing developers.  
9 We also considered ways to provide additional support for  
10 affordable housing projects specifically located within  
11 disadvantaged communities. These changes we identified  
12 were all approved with the adoption of the NSHP Guidebook  
13 10th Edition back at the March, 2017 business meeting.

14           And these changes include increasing the  
15 incentive rates for affordable housing projects and ending  
16 the incentive rate decline at a higher step than the  
17 original program design extending the higher affordable  
18 housing incentive level to also include common areas.

19           We also created an additional bonus incentive for  
20 affordable housing projects that are located in designated  
21 disadvantaged communities.

22           And lastly we restored the ability for non-tax  
23 exempt affordable housing developers to receive the higher  
24 affordable housing rate, because based on stakeholder  
25 feedback we found that this requirement was inadvertently



1 preventing many affordable housing developers with more  
2 complex financial structures from participating in the  
3 program.

4           So we expect that these recent changes will  
5 increase the affordable housing participation in the NSHP  
6 Program and increase the benefits that this program brings  
7 to these communities. Staff plans to continue to monitor  
8 participation rates by evaluating new program reservation  
9 applications. And also to continue working with solar  
10 installers and affordable housing developers to identify  
11 additional opportunities to increase program participation.

12           Ultimately, our goal is really to expand the role  
13 that the NSHP Program plays in including all Californians  
14 in our transition to a clean energy economy.

15           MR. COOK: Good morning, Commissioners. Rob Cook  
16 and the Deputy Director over Administration for the  
17 Commission. I wanted to discuss with you three things  
18 under my area.

19           First of all, is our small business and disabled  
20 veteran business objectives and how we perform in those  
21 areas, also our recruitment and outreach efforts for  
22 hiring, and then finally staff diversity.

23           All state agencies have stated objectives of  
24 obtaining goods and services from 3 percent of disabled  
25 veteran business enterprises and a 25 percent objective for

1 small businesses. I can tell you this is something that we  
2 keep an eye on and all the time. It's top of mind for our  
3 contracts, grants and loans staff as well as our business  
4 services staff. Rachel's team makes sure that we always  
5 have participation goals in every contract that's possible  
6 here. And Sherryl Hancock and Teresa Pino try mightily to  
7 make sure that we procure goods from disabled veteran  
8 business, whenever possible and ideally disabled veteran  
9 businesses that are also small businesses, so that we  
10 actually get double participation. And we have to work at  
11 this, but we monitor this on a quarterly basis and try to  
12 do everything we can to meet our objectives here. Next  
13 slide.

14           The next thing is this is this was a really fun  
15 project. We did an outreach project with UC Merced. And  
16 I'd like to -- this was back in February -- we started  
17 actually in November. And went on a site visit and had a  
18 great interaction with them and came back to do an outreach  
19 event with their students in February.

20           And I'd like to draw your attention to a couple  
21 of things on this particular slide. This is the  
22 demographic profile of the students at UC Merced. They're  
23 overwhelmingly Californians, almost all Californians. Two,  
24 they are geographically dispersed, they are from every part  
25 of California. They are culturally diverse. And really

1 notably and caught our attention, 71 percent of these  
2 students are the first member of their family ever to  
3 attend college and that makes their background a little bit  
4 different. And some of the interaction we've had with  
5 their administrators, some of the supports that they need  
6 to provide to help those -- I'll call them kids, because  
7 they're contemporaries with my kids -- but succeed, are  
8 really cool what they're doing there. And I'd say this is  
9 a great partnership that we wish to just encourage and help  
10 to flourish. And as you can tell, they also generally need  
11 financial support in order to attend this school. Next  
12 slide.

13           We went down in February. Every Division was  
14 represented at this event, and I will tell you my objective  
15 before we got there, and before things came together, and  
16 of course you can never quite know what you're going to run  
17 into until things happen in something like this. But I was  
18 hoping to have 40 students attend. I would have considered  
19 that a great success. I would have hoped that most of them  
20 would have stayed through at least part of our presentation  
21 and that we would have 50 percent or more of their  
22 attention during that whole thing.

23           The results were very, very different. Those  
24 kids were engaged. We had standing room only, three deep  
25 at the back. As you can see, the numbers there, we brought

1 really relevant impactful information. We had relatable  
2 staff members that all of these kids could see themselves  
3 being in a few years. And we made sure, as many of us who  
4 participate in state government and the Energy Commission  
5 specifically -- the great value that the State of  
6 California brings is our ability to impact things. It's  
7 huge and it's very different than what's available  
8 frequently in a corporate job. And those kids got it.

9           And one of the things I'll draw your attention  
10 that is not in that photo on the right, you will not see a  
11 kid looking at a screen of some others, other than the one  
12 we had up on the wall. We had their attention for an hour  
13 and a half. And as I said, it was a rewarding experience,  
14 from that standpoint. Next slide.

15           Then the follow-up, what do you do with that?  
16 This is something that we initiated. We have for years had  
17 a fairly aggressive schedule of going to career fairs at  
18 various colleges and universities throughout California.  
19 One of the things though that one of our past practices  
20 was, we'd set up our energy analyst exam here at  
21 headquarters on Saturday morning, periodically.

22           But who's least likely to make that event? Some  
23 kid of modest means, who's far away, who does not have a  
24 car, cannot get here in some other means. So what we  
25 started in February, we started taking our exam on the

1 road. The first effort was a real easy one, we took it  
2 over to Sac State. But in our typical exams it's common to  
3 have 50 percent drop-off, between the number of people who  
4 sign up for the exam and the number of people who take it,  
5 for whatever reason. In this case, our first effort out,  
6 100 percent participation.

7 We then took it to Fresno State, a location  
8 that's going to be hard for students to get here easily and  
9 we had great participation there. And then as a follow-up  
10 to our recruiting event at UC Merced, we took that exam to  
11 UC Merced, and again had great participation.

12 So we intend to extend this. There are timing  
13 issues with this. The seniors who are graduating within  
14 the next six months have access to the exam and can take  
15 it. And so we're going to have to time this with the  
16 calendar of the school year, but we intend to extend this  
17 program. Next slide.

18 I want to touch on, actually one of Alana's  
19 programs is in this, is the Diversity Career Fair. It was  
20 initiated last year and the second annual event went off on  
21 March 30th and was very attended, very well attended. Last  
22 slide.

23 One issue that we've had, here at the Commission  
24 is being able to measure the diversity of our own staff.  
25 Our ability to do that is voluntary and has very low

1 participation rates in that. And as a consequence, the  
2 data that we have is really not statistically -- you cannot  
3 draw any conclusions from the reporting that we do have.  
4 Something that CalHR is kicking off for the month of May  
5 and it will be open for the month of May, is a statewide  
6 employee survey. It will be voluntary. And it will  
7 capture those three areas: race and ethnicity choice,  
8 veteran status and disability awareness.

9           And we will also be able to see the level of  
10 participation our staff have in that survey as we go  
11 through the month. So we have the opportunity to encourage  
12 more and more of our staff to actually take that survey, so  
13 we can get the high level statistics back, as a Department.  
14 And that will be actually a great baseline got measurement.  
15 And that's all I have.

16           MS. MATHEWS: Lastly, what would be worth  
17 mentioning is that the commitment that we have to diversity  
18 has also carried over in the work that we completed last  
19 year with the Senate Bill 350 Low-Income Barrier Study.  
20 Where we had seven community meetings throughout the state  
21 that included tribal communities, Spanish-speaking  
22 communities, Asian-speaking communities and it looked  
23 throughout the geographical diversity of the state. Again,  
24 it's captured in that first set of bullet points.

25           And then lastly, as a follow-up sort of to what

1 Rob just mentioned that commitment carries through with the  
2 implementation workshops and the 2017 IEPR has a dedicated  
3 topic to looking at how our energy policy can benefit  
4 disadvantaged communities through IRPs, the setting of our  
5 2030 GHG goals, and also our region of great establishment.

6 This concludes our report and we're available if  
7 you have any questions.

8 CHAIRMAN WEISENMILLER: Thank you. I think  
9 there's some public comments first. Let's start with the  
10 public comment and then I'll transition over to the  
11 Commissioners.

12 The Brownstone representative, we'll start with  
13 people in the room and then we'll transition to folks on  
14 the line.

15 MS. TELLECHEA: Can you hear me? There we go.  
16 Hi, good morning. Thank you to the Board Advisers, staff  
17 and attendees. I'm a small minority-owned business. I  
18 represent large primes, tech companies, a couple of school  
19 districts, and a few disadvantaged companies. I've had the  
20 pleasure of participating, through your program, with  
21 Ms. Mathews.

22 I'm currently helping to facilitate accelerated  
23 growth workshops with USDOT. And the information that your  
24 Commission has been able to provide to these small  
25 businesses allowed them to see that there is access,

1 because for them access is success and so it has been very  
2 important to hear from you. And actually I did meet some  
3 of the students that met you when you went to UC Merced.  
4 And the fact that you're doing this is huge for this small  
5 community. You validate that they are important to the  
6 economic growth of their community.

7 And the other thing too is the information,  
8 there's a lot of myths out there on how do to business with  
9 the state. And we did have other state agencies that came,  
10 but the only one that really provided the access and  
11 availability was Ms. Mathew's staff, so I want to thank you  
12 for that and that's why I'm here. Thank you.

13 CHAIRMAN WEISENMILLER: Thanks. Thanks for being  
14 here.

15 Nidaan Systems, Inc., all right, Goel? Oh, okay,  
16 sorry.

17 UNIDENTIFIED SPEAKER: Yeah, Ms. Goel is from San  
18 Jose and she got caught up in traffic. But if it's okay, I  
19 can read her note to you?

20 CHAIRMAN WEISENMILLER: Oh sure.

21 UNIDENTIFIED SPEAKER: "Hello Energy Commission  
22 Board Members. My name is Jayati Goel. And I'm the coo-  
23 founder of Nidaan Systems in San Jose, a boutique software  
24 development and services consulting firm, based in San  
25 Jose. I'm unable to present in person to convey my



1 appreciation for the outreach efforts by Alana Mathews,  
2 Public Adviser of California Energy Commission.

3 "I recently attended the multi-week Small  
4 Business Development Workshop organized by the USDOT in  
5 Sacramento, where Alana was one of the featured speakers.  
6 I really appreciated her taking the time out to meet small,  
7 diverse and disadvantaged businesses like ours and help us  
8 be successful in the complex world of state contracting.

9 "The part I most liked about the presentation was  
10 how to partake in funding opportunities by the Energy  
11 Commission. I do plan on meeting with Alana, one-on-one,  
12 and hope to benefit from these programs. It will make a  
13 pivotal difference in our company's ability if we are able  
14 to secure this funding. Looking forward to working with  
15 the California Energy Commission. Thank you."

16 CHAIRMAN WEISENMILLER: Thank you. Thanks for  
17 reading that in.

18 Above All Consulting, Inc.?

19 MS. LANGENSIEPEN: Good morning. My name is Rose  
20 Langensiepen and I am the Chief Executive Officer of Above  
21 All Consulting. We are a certified micro business with the  
22 State of California, and also a woman owned business.  
23 Above All also has an approved CMAS for executive placement  
24 as well.

25 Without a doubt we are a women owned business

1 that has a need for small business outreach program such as  
2 yours. Without a state or local level outreach program,  
3 our voices remain unheard and the struggle continues as  
4 small businesses work to fight towards fairness and  
5 inclusion. Yes, we are well aware of the many task forces  
6 that were established to ensure that small businesses'  
7 participation, however let's be real here. How close do  
8 they get to one of us?

9           We need outreach programs such as yours that will  
10 not only reach the small businesses, but create  
11 partnerships with other organizations and agencies that are  
12 already in executed programs and workshops to assist the  
13 small businesses. For example, currently we have about 20  
14 small business owners in an eight-week business development  
15 class. This is being facilitated by Tanya Mott (phonetic)  
16 of the U.S. Department of Transportation.

17           One of the highlights of our class is that we  
18 have influential guest speakers that come in and present  
19 success-driven information from lending to bonding, to the  
20 fundamentals of government procurements and programs.  
21 Ms. Alana Mathews was one of our guest speakers at our  
22 workshop, not too long ago. We got a chance to learn about  
23 the California Energy Commission, its diversity program,  
24 and the proposed diversity task force. I thought to myself  
25 "Huh, now we're talking. This is what we need on a local

1 and statewide level. We have a real person, who will be  
2 able to hear us. And not only that, her Department is  
3 proposing a diversity task force that could help monitor,  
4 govern and ensure disadvantaged small business  
5 participation. Yes!"

6 Hence, here we are and here I am. And this is  
7 how it works and this is what we need. Will you please  
8 reinforce small business utilization and strengthen  
9 opportunities, practices and policies.

10 While I recognize that AB 65 authorizes the  
11 Energy Commission to establish a diversity task force, I  
12 must say that I also realize the potential chances of  
13 governance may only be in the energy industry. But via  
14 agency and department collaboration, this leadership and  
15 program can be replicated, so that we can truly level the  
16 playing field. Will you please continue to be the change  
17 that we need?

18 So on behalf of all the small businesses we want  
19 to thank you, Alana, and the California Energy Commission,  
20 for your vision and your continued support to level the  
21 playing fields for our disadvantaged small businesses.  
22 Thank you for your time.

23 CHAIRMAN WEISENMILLER: Thanks. Thanks for being  
24 here.

25 MS. LANGENSIEPEN: Thank you.

1           CHAIRMAN WEISENMILLER:  Anyone else in the room,  
2 anyone on the line?

3           (No audible response.)

4           Let's transition to the Commissioners,  
5 Commissioner Scott do you want to start?

6           COMMISSIONER SCOTT:  I'm just delighted that we  
7 have this item on our agenda.  It's fantastic to hear what  
8 all of the divisions are doing.  I'm relatively up to speed  
9 on what the Fuels and Transportation Division has been  
10 doing, but to hear across the Commission what's been going  
11 on, I think is fantastic.

12           I want to thank everyone so much for their great  
13 work in figuring out how to make this part of the ethos of  
14 the Energy Commission.  It's important and I feel like our  
15 teams have really embraced it and I want to -- yeah, I mean  
16 we can't underscore the importance of this effort and  
17 continuing to work on it, continuing to make it successful,  
18 continuing to outreach.

19           I love the story about the students at UC Merced,  
20 that's fantastic.  Taking the test on the road to students,  
21 so that they have the opportunity to come and work at the  
22 Energy Commission, or at least have the opportunity to take  
23 the test that allows them to get in the door.  I'm just  
24 really impressed with so many of the details that we went  
25 through this morning.

1                   COMMISSIONER MCALLISTER: Yeah, I mean I echo all  
2 of that. And it's just so clear that if we get down the  
3 road and we're ten years away, we're in 2030, 2050 and we  
4 haven't really involved all of us among us, including the  
5 low-income disadvantaged communities, the full diversity of  
6 our state -- and let's just be clear, we have a  
7 ridiculously diverse state and that is a good thing, right?  
8 We are stronger for that diversity -- and if they're not  
9 here at the Commission and other state agencies working,  
10 and if we're not out there in the communities relating to  
11 them as their equals and peers and colleagues, then we will  
12 have failed. I mean, that's just the way it is.

13                   So I think, again we're in California, so we are  
14 in a great position to reinforce these values that we hope  
15 to be true. And this effort is a real fundamental part of  
16 that and I think Alana is leading it very, very capably and  
17 is showing results. I mean this is about people and this  
18 is about inclusion.

19                   I did hear from Dan Feitelberg over at UC Merced,  
20 and he was ecstatic about the impact and just the reception  
21 that you guys got. And then we had a real feel-good moment  
22 there that, "Wow! I think we might have found something  
23 that's going to work and that we can really build on." So  
24 I want to just thank Alana, the team, all the Division  
25 Chiefs and the staffs that have been working on this.

1           And 350 provides a great home, I think, for  
2 making sure that this covers our long-term goals, which are  
3 focused on climate. So that's all very appropriate and I  
4 think a great foundation to keep building on. So thanks.

5           COMMISSIONER HOCHSCHILD: So let me thank Alana  
6 and Commissioner Scott and the Chair for being so focused  
7 and diligent on this issue. And Rob Cook, I really  
8 appreciate you making the effort to go out.

9           I do think the Energy Commission needs to look  
10 like the State of California, in terms of makeup of our  
11 staff. And a lot of that is a challenge, because we're  
12 here in Sacramento, we're a statewide agency, but 100  
13 percent of our staff are here. And so how do we make it  
14 accessible to folks who are not in Sacramento and make the  
15 process as accessible and friction free as it can possibly  
16 be? I really want to thank you.

17           I also just want to plant -- we're, at the  
18 Commissioner level, having great success with these summer  
19 fellows. A very diverse group coming again this summer, a  
20 couple from Stanford, and they've been fabulous. And these  
21 youth outreach, I think a lot of these can be very career  
22 changing experiences to come work for us for the summer and  
23 already seeing some great results from the folks who were  
24 here the last two summers ending up now in state service,  
25 so we're doing our part there as well. But thanks

1 particularly to Commissioner Scott for being so diligent on  
2 this.

3 CHAIRMAN WEISENMILLER: Great.

4 Also I want to thank Alana and the staff, and  
5 also reach out to Kevin for helping on this too.

6 But obviously it's very important for us to make  
7 sure that all Californians participate in our programs and  
8 that no one's left behind in the clean tech transformation.  
9 And similarly obviously to make sure that we have a  
10 diversity within our own walls here. And so I think we  
11 started out with a simple pledge, a commitment and then  
12 expanded at that commitment and the Commission as a whole  
13 adopted a policy.

14 But obviously, you've got to make sure you can  
15 translate the words into action. And so I think part of  
16 what today is doing is -- and I think this will evolve over  
17 time -- is to go from the commitments to the actions and  
18 tracking. I mean, I think the reality is if something's  
19 important, you track it. And if you're doing well, you  
20 keep trying to do better. If you're not doing well, you  
21 try to up the game a little bit.

22 So I think this was a good chance to see where  
23 we're going, I think so hopefully looking forward at future  
24 annual discussions. We're going to see more and more  
25 progress. And again I think that's going to forward. So

1 again, thank everyone for their hard work on this. Thanks.

2 Let's go on to Item 4, Energy Program Investment  
3 Charge Annual Report.

4 MS. GOULD: Okay. Good morning, Chair. Good  
5 morning, Commissioners. I'm Angie Gould with the Energy  
6 Research and Development Division and today I'm going to  
7 give a brief overview and request your approval of our 2016  
8 EPIC Annual Report. The Staff Report was submitted to the  
9 CPUC at the end of February in accordance with the CPUC  
10 requirements.

11 So in 2016 the EPIC Program directly addressed  
12 both California's more long-term goals like cost  
13 effectively achieving the 50 percent efficiency and  
14 renewables targets for 2030. But we also focused on some  
15 of our more pressing short-term energy and resource needs.  
16 And one of those needs in 2016 was addressing California's  
17 susceptibility to drought.

18 The Energy Commission initiated 14 new projects  
19 in the agricultural, industrial, and government sectors to  
20 improve water and energy efficiency through innovative  
21 methods like onsite leak detection and advanced wastewater  
22 treatment.

23 And one of the long-term needs being addressed is  
24 controlling vampire plug loads, which are expected to make  
25 up 30 to 40 percent of building energy consumption by 2030.



1 The Energy Commission started eight projects to reduce  
2 standby energy and improve power management and monitoring  
3 of energy use.

4 In addition, there's an ongoing study on using  
5 direct current infrastructure in homes and small businesses  
6 showing the potential to reduce energy use is 30 percent by  
7 minimizing conversion losses between AC and DC.

8 California has a goal of Zero Net Energy homes by  
9 2020 and ZNE businesses by 2030. Six new projects began in  
10 2016 that included retrofitting existing buildings in  
11 disadvantaged or low-income communities in Fresno, Ontario,  
12 and San Francisco. And these projects aim to show the  
13 value and benefits of getting to or near ZNE.

14 Meanwhile, the need for demand response is  
15 growing with the use of distributed generation and variable  
16 renewable resources increases. So the Energy Commission  
17 initiated 15 projects in 2016 to advance demand response  
18 across residential, commercial, industrial, agricultural,  
19 wastewater treatment and transportation sectors. These  
20 projects are focusing on integrating the Grid and customer  
21 needs and also minimizing costs.

22 Several projects were launched in 2016 to help  
23 preserve reliability of natural gas and electric service  
24 for Southern California after the Aliso Canyon leak. These  
25 projects will reduce electrical consumption in government

1 buildings and educational facilities through the use of  
2 innovative technologies and controls.

3 Last year, the Energy Commission also launched  
4 the California Energy Innovation Ecosystem, which includes  
5 four regional energy innovation clusters that provide the  
6 resources and services needed by entrepreneurs.

7 We also kicked off a small grant program to prove  
8 out the early technical and commercial feasibility of new  
9 science concepts.

10 The Energy Commission also established commercial  
11 opportunities for seven active microgrids, four in critical  
12 facilities like hospitals and fire stations, and three that  
13 are focused on increasing renewables in the community.  
14 These projects aim to demonstrate microgrids ability to  
15 provide grid resiliency and to be replicated in similar  
16 areas and facilities throughout the state.

17 There are over 102 million dead trees in  
18 California due to the drought, and the Energy Commission is  
19 researching ways to reduce the risk of wildfire through  
20 converting the forest and woody biomass to electricity.

21 We had one project began in 2016 and one  
22 solicitation was released to meet this need. The  
23 solicitation resulted in six recommended projects in a  
24 March Notice of Proposed Awards, including projects that  
25 are focused on modular technologies that can be used in

1 remote, high-hazard areas.

2           The Energy Commission is also advancing the  
3 understanding of climate risks on the electricity system.  
4 The portfolio of projects will identify vulnerabilities and  
5 adaptation measures that can be adopted in future utility  
6 risk planning efforts.

7           And in the past, EPIC storage projects have  
8 focused on advancing individual technologies to  
9 commercialization. And in the first round of procurement,  
10 PG&E selected two EPIC-funded recipients to meet the  
11 state's 1.3 gigawatt storage mandate. Looking ahead, EPIC  
12 will focus on storage as an enabling technology in  
13 microgrids, vehicle-to-grid, and other integrated projects.

14           And the Energy Commission cultivated partnerships  
15 with multiple military branches, leading to a Memorandum of  
16 Understanding with the Department of the Navy. Recent EPIC  
17 awards include two projects with the Navy on vehicle smart  
18 charging and residential submetering.

19           In addition to highlighting areas of innovation  
20 in 2016 funding, the Annual Report details the EPIC  
21 Program's work to increase the diversity of funding  
22 recipients and deployments in low-income and disadvantaged  
23 communities, as was discussed in the previous presentation.

24           The Energy Commission has also expanded ways to  
25 announce funding opportunities, workshops, and our EPIC

1 Innovation Showcase as you can see in the screenshot on  
2 this slide, to reach a more diverse audience, particularly  
3 through increasing outreach on social media.

4 We've made a lot of progress over the last three  
5 years in locating projects in disadvantaged communities.  
6 In 2014, just one project included a site in a  
7 disadvantaged community. In 2015, 18 awards included such  
8 a project and in 2016, there were 31.

9 Also as mentioned in the previous presentation,  
10 staff is tracking the progress of its efforts to increase  
11 the diversity of EPIC applicants and funding recipients.

12 And in December of last year, we adopted the Low-  
13 Income Barriers Study and the study recommends at least 25  
14 percent of technology demonstration and deployment funding  
15 go toward projects sited in disadvantaged communities.  
16 Last year, we were at 35.7 percent.

17 The CPUC doesn't require reporting on these  
18 recommendations in the Annual Report, but staff has  
19 proactively included them in the 2016 Report and plans to  
20 make reporting on the recommendations a focus of our next  
21 Annual Report.

22 Also in December 2016, we held the second EPIC  
23 Innovation Symposium. Over 500 attendees were there,  
24 either in person or online. The symposium included three  
25 tracts on energy efficiency, generation, and power system

1 modernization. Staff surveyed the attendees, who reported  
2 that the lunchtime thought leaders discussion on leveraging  
3 emerging technology, which covered the use of clean energy  
4 technologies to combat climate change, was a key highlight.  
5 Attendees also highly rated the panel session on bringing  
6 emerging efficiency technologies to low-income or  
7 disadvantaged communities.

8           The Symposium showcased more than 30 EPIC  
9 projects, and participants ranked learning about these  
10 projects and about specific panel topics as their main  
11 reason for attending.

12           This slide gives an overview of some of the EPIC  
13 Program solicitation and funding activities from this past  
14 year. In 2016, we began implementation of the 2015-17 EPIC  
15 Investment Plan, released 11 solicitations, and awarded  
16 funding for 111 projects. As of the end of 2016, the  
17 Energy Commission has encumbered \$396 million for 198 EPIC  
18 projects.

19           This slide provides a breakdown of where our  
20 awarded projects are located. The orange dots on the map  
21 show demonstration site locations, whereas green dots show  
22 recipient headquarters. And more than 50 projects shown on  
23 this map are located in a disadvantaged community.

24           The CPUC decisions and Senate Bill 96 identify a  
25 number of reporting requirements for the EPIC program.

1 Appendix A of the Annual Report includes the full list of  
2 requirements as well as a brief description of how we  
3 complied with each.

4 And on this slide is the Annual Report outline.  
5 In accordance with CPUC decisions, all four EPIC  
6 administrators follow the same outline and the bulk of the  
7 report this year is for the 198 write-ups for each EPIC  
8 project.

9 So if you approve the Annual Report today, the  
10 Energy Commission will submit the report to the Legislature  
11 tomorrow and post it to the Commission's website, followed  
12 by a news release. So with that, I will conclude my  
13 presentation and answer any questions you might have.

14 CHAIRMAN WEISENMILLER: Thank you. First, are  
15 there any comments from anyone in the room, how about  
16 anyone online?

17 (No audible response.)

18 Then I'll transition, I'll at least start out the  
19 conversation on this one.

20 Today's a big day for the EPIC Program, and both  
21 with the Annual Report and with the Investment Plan for  
22 going forward. In fact, we set up this meeting around  
23 these two items. Obviously, other things are there too,  
24 but and part of it was that frankly Laurie wanted a little  
25 more time to get it just right, and so she got an extra two

1 weeks and here we are.

2           And I think we've put together what's a pretty  
3 impressive program. You know, obviously we came into a lot  
4 of criticisms of this particular R&D program. But again, I  
5 think in terms of really delivering results for California  
6 to help drive the transformation of our systems, we're  
7 really hitting our stride now. And I think it's going to  
8 grow in importance as we go forward and keep building upon  
9 each Investment Plan. And we're going to be building upon  
10 this, also the prior ones and we'll see more and more  
11 progress.

12           COMMISSIONER MCALLISTER: So I just am a huge fan  
13 and you saw some of the team that is a -- I mean, Angie  
14 represents the team very well. Laurie unfortunately  
15 couldn't be here today, but I think the EPIC Program is  
16 just a huge win for California, just generally. And a  
17 couple of the topics there are near and dear to my heart.  
18 I mean the plug load work that we're doing is incredibly  
19 important. Globally it's just an leading initiative.

20           The demand response, also. I continue to be  
21 somewhat frustrated frankly, with the demand response  
22 activities in the state, because it has to be a big part of  
23 the solution to get our buildings more grid flexible. And  
24 we're just not quite there in terms of being ready for  
25 prime time to have it happen at scale.

1           And EPIC is one of the key thought-leading  
2 initiatives that's going to figure out how the state can do  
3 that. And it's about technology for sure, but it's also  
4 about implementation, demonstration, learning,  
5 organizations, protocols a whole bunch of stuff that is  
6 relatively difficult in an historical perspective. But we  
7 have the technology to do all this now. And the EPIC  
8 program is really key to putting it all together, making it  
9 work in reality.

10           So those are just a couple of examples that I  
11 find compelling and I'm really glad that we're doing this  
12 work. I can keep tabs on what's going on and I really  
13 appreciate the quality intellect really, that the Division  
14 brings to this and really the complete vetting. And then  
15 the managing of all these contracts, which is no mean feat.  
16 I mean, it's a big deal administratively too, so I want to  
17 thank the Chair for being the fearless leader of all these  
18 projects in the R&D realm in general, at the Commission.

19           But it really helps all of achieve our goals and  
20 our particular areas. So thanks Angie for the  
21 presentation.

22           All right, so I'll move Item 4.

23           COMMISSIONER HOCHSCHILD: Second.

24           CHAIRMAN WEISENMILLER: All those in favor?

25           (Ayes.)



1           CHAIRMAN WEISENMILLER: This passes 4-0. Thank  
2 you.

3           MS. GOULD: Thank you.

4           CHAIRMAN WEISENMILLER: Let's go on to Item 5.  
5 EPIC 2018-2020 Triennial Investment Plan Final Report.

6           MR. STOKES: Good morning, Commissioners. My  
7 name is Erik Stokes. I'm filling in for Laurie ten Hope  
8 this morning, joining me are Virginia Lew, Fernando Pena,  
9 Aleecia Gutierrez and Anthony Ng.

10           Today, we are seeking Commission approval for the  
11 proposed 2018-2020 EPIC Investment Plan. This Plan  
12 presents the Energy Commission strategy for administering  
13 \$440 million in EPIC funding and was developed in  
14 coordination with the other three EPIC administrators as  
15 well as input from over 100 stakeholders.

16           Over the past decade, the state has made  
17 significant progress towards its energy and climate goals,  
18 particularly in the electricity sector. This progress has  
19 given California's leaders the confidence to adopt even  
20 farther-reaching goals, bypassing Senate Bill 350 and  
21 Senate Bill 32.

22           Despite these gains, the current suite of energy  
23 technologies are unlikely to be sufficient to drive the  
24 scale of change needed to reach these targets. To help  
25 overcome the challenges ahead, California has adopted a

1 number of policies such as the storage procurement targets  
2 and the Governor's ZEV mandate.

3           From an R&D context these policies provide two  
4 important functions. One, they provide a vision of the  
5 future energy system that helps guide and shape our R&D  
6 investments and what they should be building towards.  
7 Second, they create the necessary market pool for new  
8 technologies that are trying to compete and eventually  
9 displace established technology solutions.

10           The EPIC Program serves a crucial and  
11 complementary role to these market pull policies by  
12 providing the technology push. One of the key roles we  
13 play through our administration of EPIC is bringing  
14 together stakeholders from the core areas of technologies,  
15 markets and policies. Because it's typically at the  
16 intersection of these three areas that the best and most  
17 viable clean energy solutions are found.

18           The funding allocations for EPIC are broken up by  
19 three areas: applied research and development, technology  
20 demonstration and deployment, and market facilitation.

21           Each of these program areas supports the  
22 technology advancement in different ways. Applied research  
23 and development provides funding for new science and  
24 inventions. Technology demonstration and deployments  
25 supports the scale up of these new inventions and their

1 integration into the larger electricity system, as well as  
2 real world environments. Market facilitation conducts a  
3 range of support activities at various stages of the new  
4 technologies development to increase the market impact of  
5 the overall EPIC portfolio.

6 I wanted to quickly highlight a couple of our  
7 current projects, the 2018 and the 2020 Investment Plan  
8 will build off of our current portfolio of EPIC projects,  
9 in the same way these projects built off our earlier R&D  
10 efforts that predate EPIC. One example of this is storage.  
11 Several years ago, we co-funded, along with the Department  
12 of Energy, some of the first commercial storage  
13 demonstration projects. The results of these projects and  
14 the use cases they tested would go on to inform the CPUC  
15 storage proceeding and create one of the first markets for  
16 energy storage.

17 Under EPIC, we've continued to help advance the  
18 market for energy storage, by funding the demonstrations of  
19 several new storage technologies, two of which as Angie  
20 mentioned, were selected in PG&E's first round of storage  
21 procurement.

22 Also as Angie mentioned in her presentation, this  
23 last year we launched an initiative to develop a statewide  
24 energy innovation ecosystem. One of the key components of  
25 this initiative is our new small grant program called

1 CalSEED. We had our first call for proposals for CalSEED  
2 in February and received over 400 proposals. Staff are  
3 planning to bring this first cohort to the Commission for  
4 approval at one of the upcoming business meetings. And we  
5 have high hopes that many of these projects will be able to  
6 move to the next phase of their development under the 2018-  
7 2020 Plan.

8           In developing this third Investment Plan, we went  
9 through an extensive public process that began with a  
10 scoping workshop back in January to provide guidance to  
11 stakeholders, submitting funding ideas for consideration.  
12 We received over 100 idea submittals, many of which we used  
13 as the basis for developing our draft funding initiatives.

14           This was followed by a second scoping workshop in  
15 March, in which we presented our draft funding initiatives  
16 for public comment.

17           In addition to the two scoping workshops, we also  
18 held five topical workshops on three priority topics, which  
19 included distributed energy resources, clean energy equity  
20 and climate science. Energy Commission staff also  
21 participated in two workshops, held by utilities, as part  
22 of the development of their respective EIPC Investment  
23 Plan.

24           Moving on to the Errata, we have a few changes.  
25 The first change updates the budget table to account for

1 consumer price index adjustments from the California  
2 Department of Finance. In addition, we dropped one  
3 initiative in the Plan and expanded the scope of the other  
4 to allow for more emerging technologies in the HVAC space.

5 Also we've updated Appendix B to include comment  
6 we've received on the second climate workshop, as well as  
7 added Appendix D to reflect comments we received on the  
8 Staff Final Plan.

9 The proposed funding initiatives in this plan are  
10 organized around eight themes. In addition to the proposed  
11 initiatives in this Plan, we've also organized our current  
12 EPIC projects under these eight themes to highlight how the  
13 portfolio of EPIC investments are building towards a common  
14 set of objectives. My colleagues will provide some of the  
15 highlights of each of these themes, beginning with Theme  
16 One and Virginia Lew.

17 MS. LEW: Good morning. So Theme One focuses on  
18 energy efficiency, research and development in buildings  
19 and industries. Our first two investment plans focused on  
20 technology improvements to meet our zero net energy goals.  
21 It also focused on integration of major energy using  
22 systems and also addressed one of the major energy uses in  
23 buildings, and that's plug loads.

24 And we also prepared a study looking at the  
25 feasibility of direct current infrastructure in buildings.

1 And for the industrial sector we looked at improvements to  
2 data centers and industrial processes.

3 For the third plan, the focus is on energy  
4 efficient components that can help drive down the costs,  
5 improve performance, accelerate adoption and increase cost  
6 effective options in both existing and future buildings and  
7 industries. And these examples include capitalizing on  
8 solid lighting features and luminaire flexibility,  
9 demonstrating cost effective improvements to building  
10 envelopes, standardizing control platforms, demonstrating  
11 plug load technologies on a large scale. And additional  
12 testing and demonstrations to improve controls for  
13 operation of industrial refrigeration and compressed air  
14 systems.

15 The third plan also focuses on looking at helping  
16 disadvantaged communities. One of our initiatives focuses  
17 on demonstrations in residential and commercial buildings  
18 primarily to improve building envelope.

19 The third plan also focuses on transitioning  
20 traditionally natural gas equipment to electricity or  
21 focusing on increasing energy efficiency when it's not  
22 possible to do so.

23 Lastly, the Plan also builds on our work on  
24 direct current in buildings and the transitioning to DC  
25 electrical systems by evaluating safety protocols,

1 establishing best practices and broadening the availability  
2 of efficient direct current appliances.

3           So I'm now going to move on to Fernando Pena, who  
4 will talk about the next two themes.

5           MR. PENA: Good morning, Chair and Commissioners.  
6 Theme Two is the accelerated widespread customer adoption  
7 of distributing energy resources with the goal of  
8 supporting the CPUC's distribution and resource planning  
9 efforts.

10           In the first and second EPIC plans, we funded  
11 several research projects focused on commercial and mixed-  
12 use buildings to demonstrate a sustainable model to  
13 integrate high efficiency retrofits. We funded microgrids  
14 for critical facilities such as Kaiser in Richmond, and  
15 high penetration renewables, such as Borrego Springs in San  
16 Diego to improve reliability, reduce costs, and develop  
17 repeatable solutions.

18           We also demonstrated the value, safety and  
19 commercial potential of different emerging energy storage  
20 technologies. Finally, we funded the EPIC challenge. A  
21 two-phase competition that challenges multi-disciplinary  
22 teams to conceptualize and build an advanced energy  
23 community.

24           Under this theme we have four initiatives. The  
25 first initiative will be to achieve cost effective and

1 sustainable retrofits to highly energy efficient buildings  
2 and communities. This will evaluate the potential for  
3 existing communities to develop and pilot test innovative  
4 strategies for investing in energy efficiency renovations,  
5 distributed generation, and storage resources within the  
6 community, particularly in disadvantaged communities to  
7 create repeatable business models.

8           Our second initiative will be to advance  
9 microgrids to the tipping point of broad commercial  
10 adoptions. This will leverage lessons learned from current  
11 research and build on efforts from the joint agency  
12 microgrid road map to assess, demonstrate, and validate  
13 specific features and capabilities of microgrids that meet  
14 the energy needs of a wider range of end use customers.

15           Our third initiative will be to define and  
16 improve the customer business proposition of integrated  
17 distributed storage. This will evaluate financial  
18 structures to clarify the value of energy storage, develop  
19 new methods to streamline challenging areas like  
20 interconnection, lower the cost and time needed to obtain  
21 approvals for installations, reduce the metering equipment  
22 costs, and develop recommended open communication standards  
23 and protocols.

24           And our final initiative under this theme is the  
25 EPIC Challenge 2. This will fund Phase 2 of the EPIC



1 challenge, which will build out the most promising designs  
2 that result from Phase 1. We'll also fund a second EPIC  
3 Challenge to further advance comprehensive clean energy  
4 plans.

5           And next, I'll cover Theme Three, which is to  
6 increase grid system flexibility and stability for low  
7 carbon resources. In the first and second EPIC plans, we  
8 are addressing demand-response participation issues by  
9 funding innovative approaches to engage customers. And  
10 we're exploring DR strategies for irrigation control, water  
11 and transport treatment, and industrial refrigeration.

12           We're also developing methods to translate grid  
13 load conditions and pricing rates to plugging electric  
14 vehicles, to open source communications standards, and a  
15 common interoperability standard.

16           And we're funding a portfolio of fleet  
17 demonstrations and research on battery second use to  
18 address DC fast charging.

19           And we funded research to advance distributed  
20 energy resources by demonstrating smart inverters and  
21 developing tools to enable a storage communication in parts  
22 of the Grid that use either the legacy protocol or current  
23 IEEE open communication standards.

24           And we funded research on utility scale wind and  
25 solar forecast.

1           In this theme we also have four initiatives. The  
2 first one will be to accelerate broad adoption of automated  
3 demand response capabilities to provide the Grid with  
4 flexible response services. This research will develop and  
5 pilot test market designs, assess the performance of load  
6 control systems and technologies, and assess integrated  
7 distributed energy resources and load management systems.

8           The second initiative will be to enable electric  
9 vehicle-based grid services. This research will  
10 demonstrate advanced vehicle grid integration, integration  
11 of fleet management functions to better characterize  
12 business cases for emerging applications including open  
13 communication standards and control functionalities, and  
14 expansion of PEV aggregation capabilities and market  
15 opportunities.

16           We'll also develop battery monitoring  
17 technologies to better characterize and assess PEV battery  
18 cell conditions and optimize configurations of second life  
19 PEV battery packs.

20           The third initiative will be to increase the  
21 value of distributed energy resources and renewables to the  
22 transmission and distribution system. This research will  
23 improve the ability of solar PVs to benefit the Grid by  
24 optimizing the functionality of smart inverters.

25           We'll develop and improve distribution modeling

1 tools and we will enhance tools for grid operators to  
2 visualize the effects of weather patterns and other events  
3 on rooftop solar, solar production, electric vehicle  
4 charging, and other DER usage.

5           And the final initiative under this theme is an  
6 assessment and simulation study of the California Grid with  
7 optimized grid level energy storage. We will develop a  
8 comprehensive simulation that models, validates, tests and  
9 analyzes the impacts of energy storage installations to  
10 provide valuable information on which combinations and  
11 locations of energy storage provide the best value in  
12 relationship to the Grid, to the Grid stability and  
13 operations and performance and duration of the energy  
14 storage.

15           And next I'll hand it over to Aleecia who'll  
16 cover Theme Four.

17           MS. GUTIERREZ: Good morning Chair and  
18 Commissioners, I'm going to discuss Theme Four, which is  
19 increasing the cost competitiveness of renewable  
20 generation. So this theme is focused on technology  
21 advancements needed to open market opportunities for  
22 renewables by increasing the economic potential of  
23 renewables in California enabling renewables to compete in  
24 grid service markets and developing technologies who's  
25 unique attributes can create new uses and markets for

1 renewable technologies. So I'll highlight some of the  
2 technology advancements we're targeting in this Plan. The  
3 first is thin-film PV material science and manufacturing  
4 processes leading to improved performance and enabling  
5 market niches, such as product integrated applications,  
6 building integrated PV and other applications.

7           For wind generation, the technology advancements  
8 we're seeking will drive down installed costs and operation  
9 and maintenance costs. One of these initiatives aims to  
10 provide real time monitoring capabilities to enable pro-  
11 active maintenance, and prevent failures of wind technology  
12 and maximize technology performance to avoid curtailment.

13           Another initiative is seeking to advance  
14 technology readiness of concentrating solar power, combined  
15 with thermal energy storage, comparing the benefits and  
16 economics of this technology with others, such as solar  
17 with battery storage.

18           Plan one and two resulted in projects that are  
19 investigating the benefits and impacts of operating  
20 geothermal and flexible mode. And this Plan will focus on  
21 operational strategies and technology advancements that  
22 will help mitigate issues that can result from flexible  
23 operations such as corrosion.

24           Finally, this Plan includes initiatives to  
25 improve the value proposition of bioenergy. So this

1 includes technology solutions that address impurities in  
2 gasification systems to improve performance and reliability  
3 and reduce risks to downstream systems.

4 This Plan also includes an initiative for low  
5 cost emission control technologies and conversion  
6 technologies that can convert low quality biogas to  
7 electricity while meeting air quality standards.

8 It also includes continuation of some work in  
9 applied R&D and demonstration of modular thermo chemical  
10 systems.

11 So I will turn it over to Anthony Ng, who will  
12 present Theme Five.

13 MR. NG: Great. Good morning, Chair, good  
14 morning, Commissioners. Theme Five focuses on furthering  
15 the Energy Commission's efforts to fill gaps within the  
16 statewide energy innovation ecosystem.

17 Theme Five is comprised of two subthemes. The  
18 first is to continue the efforts that were started under  
19 the first two EPIC investment plans, namely the small grant  
20 program, the CalSEED, as well as the regional energy  
21 innovation cluster.

22 These programs are important, because they  
23 provide multiple entry points for entrepreneurs to enter  
24 the ecosystem and be able to guide and direct them to the  
25 correct and appropriate support services, mentoring

1 efforts, as well as funding opportunities best suited for  
2 these early stage developers. As well these initiatives  
3 also provide important downstream effects to the larger  
4 EPIC Program by raising the quality of the technologies and  
5 the proposals that we expect to see coming out of these.  
6 As well as increasing the sophistication of the applicants  
7 that apply to, not just EPIC, but other clean energy  
8 funding opportunities as well.

9           This subtheme also features an initiative that  
10 will broaden EPIC's federal cost share program to provide  
11 match funding to EPIC-supported technology that receive  
12 funding from either private or nonprofit foundations.

13           The second subtheme under Theme Five focuses on  
14 new initiatives to advance technologies to the prototype  
15 stage to the market entry stage. The first of which is to  
16 institute a new funding mechanism, which will create a  
17 continuous funding opportunity for successful EPIC or ARPA-  
18 E projects to apply for and receive follow-on funding so  
19 that researchers can avoid time delays accelerating their  
20 technology development.

21           The second new initiative here aims to connect  
22 technology developers with California manufacturers to help  
23 bring manufacturing considerations earlier into the  
24 technology development cycle, so that technology developers  
25 understand the implications of large-scale manufacturing,

1 and manufactures have more experience working with  
2 technology developers.

3 So that concludes Theme Five. I'll turn it back  
4 to Virginia for Theme Six.

5 MS. LEW: So Theme Six focuses on the water  
6 energy food nexus. As a result of the drought water  
7 savings coupled with energy efficiency has been a key  
8 strategy in the first and second investment plans.

9 Our first two plans looked at improvements on  
10 specific stages in the wastewater treatment process, low  
11 energy systems for treating non-conventional water  
12 supplies, onsite water treatment and reuse, and increase in  
13 agricultural water efficiency.

14 For the third plan, our focus is on developing  
15 and testing low energy water and wastewater treatment  
16 approaches, reducing energy and water intensity in the food  
17 and agricultural sector, and optimizing management  
18 practices. This includes advanced disinfection  
19 technologies, optimizing the system rather than individual  
20 components, low energy advanced treatment systems for non-  
21 traditional waters focused on community use. And large-  
22 scale demonstration deployment of projects aimed at cost  
23 effective de-carbonization of the wastewater water sector,  
24 agricultural and food processing sector.

25 So I'll turn it back over to Aleecia Gutierrez

1 for the next theme.

2 MS. GUTIERREZ: So Theme Seven will develop tools  
3 and analysis that can inform energy policy and decision  
4 making and planning efforts.

5 So one subtheme we have here is identifying  
6 pathways for achieving California's energy and climate  
7 goals. And this subtheme builds upon long-term energy  
8 scenario work that is currently underway, supported by the  
9 first EPIC Investment Plan. And the scenario work will  
10 yield scenarios of how the electricity system must evolve,  
11 or may evolve, and the set of technologies that will drive  
12 deep carbon reductions for the 2030 and 2050 timeframes.

13 Another subtheme under this theme is increasing  
14 the resiliency of the electricity system to climate change  
15 and extreme weather events. So this subtheme includes work  
16 and data and analysis to determine climate and weather-  
17 related risks at the regional and local level, identifying  
18 vulnerable system assets, and investigating adaptation  
19 option options.

20 We also have a subtheme that's evaluating  
21 strategies to mitigate the impacts of the electricity  
22 system on the environment and public health and safety.  
23 This includes initiatives that will develop strategies to  
24 mitigate environmental public health and safety impacts.  
25 It also includes investigation of environmental impacts of



1 offshore wind, which is an emerging area for California, as  
2 well as life cycle environmental performance assessments  
3 that consider end-of-life strategies for renewable  
4 technologies and components.

5 Back to Anthony Ng for Theme Eight.

6 MR. NG: Great. The final theme, Theme Eight,  
7 focuses on increasing investment, deployment adoption of  
8 clean energy technologies, and low-income and disadvantaged  
9 communities.

10 Theme Eight is comprised of two subthemes, the  
11 first of which aims to advance innovations and big data to  
12 better target clean energy investments and maximize their  
13 impact in disadvantaged communities. This will be done by  
14 improving data collection methods and improving the  
15 granularity of data, and also being able to better link  
16 non-data's energy sets to improved energy data sets.

17 The second part of this effort will be to develop  
18 better analytical tools, utilizing that data, so that  
19 decision makers for both investments and policy makers can  
20 have better data to make more informed choices for targeted  
21 investments of these types of areas.

22 The second subtheme, under Theme Eight, will  
23 provide funding for demonstration and deployment of  
24 emerging energy technologies in disadvantaged communities.  
25 The scope of these specific projects will be based off the

1 individual themes and initiatives covered earlier, but then  
2 the ones specifically targeted for disadvantaged  
3 communities.

4           These projects are important, because they not  
5 only provide direct tangible benefits to disadvantaged  
6 communities. But they also provide critical case studies  
7 that can inform the design and implementation of  
8 California's energy-related policies to these areas as well  
9 as provide crucial outreach opportunities to increase the  
10 familiarity and access of these developing technologies in  
11 these areas.

12           These projects, under Theme Eight, also drive  
13 towards the Energy Commissions goal or R&D's goal of  
14 providing at least 25 percent of technology demonstration  
15 and deployment of funds for projects located in  
16 disadvantaged communities in line with the SB 350  
17 recommendations.

18           So with that, I'll turn it back to Erik.

19           MR. STOKES: Okay. So this next slide presents  
20 the budget breakdown for the 2018 and 2020 Plan through the  
21 three program areas as well as our program administration  
22 budget.

23           The one notable difference in this budget from  
24 the previous investment plans is higher funding levels for  
25 technology demonstration and deployment. Under the prior

1 two plans, we have a number of technologies that are in the  
2 earlier stages of their development and will now be moving  
3 into the demonstration states. And we want to be able to  
4 provide that continuous path for them.

5 For Next Steps, if approved today including the  
6 Errata, we will submit the Plan to the CPUC on May 1st. The  
7 utilities are also required to submit their respective  
8 plans on the 1st. After that the CPUC will open a  
9 proceeding and consider all four EPIC investment plans with  
10 an anticipated decision in December 2017.

11 That concludes our presentation and I'm happy to  
12 answer any questions.

13 CHAIRMAN WEISENMILLER: Thank you. Let's go to  
14 public comment. Catherine Hackney?

15 MS. HACKNEY: Good morning, Chair Weisenmiller  
16 and Commissioners. Catherine Hackney, Southern California  
17 Edison. Two quick points today, first of all we'd like to  
18 express our thanks and appreciation to Commission staff for  
19 their active engagement and outreach to us in the  
20 development of this Plan. We very much appreciate it.

21 The Plan before you today is both robust and  
22 relevant with respect to ensuring the Commission's on-going  
23 leadership role as we move toward a low carbon future. So  
24 thank you.

25 The second point is, as Erik mentioned in the

1 Errata, your funding proposal has been updated to reflect  
2 Department of Finance projections for inflation. As you  
3 may be aware, the investor owned utilities are required by  
4 the CPUC decision to use a particular escalator, the CPI  
5 for urban workers and clerical workers.

6 But in recognition of the Commission's effort  
7 today, I wanted to share with you that Southern California  
8 Edison will be including a statement in its plan to be  
9 filed on Monday, that recognizes -- while ordering the  
10 paragraph requires us to use the CPI for urban wage earners  
11 and clerical workers -- we will also be stating that SCE is  
12 willing to discuss alternative escalation indices including  
13 indices as may be proposed by the California Energy  
14 Commission, in an effort to better serve our customers. So  
15 we will insert the marker in our plan to allow for what we  
16 hope is a very productive and fruitful discussion at the  
17 Commission, the other Commission.

18 CHAIRMAN WEISENMILLER: No, great. Thank you.

19 MS. HACKNEY: Thank you.

20 CHAIRMAN WEISENMILLER: Anyone on the line? I  
21 think Valerie is. Please go forward, Valerie, go ahead.

22 MS. WINN: ...Energy Commission, since the EPIC  
23 was establish, and I think we have formed some really  
24 strong partnerships and are really working well together to  
25 advance this very important research and development for

1 the energy industry.

2 Like Southern California Edison has indicated we  
3 are required in our EPIC proceedings to comply with the use  
4 of certain escalators in forecasting the amount we need to  
5 collect from customers for the EPIC. But we are willing to  
6 discuss, through the course of that proceeding at the CPUC,  
7 the use of alternative escalation indices.

8 And with that, thank you for your time. And I'm  
9 happy to answer any questions.

10 CHAIRMAN WEISENMILLER: Thanks Valerie, for  
11 clarifying that point.

12 Any other comments, either in the room or on the  
13 line?

14 (No audible response.)

15 Okay. So let's transition to the Commissioners.  
16 I'll start out by saying that obviously one of the  
17 interesting questions for EPIC, both for the Energy  
18 Commission and the utility programs, is what sort of  
19 adjustments are there? And you can anticipate we tend to  
20 look at the Department of Finance for this type of  
21 information.

22 The PUC has a variety and God knows, we now know  
23 in the last case we and the utilities had not really worked  
24 out any common agreement on what the escalation should be.  
25 And so the attempt at this point is to try to move a little

1 closer than that. Obviously the PUC uses a lot of  
2 different escalators and it's probably good at this point  
3 to really open up the conversation more on what is the  
4 appropriate escalator. So we've tried, certainly we  
5 appreciate the utility willingness to look around.

6 Obviously, looking across your myriad regulatory  
7 forms, you have different escalators. So the question of  
8 which is the most appropriate one for this purpose would at  
9 least be something that we could get straight at this  
10 point, as we go forward in the future plans. So anyway I  
11 appreciate your willingness.

12 But moving back more to the overall discussion, I  
13 think we got a good sense today that this has been a very  
14 comprehensive public program. Certainly, you can also get  
15 a sense of the depth of our commitment to this effort, in  
16 terms of the amount of staffing that we had today talking  
17 about stuff, under Erik's leadership. Certainly the public  
18 process we've had going forward.

19 And I'm sure all of you had the same experience I  
20 do of people running up to you at various things saying,  
21 "I've got this great idea." And I haven't quite put on the  
22 back of my business card the "Go To EPIC." It has to be in  
23 the Investment Plan and we only award money through  
24 competitive processes. But certainly I've been trying to  
25 message out to people that the Investment Plan is very

1 important, it's very serious. And it's certainly a good  
2 time for folks to really come in with the best ideas  
3 possible, so we can build them in, in sort of a public  
4 systematic process.

5 So anyway, I really want to thank the staff for  
6 their hard work on this.

7 COMMISSIONER SCOTT: I might just add that the  
8 level of creativity and innovation that we see within the  
9 EPIC team, I think is really impressive. And we saw that  
10 with the update from the Annual Report, and then in the  
11 thought and care and really deliberation that has gone into  
12 designing the eight themes for the upcoming research. It's  
13 really impressive.

14 I got great briefings on both and this was a  
15 really thorough presentation. I appreciate that. I almost  
16 didn't need to read the report, just joking. But so I just  
17 wanted to weigh in with my complements.

18 And if you guys don't have additions, I will move  
19 approval.

20 COMMISSIONER HOCHSCHILD: I have some comments, I  
21 don't know if Commissioner -- yeah, go ahead Andrew.

22 COMMISSIONER MCALLISTER: Yeah, so certainly  
23 another great job. I got a briefing from Erik and the rest  
24 of the team, Linda and Virginia, yesterday.

25 But what I love about this process actually is

1 that the team is very diligent about checking in with,  
2 presumably all of our offices, certainly my office, to see  
3 what we think about what are the issues that we see coming  
4 down the pike? And sometimes we as Commissioners are in a  
5 position to see down the road and raise flags early and  
6 sort of, "Hey, this is an intellectual problem. This is a  
7 problem that needs some advanced thinking."

8           And EPIC, the team has been really open to taking  
9 those on and thinking about how they can get them into the  
10 next plan. So it's kind of a bucket that accumulates and  
11 then they work on it and try to get it into the Plan in a  
12 way that makes sense. And I really appreciate that.

13           Certainly vetting with stakeholders across the  
14 state and all the people who know, experts that know about  
15 the particular issues that we're thinking about funding,  
16 that's also really important. So the process really works,  
17 I guess is my impression and my strong impression.

18           In my case, I guess the support in the AB 758  
19 Action Plan and the 350 doubling goal, there are just a  
20 number of fronts where we need to figure this out. We need  
21 to figure out the sort of electric-gas relationship going  
22 forward, because it is complex. And it is important to  
23 resolve that to get to our carbon goals.

24           And are we going to electrify and does that work  
25 and what's the time line and what technologies? I mean



1 those are really incredibly important themes, I think.

2 Multifamily is another area where we've really  
3 got to make progress. And also a lot of the work, and I'll  
4 wrap up with this, the work on figuring out how to use the  
5 modern data environment to take advantage of automation and  
6 analytics. All that kind of stuff that I always talk about  
7 you highlighted it in the low-income setting, but that's  
8 going to have relevance I think across the board for how we  
9 engage with 350 and implement it going forward.

10 So I'm really excited about a lot of these  
11 projects and thanks to everybody for all your effort.

12 COMMISSIONER HOCHSCHILD: And I would also like  
13 to thank all the staff. I'm very, very proud of the EPIC  
14 team: Virginia, Fernando, Aleecia, Anthony, Erik. I know  
15 how hard you guys work. And in my travels around the state  
16 it's just amazing the feedback I get from the private  
17 sector about how valuable the grants we're making are, and  
18 Laurie and the rest of the team.

19 The one question I have that does feel to me to  
20 be a missing piece from this is around offshore renewable  
21 energy generation, particularly technology for offshore  
22 wind, just given a couple of observations I think.

23 I mean, obviously one of the biggest developments  
24 in renewables in the last decade or two has been what's  
25 happened with solar PV going from basically \$5 a watt for a

1 solar panel in 2000 to now at, and in some cases slightly  
2 below, 30 cents a watt. And so utility scale PV bidding  
3 into the RPS at two-and-a-half to three cents a kilowatt  
4 hour is the cheapest resource.

5 We have over-gen during the middle of the day.  
6 We're dealing with that through a number of measures  
7 including storage and demand response and electric vehicle  
8 charging, but really we want to be promoting other  
9 renewable generations that complements that.

10 And in visiting the NREL Wind Energy Center, and  
11 looking at the generation profile for offshore wind, it's  
12 actually remarkably different than onshore wind. It's a  
13 bigger resource, so their capacity factor is closer to 50  
14 percent than 35 percent for onshore wind. And so it's way  
15 up in the morning, goes down in the middle of the day, and  
16 ramps up in the afternoon and evening.

17 And I think that was part of the driver for the  
18 Governor to sign the MOU with the Department of Interior  
19 and the Bureau of Energy Management. And Commissioner  
20 Douglas has been putting an enormous amount of work into  
21 this.

22 And so I know we did fund, I think \$500,000 of  
23 R&D earlier, but just on the technology pathway how do we  
24 get -- we're at six cents a kilowatt hour now, the lowest  
25 offshore wind price in Europe. How do we help them advance

1 through new technology, reducing the platform size,  
2 etcetera? And that was one thing I didn't see in the Plan,  
3 so.

4 CHAIRMAN WEISENMILLER: Well, frankly I'd defer  
5 that to a future investment plan. This one is very focused  
6 on the permitting environmental aspects that Karen's taking  
7 a real lead on. And presumably the next three years if we  
8 can really get that pathway down, we're going to be in a  
9 much better position to start looking where the technology  
10 is.

11 COMMISSIONER HOCHSCHILD: Understood, I probably  
12 have a different view on that, but I'm happy to support the  
13 Plan. I want to again thank everybody for your hard work  
14 on this. Yeah.

15 MR. STOKES: One thing, Commissioners, I was  
16 reminded by our Legal Counsel that what you're approving  
17 today is the Final Report, as well as the Errata.

18 COMMISSIONER SCOTT: So, thank you for that  
19 reminder. I will move approval of the Final Report with  
20 Errata.

21 COMMISSIONER HOCHSCHILD: Second.

22 CHAIRMAN WEISENMILLER: All those in favor?

23 (Ayes.)

24 CHAIRMAN WEISENMILLER: This passes 4-0. Thanks  
25 again, a great job by you and your team.

1           Obviously, on this end also again it's taken,  
2   under Laurie's leadership, a real team to pull together  
3   both of these reports. So (indiscernible) going through  
4   everyone to thank, because we want to make sure we call  
5   everyone out.

6           So let's go on to Item 6.

7           MR. FUNG: Good morning I am Matt Fung with the  
8   Energy Generation Research Office. I'm here seeking a  
9   recommendation to approve the resolution toward two  
10   projects from the advanced vehicle grid integration  
11   research and demonstrations solicitation.

12           The proposed projects address the following  
13   topics from the solicitation: smart and efficient charging  
14   in plug-in electric vehicles to more effectively mitigate  
15   renewable energy generation or over-generation, and advance  
16   the VGI technologies and methods to optimize PEV sources to  
17   the Grid and customer facilities.

18           A total of nine projects are proposed for funding  
19   from this solicitation, however I'm only presenting two for  
20   approval today. The remaining seven projects will be  
21   presented at future business meetings.

22           The first proposed project is with EPRI, which  
23   addresses advancing VGI technologies and methods. The  
24   proposed project will develop a bidirectional power  
25   conversion and control device to optimize power flow

1 management and synchronization decisions between the Grid,  
2 PEVs, renewable energy generation and energy storage to  
3 support vehicle-to-building and vehicle-to-microgrid  
4 functionality.

5 EPRI will also test the impacts of PEV  
6 bidirectional power flow on the PEV battery life.

7 Anticipated results will better optimize the ZNE  
8 buildings and microgrid as resources to the Grid,  
9 accelerate PEV adoption and distribute energy resource  
10 integration. EPRI and the team will also contribute \$2.3  
11 million in match funds.

12 The second project with Zeco Systems dba  
13 Greenlots proposes to advance smart and efficient charging  
14 for PEVs. This project will develop new charging  
15 aggregation and control algorithms to optimally charge  
16 aggregated PEVs to more effectively integrate and manage DC  
17 fast charging with energy storage from second-life PEV  
18 batteries and renewable generation for greater grid  
19 stability.

20 This project aims to lower charging costs, make  
21 DC fast charging more viable by reducing the impact of DC  
22 fast charging peak load demands, mitigate renewable energy  
23 over-generation to the Grid, create opportunities to  
24 participate in utility demand response programs.

25 This research and demonstration for this project

1 will be taking place in a Southern California disadvantaged  
2 community-designated area. And Greenlots will be  
3 contributing \$300,000 in match funding.

4 Staff requests a recommendation to approve these  
5 two proposed projects and I am available to answer  
6 questions. I believe Greenlots and EPRI are also available  
7 to answer questions as well.

8 CHAIRMAN WEISENMILLER: Great.

9 Actually, I was going to ask Greenlots and EPRI,  
10 I assume you're both on the phone? Anyway, no here. Oh,  
11 come on up please. Why don't you introduce yourself? You  
12 can use either this microphone or that one may be a little  
13 more convenient for you.

14 Yeah, hi. My name is Keerthi. I'm the Product  
15 Manager at Greenlots.

16 CHAIRMAN WEISENMILLER: Great, thank you.

17 Anyone else in the room or on the line who wants  
18 to comment at this time?

19 (No audible response.)

20 Yes, so let's transition to the Commissioners.  
21 You know, I think obviously we're at a stage now where it's  
22 really important to move past the silos of renewables here  
23 and transportation there, and starting to connect those  
24 areas. And going forward it's going to be really important  
25 for progress, first to electrify the transportation system,

1 but to do it in a way that helps us on the renewable side.

2 So I tend to think these are very important and  
3 interesting projects and certainly encourage them.

4 COMMISSIONER SCOTT: Yeah, I might just add, I  
5 got a great briefing on these two projects as well. And  
6 especially the one where we're trying to figure out how to  
7 balance the direct current fast-charging loads and try and  
8 put that together with the battery, in an attempt to avoid  
9 some of the demand charges that might come with a fleet  
10 that's plugged in and charging up at the same time. It's  
11 really important on the light-duty side, but it's going to  
12 be increasingly important as we get to medium-duty and  
13 heavy-duty battery electrics, because they're really going  
14 to draw on the system. So being able to manage it is I'm  
15 really looking forward to the results of this study, both  
16 of them.

17 COMMISSIONER HOCHSCHILD: No, I concur with the  
18 Chair's comments and I just -- yesterday I was down, I  
19 visited four publicly owned utilities including Burbank.  
20 And there's certainly some interesting transactions.  
21 Burbank is now giving a \$2,000 cash incentive for workplace  
22 EV charging, which is exactly what we want to see -- people  
23 charging during the middle of the day.

24 And that's the kind of thing too, where as we  
25 have findings where we can propagate out to the 43 POUs

1 best practices and results and really involve them. But  
2 no, I absolutely concur, we're kind of coming together here  
3 in our Division's work.

4 Do you need a motion for this? So moved.

5 COMMISSIONER SCOTT: Second.

6 CHAIRMAN WEISENMILLER: All those in favor?

7 (Ayes.)

8 CHAIRMAN WEISENMILLER: This passes 4-0. Thank  
9 you.

10 Thanks for being here too.

11 Let's go on to 7, addressing air quality  
12 environmental impacts of conventional and emerging  
13 electricity sector technologies in a changing climate.

14 MS. VACCARO: Don't we have a disclosure before  
15 we begin?

16 CHAIRMAN WEISENMILLER: Yes, yes.

17 COMMISSIONER MCALLISTER: Here's where one of the  
18 disclosures steps in, so 7b I want to disclose UC Davis is  
19 a sub on that contract. There's no conflict. My wife is a  
20 professor at King Hall at UC Davis, but has no relationship  
21 with this project.

22 MR. SMITH: Good morning. My name's Tim Smith.  
23 I am a Mechanical Engineer for the Research and Development  
24 Division. I'm here to seek your approval of two  
25 agreements.



1           The first proposed agreement is with the  
2   Zoological Society of San Diego. This project will explore  
3   the effectiveness of head-starting methods for threatened  
4   Mojave Desert tortoises. Under the head-starting strategy  
5   juvenile tortoises will be raised in captivity until they  
6   are large enough to be less vulnerable to threats when  
7   their natural habitat is disturbed by energy projects.

8           This agreement will compare habitat  
9   characteristics where they are released to test whether  
10   juvenile tortoises can be released sooner with the same  
11   improvement in survival. This result can increase can  
12   increase the number of tortoises that can be treated and  
13   lower the mitigations costs for renewable energy projects.  
14   One of the planned rearing facilities is at Edward Air  
15   Force Base in collaboration with their Tortoise Recovery  
16   Program.

17           The second proposed agreement is with the  
18   University of California at San Diego, the Scripps  
19   Institute of Oceanography. This project will advance  
20   hybrid statistical dynamical downscaling methods and  
21   applications that have direct relevance to traditional and  
22   renewable energy in California.

23           The research will focus on three areas: wind,  
24   cloud cover and hydrological models. The project will  
25   develop new and better ways to merge the two downscaling

1 approaches using both dynamical models, which are like  
2 weather models and statistical models and these are models  
3 that extrapolate from past weather data.

4           The combined method is a hybrid downscaling  
5 approach to infer fine resolution climate information from  
6 the course global resolution models. The downscaling  
7 approach will regionalize global climate projections that  
8 take in account California's vast topography. The hybrid  
9 downscaling techniques are focused on weather and climate  
10 phenomena, which impact supply and demand of the energy  
11 sector with particular emphasis on renewable energy. That  
12 being wind and photovoltaic generation.

13           Staff recommends approval of both of these  
14 agreements. I will be happy to answer any questions.

15           CHAIRMAN WEISENMILLER: Thank you.

16           First, are there any comments from anyone in the  
17 room or on the phone?

18           (No audible response.)

19           No, let's transition to the Commissioners.  
20 Again, I think Commissioner Douglas maybe has a desert  
21 tortoise picture up around her office, so I'm sure she  
22 would love to be here today and be supportive.

23           COMMISSIONER HOCHSCHILD: At this point she  
24 probably has a desert tortoise with all her work.

25           CHAIRMAN WEISENMILLER: Probably, right. Yeah,

1 because actually at one point people in California adopted  
2 them and took them home, but I don't -- I'm sure Karen  
3 would not do that, anyway.

4 UNIDENTIFIED SPEAKER: She has a rabbit.

5 CHAIRMAN WEISENMILLER: Rabbit, yeah.

6 Anyways, so I think these are great projects and  
7 this is an important topic.

8 COMMISSIONER MCALLISTER: I move this item.

9 COMMISSIONER HOCHSCHILD: Second.

10 CHAIRMAN WEISENMILLER: All those in favor?

11 (Ayes.)

12 CHAIRMAN WEISENMILLER: 4-0, thanks.

13 MR. SMITH: Thank you.

14 CHAIRMAN WEISENMILLER: Let's go on to number 8,  
15 2016 natural gas energy efficiency research grants for  
16 residential and commercial buildings.

17 MR. DOLL: Good morning, Commissioners. My name  
18 is Jeffrey Doll, Mechanical Engineer with the Energy  
19 Efficiency Research Office or Research Division. I am  
20 presenting today four projects that resulted from our  
21 recent natural gas solicitation.

22 The first project is with Gary Klein and  
23 Associates on code changes and implications of residential  
24 low flow hot water fixtures. Appliance standards have been  
25 steadily reducing the maximum allowed flow rates for hot

1 water fixtures. There has been little change in  
2 distribution system designs. Building occupants using low  
3 flow fixtures will experience longer waiting time for hot  
4 water and they will also experience lower delivered hot  
5 water temperature.

6           There have been no studies to date that addresses  
7 these issues, and the impact of low flow fixtures on hot  
8 water system performance. Low flow fixtures may not be  
9 able to achieve the intended energy and water savings, and  
10 the market adoption of low flow fixtures could be hampered.  
11 Gary Klein and Associates will be performing a research  
12 study to investigate practical solutions to improve hot  
13 water distribution systems, assess the performance of  
14 improved designs and low flow fixtures, and determine the  
15 lowest acceptable flow rates that provide hot water usage  
16 performance requirements without degrading distribution  
17 efficiency.

18           The research will analyze and recommend future  
19 Title 24 and Title 20 code changes to hot water  
20 distribution systems that result in improvements in piping  
21 design and distribution for new construction and existing  
22 buildings. If these changes are adopted, the project  
23 estimates that there will be a savings of 7 million gallons  
24 of wasted hot water annually by 2030, an annual savings of  
25 4.6 million therms or \$4.6 million, and an emissions

1 savings of 5.6 kilograms of NOx and 24.5 metric tons of the  
2 equivalent of CO2.

3           This next project is with EPRI on data driven  
4 approaches to understanding occupant natural gas use in  
5 low-income multifamily communities. The goal of EPRI's  
6 project is to utilize detailed gas data from low-income  
7 communities to understand occupant and customer behavior,  
8 identify the behavior factors that drive up gas usage,  
9 determine the most effective strategies to address gas  
10 usage, and test behavioral interventions.

11           This project will investigate two low-income  
12 communities. One community is master metered community and  
13 the other is an individually metered community. EPRI will  
14 investigate these communities through advanced data  
15 acquisition technologies, monitoring, and analysis to  
16 explain natural gas usage patterns, targeted behavioral  
17 interventions in order to better understand customer  
18 behavior, and factors that impact natural gas usage in low-  
19 income communities.

20           The technology advancement in this project is the  
21 usage of data based non-traditional sub-metering  
22 techniques. Assuming average household gas usage of 500  
23 therms a year, the project estimates a savings of gas  
24 energy use by 5 percent or 25 therms of gas usage per  
25 household per year. With 2.5 million low-income households

1 in California this will result in annual savings of about  
2 62.5 million therms of natural gas.

3           The next project is with Lawrence Berkeley  
4 National Labs on costs and benefits of community versus  
5 individual end-use for solar water heating. Solar water  
6 heating still requires significant institutional support  
7 within California to reach a point where growing market  
8 share produces cost reductions that can lead to a  
9 sustainable expansion of the market. Improving consumer  
10 information and raising incentive levels should help  
11 increase solar water heating system market share.

12           The remaining questions for solar water heating  
13 are what is the optimal level of investment of public  
14 resources, and how can investment potentially be more  
15 tightly focused to maximize the chances of successful  
16 acceptance of solar water heating?

17           The project aims to provide information that will  
18 be useful in guiding these broader decisions about solar  
19 water heating design and deployment. To that end, LBNL  
20 will develop an analytical framework and model community-  
21 scale solar water heating systems in comparison to  
22 individual systems under a wide range of conditions, the  
23 purpose being to quantify the relative costs and benefits  
24 of community-scale versus individual solar water heating.  
25 And they will identify both economic and environmental

1 impacts in the near and medium term.

2 LBNL estimates that by accelerating the adoption  
3 of solar water heating across California it will improve  
4 health and safety for ratepayers by reducing criteria  
5 pollutants from natural gas combustion.

6 Finally, with UCLA we have evaluation of  
7 community-scale solar water heating in Los Angeles County.  
8 UCLA will investigate the feasibility, natural gas  
9 reductions, and cost effectiveness of installing community-  
10 scale solar water heating systems in California to replace  
11 conventional building level water heating systems in order  
12 to reduce California's reliance on fossil fuels.

13 The benefits and feasibility of community-scale  
14 solar water heating include replacement of conventional  
15 building level natural gas or electricity power water  
16 heating systems, contributions to achieving zero net energy  
17 goals, cost effectiveness, and tradeoffs in other renewable  
18 and energy efficiency measures.

19 UCLA will use selected case studies for community  
20 sites in Los Angeles County and evaluate potential natural  
21 gas and electricity savings, sizing limitations, cost and  
22 payback range to building owners or communities and  
23 community solar water heating system versus individual  
24 building water heaters.

25 Additionally, UCLA will determine how community

1 solar water heating can contribute to efforts to establish  
2 zero net energy buildings and communities and whether land  
3 or rooftop area would be better utilized for other advanced  
4 energy technologies.

5 Staff recommends approval of these four projects  
6 and I'm available if you have any questions. Thank you.

7 CHAIRMAN WEISENMILLER: Thank you.

8 First are there any comments -- please, come on  
9 up. Gary, come on up, introduce yourself and say a few  
10 words.

11 MR. KLEIN: I'm Gary Klein and I'm in hot water.  
12 (Laughter.) And I'm married and I have children.

13 So I want to thank you all for hopefully agreeing  
14 in a few minutes to grant us this award. And it's really  
15 novel to be on the other side of the conversation. As many  
16 of you might know, I used to work in the Energy Research  
17 and Development Division on the early stages of this R&D  
18 stuff called PIER.

19 And it's really interesting to read the words I  
20 wrote a decade ago. That myself and the team developed  
21 almost all the language that's common language in both the  
22 T and Cs and in the document itself or work terms, scope of  
23 work. So it's really interesting to see those words come  
24 back at me. Now, I have to answer them.

25 We are going to look at this question of hot



1 water and the way we titled our project is, "How Low Can  
2 You Go and How Close Can You Get?" It's an interesting  
3 problem of design and construction. I will tell you that  
4 the Plumbing Code Rules for pipe sizing were written down  
5 in the 1940s. We do not have any devices in our buildings  
6 that represent flow rates or flush volumes from the '40s,  
7 yet we have never changed pipe sizing rules in parallel  
8 with the flow rate and flush volume rules. I think there's  
9 a problem. And we have to figure out how to fix it.

10 I do have a question for you all, which I'll ask  
11 in a minute, so you can answer in your time. But I want to  
12 let you know that between we are going to go to the ASHRAE  
13 meetings that are coming up in June in Long Beach. And I  
14 expect our contract to actually be signed by then, but one  
15 of the things we did propose in our match funding was to  
16 attend meetings such as that to outreach to our colleagues  
17 and peers from around the country to get their insights  
18 into this. And we intend to do that at this upcoming  
19 meeting at the end of June.

20 In advance of that meeting, we're actually  
21 holding a workshop in Downey at SoCalGas's training center  
22 for them to evaluate two standards change proposals for  
23 90.1 and 189.1 that will address this question of pipe  
24 volume between the source of hot water and the use. Either  
25 skinnier pipe or shorter pipe or both, but we're going to

1     assess if they have two standards changes that they're  
2     looking at right now.

3             And then the Plumbers' Union, the UA, actually  
4     owns a training trailer, which is I sent Commissioner  
5     McAllister and other staff notice about, that has come to  
6     California for a couple of months. In May it's going to be  
7     in San Jose and in June it's going to be in Concord. And  
8     I'd invite you and others that you can think of who might  
9     be interested to see that schedule and attend. We can  
10    demonstrate more in an hour than typically can't be taught  
11    in a week, so having live water on the trailer is very  
12    helpful.

13            COMMISSIONER HOCHSCHILD: Can I just ask a  
14    question? I'm sort of ignorant, but well-meaning on the  
15    issue of pipe sizing. I just want to make sure I  
16    understand what you're suggesting, which I think you can  
17    essentially have narrower pipes to better match with  
18    reduced flow volume. Is there a significant cost reduction  
19    associated with that or is that -- I mean, I guess --

20            MR. KLEIN: There should be.

21            COMMISSIONER MCALLISTER: We should have Gary in  
22    for a talk, I think, because this is a really -- so Gary is  
23    just a real cutting-edge thinker on these issues. And I  
24    was fortunate enough to be trapped in a plane with him for  
25    a couple of hours recently.

1           And but I think the issue of hot water, it's  
2 tough. I think this is a great project, this whole group,  
3 just to sort of I guess make my comments now. But this  
4 one, in particular I think, is the kind of spade work that  
5 we really need to give a rigorous basis for any proposals  
6 we might make about how plumbing code ought to be changed,  
7 because we don't own the plumbing code. So the Energy  
8 Commission is not the primary agency here, yet there are a  
9 lot of energy and water benefits to matching the code  
10 inside a building with the devices that we do regulate,  
11 which are the ones at the end use.

12           And so making that handoff sort of more seamless  
13 and more consensus based from the connection at the street,  
14 through to the end use is really important. And there are  
15 different sets of problems in the retrofit environment  
16 versus the new construction environment. But this work to  
17 develop the plumbing code options is really just a --

18           COMMISSIONER HOCHSCHILD: It's just at a high  
19 level, is this sort of low-stakes poker, I mean, is there a  
20 significant cost benefit to doing that? I mean, do you --

21           COMMISSIONER MCALLISTER: Well, so you save -- I  
22 mean, Gary can chime in, but you save water, the heating  
23 water. On the water, you save water itself, because you're  
24 not running the water down the drain while it gets from the  
25 heater to the end use. You basically have less resident

1 water in the pipe, so you waste less and you have better  
2 outcomes.

3 And it's a problem. You know, I don't know about  
4 your house, but I think a lot of people have to wait around  
5 for the hot water to arrive and they don't like it. And so  
6 it's both a user experience issue and an energy and water  
7 savings issue.

8 MR. KLEIN: To answer your specific question,  
9 there should be a cost savings in construction. I will  
10 however, observe that we sell a zillion feet of half-inch  
11 tubing and fittings to match it in the United States.  
12 Maybe almost that much in three-quarter inch and not so  
13 much in smaller sizes. And in general, you get price  
14 reductions when you sell zillions of feet of things.

15 And so there will be some initial startup when  
16 you propose using skinnier tubing, where people will just  
17 go, "Ah, it's too expensive." Well, compared to what?  
18 They're only selling ten feet of it. Well, when that  
19 switch is on it will change.

20 COMMISSIONER HOCHSCHILD: Good point, yep.

21 MR. KLEIN: So I do have one question for you to  
22 think about and I'm not actually expecting an answer now,  
23 but I'd love one. How long do you want people to wait for  
24 hot water to arrive?

25 CHAIRMAN WEISENMILLER: Thank you. Let's move

1 on. (Laughter.) Those of you with upcoming teenage  
2 children may have more interest in the response than  
3 others, but anyway. Any other public comment or anyone on  
4 the line?

5 (No audible response.)

6 Then let's move to the Commissioners, I think.  
7 Anything beyond the current dialogue that we've had?

8 COMMISSIONER MCALLISTER: No, just that this is a  
9 market transformation kind of need out there. And so I  
10 think we can play a good role on getting it started and so  
11 we do need better solutions on this, so I support all four  
12 of these projects. Particularly multifamily and then I'm  
13 intrigued by the solar one, but I'll go ahead and move the  
14 whole --

15 CHAIRMAN WEISENMILLER: Oh, yeah. We won't talk  
16 about the 1.5 million solar homes or water heater plan from  
17 the '70s, which anyway yeah. Solar water heating, yeah  
18 let's not mention it too much.

19 COMMISSIONER MCALLISTER: Yeah, big fan if it can  
20 work okay that's great. I'll move Item 8.

21 COMMISSIONER SCOTT: Second.

22 CHAIRMAN WEISENMILLER: All those in favor?

23 (Ayes.)

24 CHAIRMAN WEISENMILLER: This item is adopted 4-0.

25 Thank you.

1           Let's go on to Item 9.

2           MR. LOYER: Good morning Chair and Commissioners,  
3 I'm Joe Loyer, Senior Mechanical Engineer from the Existing  
4 Building and Compliance Office.

5           The Energy Commission established the Home Energy  
6 Rating System program on June 17, 1999. As part of that  
7 effort, the Energy Commission established the requirements  
8 for field verification and diagnostic testing services  
9 performed by HERS raters to show compliance with the  
10 Building Energy Efficiency Standards.

11          Generally, a HERS rater is limited to residential  
12 buildings, but there are several instances where the HERS  
13 rater must perform verifications on nonresidential system  
14 installations. Once of interest, the standards require  
15 that air ducts installed in nonresidential buildings be  
16 tested to determine if they leak into spaces that are not  
17 intended to be occupied by people. This testing is only  
18 required for smaller nonresidential installations that are  
19 generally similar in size and design to residential  
20 installations.

21          The nonresidential appendix to the standards  
22 further requires that these air duct leakage tests be first  
23 performed by the technician that installed the HVAC system.  
24 And then verified by the same test procedures, by a HERS  
25 rater.

1           The 2013 standards establish the Acceptance Test  
2 Technician Certification Provider Program to perform a  
3 function similar in practice to the HERS providers, but for  
4 nonresidential buildings. The Acceptance Test technicians  
5 are required to follow specific acceptance test procedures,  
6 which are very similar to the HERS procedures. ATTs are  
7 also required to record the results of acceptance tests  
8 with the Energy Commission-approved ATTCPs.

9           With the establishment of the ATTCP Program,  
10 Energy Commission staff has reconsidered the need for  
11 redundant testing of air duct leakage in nonresidential  
12 installations, and determined that redundant testing and  
13 verification is not necessary given the similar levels of  
14 training and expertise required to become either a HERS  
15 rater or an ATT.

16           Staff published and docketed the staff report for  
17 the alternative procedure to home energy rating system  
18 rater nonresidential duct leakage field verification, and  
19 diagnostic testing on November 10, 2016.

20           Staff then held a public workshop on December 19,  
21 2016.

22           Staff established a 60-day public comment period,  
23 which ended January 21, 2017.

24           Staff published and docketed the final staff  
25 report for the alternative procedure to hers rater

1 nonresidential duct leakage field verification and  
2 diagnostic test on March 22nd, 2017.

3           Therefore staff recommends that the Energy  
4 Commission approve the alternative procedure under Section  
5 10-109(h) of the standards that would allow a certified  
6 acceptance test technician to perform the appropriate air  
7 duct leakage test in lieu of a HERS rater, consistent with  
8 the standard acceptance testing practices for  
9 nonresidential buildings, and that the associated  
10 resolution be signed.

11           Thank you for your consideration. I am available  
12 to answer any questions.

13           COMMISSIONER MCALLISTER: Great. Thanks a lot,  
14 Joe. Do we have any comments in the room on this? No, I  
15 don't think there's a card. Anybody on the line?

16           (No audible response.)

17           No? Okay. So just briefly that was a mouthful  
18 as many things acceptance testing are, but this is about  
19 getting quality and getting efficiency in the marketplace  
20 as well. So not doing redundant work, but making sure that  
21 our systems are commissioned properly. So I am in full  
22 support of this.

23           Should I wait for the Chair to come back here?  
24 Okay. I'll wait ten seconds for the vote. Anybody else on  
25 the -- do you have any comments, no? Okay.



1           So yeah, I'm going to move the item, but I wanted  
2 to just wait for the Chair to come back. All right, so  
3 I'll move Item 9.

4           COMMISSIONER SCOTT: Second.

5           CHAIRMAN WEISENMILLER: All those in favor?

6           (Ayes.)

7           CHAIRMAN WEISENMILLER: 4-0, thank you.

8           Let's go on to Item 10.

9           MS. NEUMANN: Good morning Chair Weisenmiller and  
10 Commissioners. My name is Ingrid Neumann from the Building  
11 Standards Office. I'm here to present Items 10, 11, and  
12 12. There is some background information that is relevant  
13 to all three items. I'm going to present the background  
14 information first, and then I will present Items 10, 11,  
15 and 12 separately.

16           So here's the background information relevant to  
17 all three items. Local governmental agencies wishing to  
18 enforce their locally adopted energy standards are required  
19 to apply to the Energy Commission for a finding that the  
20 local energy standards will require buildings to be  
21 designed to consume no more energy than permitted by the  
22 adopted statewide Energy Standards found in Title 24 Part  
23 6. This finding can be made by the Commission once a  
24 complete application has been received, the complete  
25 application is posted for a 60-day public comment period,

1 and the Executive Director issues a written recommendation  
2 on the application.

3 A complete application consists of the following:  
4 First, the proposed energy standards; second, the local  
5 governmental agency's findings and supporting analyses on  
6 the energy-savings and cost-effectiveness of the proposed  
7 energy standards; third, a statement or finding by the  
8 local government agency that the local energy standards  
9 will require buildings to be designed to save energy when  
10 compared to energy consumption levels permitted by Title  
11 24, Part 6. And fourth, any findings, determinations,  
12 declarations or reports required pursuant to the California  
13 Environmental Quality Act.

14 I will now present Item 10 for the City of  
15 Fremont. Staff has reviewed the City of Fremont's  
16 application and has found that the application was complete  
17 as of January 23rd of this year, consisting of items 1  
18 through 4 mentioned previously. No public comments have  
19 been received by the Energy Commission during the 60-day  
20 comment period, which ended on April 10, 2017.  
21 Subsequently, the Executive Director issued a written  
22 recommendation, in which he recommended approval of this  
23 item.

24 On November 1st of 2016, Fremont's City Council  
25 approved the adoption of Ordinance 21-2016 Section 9, which

1 adds the Fremont Energy Code to the City of Fremont's  
2 Municipal Code. Section 15.44.020 adopts the 2016 Building  
3 Energy Efficiency Standards while Section 15.44.030 amends  
4 it by modifying Table 140.7 in the 2016 Standards to reduce  
5 the lighting power allowance in some nonresidential outdoor  
6 applications. The lighting power allowance reduction  
7 targets seven of the specific application areas: Primary  
8 entrances for specific emergency and medical facilities,  
9 drive-up windows, outdoor sales frontage, outdoor sales  
10 lots, vehicle service station hardscape areas, non-sales  
11 canopies and tunnels, and outdoor dining areas.

12           The City of Fremont worked closely with PG&E  
13 Codes and Standards staff to develop the cost effectiveness  
14 study that was submitted with the City's completed  
15 application. The City of Fremont found that using light  
16 emitting diode technology instead of the baseline pulse  
17 start metal halide technology yielded benefit to cost  
18 ratios of at least 1.1 to 1 for outdoor sales frontage,  
19 28.8 to 1 for vehicle service station hardscapes, and much  
20 higher for other applications. The cost effectiveness  
21 study was also heard and approved on November 1st of 2016.

22           Staff found the application to be complete and  
23 confirmed a reduction of energy consumption required by the  
24 local ordinance. Staff therefore recommends the findings  
25 be approved and the Energy Commission resolution be signed.

1 I am available to answer any questions you may have.  
2 Rachel DiFranco may also be on the line, though she did  
3 mention she might have to leave. She's the Sustainability  
4 Coordinator with the City of Fremont. Thank you.

5 CHAIRMAN WEISENMILLER: Okay. Great. I was  
6 first going to ask is there anyone either in the room or on  
7 the line that wants to say anything?

8 MS. DIFRANCO: So with the City of Fremont, I'm  
9 here to answer any questions.

10 CHAIRMAN WEISENMILLER: Great, thank you. Thanks  
11 for being on the line.

12 Now, let's transition to the Commissioners,  
13 Commissioner McAllister?

14 COMMISSIONER MCALLISTER: Yeah, I guess I'll just  
15 mimic Ingrid's presentation and say for all three of these,  
16 it's just we depend on the local governments to go ahead  
17 and do things that are unique and that they deem  
18 appropriate for their constituents in their areas. And  
19 we've learned from that and we build on that, and so it  
20 helps socialize all the things we want to do and deepen the  
21 efficiency game and the localized renewables.

22 All these technologies we're talking about that  
23 are overlapping all of our different offices and areas, the  
24 cities are really the ones that are pioneering all of this  
25 and how to integrate them. So I definitely approve or like

1 this item and encourage it's approval.

2 So I'll move Item 10 if there are no other  
3 comments? Okay. I'll move Item 10.

4 COMMISSIONER HOCHSCHILD: Second.

5 CHAIRMAN WEISENMILLER: All those in favor?

6 (Ayes.)

7 CHAIRMAN WEISENMILLER: Item 10 passes 4-0.

8 Thank you. Let's go on to Item 11.

9 MS. NEUMANN: Okay. So for Item 11, in light of  
10 the background information that I previously provided, I  
11 will now present Item 11.

12 Staff has reviewed the City of Mill Valley's  
13 application and has found that the application was complete  
14 as of February 8, 2017 consisting of items 1-4 mentioned  
15 previously. No public comments have been received by the  
16 Energy Commission during the 60-day comment period which  
17 ended on April 10th. Subsequently, the Executive Director  
18 issued a written recommendation, in which he recommended  
19 approval of this item.

20 On January 17th of this year Mill Valley's City  
21 Council approved the adoption of CALGreen Tier 1 for some  
22 new low rise residential occupancies in Ordinance 1289  
23 Sections 1 and 2, which adds Chapter 14.48 to the Mill  
24 Valley Municipal Code.

25 The City of Mill Valley is requiring all new

1 single-family residential buildings to be designed to use  
2 15 percent less energy than the allowed energy budget  
3 established by the 2016 Standards by meeting the voluntary  
4 CALGreen Tier 1 requirements for new single-family  
5 residential occupancies.

6           The City is also requiring all new low rise  
7 multifamily residential buildings to be designed to use 10  
8 percent less energy than the allowed energy budget  
9 established by the 2016 Standards. In Climate Zone 3 the  
10 solar PV credit may be taken, but they're hoping to avoid  
11 that by having the energy budget for low rise multifamily  
12 be 10 percent and not 15 percent.

13           So the City of Mill Valley also worked closely  
14 with the PG&E Codes and Standards staff to develop the cost  
15 effectiveness study that was submitted with the City's  
16 completed application. The City of Mill Valley found that  
17 for single family residential buildings Tier 1 could be  
18 reached through efficiency only measures at cost benefit  
19 ratios ranging from 1.13:1 to 1.69:1. Low rise multifamily  
20 was more challenging. The City of Mill Valley found that  
21 Tier 1 could still be reached at a cost benefit ratio of  
22 1.41:1 by using both efficiency measures as well as the PV  
23 credit but they opted to only require a 10 percent better  
24 compliance margin, which allows for compliance by using  
25 efficiency only measures.

1           The cost effectiveness study was also heard and  
2 approved on January 17, 2017.

3           Staff found the application to be complete and  
4 confirmed a reduction of energy consumption required by the  
5 local ordinance. Staff therefore recommends the findings  
6 be approved and the Energy Commission resolution be signed.  
7 I am available to answer any questions you may have, as is  
8 Danielle Staude, Senior Planner with the City of Mill  
9 Valley. Thank you.

10           CHAIRMAN WEISENMILLER: Great, thank you.

11           First, any comments from anyone in the room or on  
12 the line?

13           (No audible response.)

14           Then again, let's transition to the  
15 Commissioners. Commissioner McAllister?

16           COMMISSIONER MCALLISTER: Yeah. This is a really  
17 great example of a city leveraging CALGreen. I mean, I  
18 think that's really what CALGreen helps happen is cities  
19 get out ahead of the mandatory code and adopt this as their  
20 own mandatory code. And then again, what I said before I  
21 applies, where they bring it back and make it real and we  
22 all learn from that. And so it helps us get to our long-  
23 term goals, ZNE-related and others. So I'm fully in  
24 support of it.

25           COMMISSIONER HOCHSCHILD: Yeah, just to add, I

1 asked Ingrid and the team to give me an overview of all the  
2 cities that have gone above code. So by July, if  
3 everything that comes before us is approved, we'll have ten  
4 cities that are out in front. And it's quite a wide-  
5 ranging set of these codes. And actually, if you could  
6 maybe just forward what you sent to me to the other  
7 Commissioners, I think it'd be of interest.

8 But I think it's a great experimentation. We  
9 certainly have lessons we can learn from these cities  
10 getting out in front.

11 CHAIRMAN WEISENMILLER: Good. Yeah, if you could  
12 put that in the record too here, on this?

13 COMMISSIONER HOCHSCHILD: Yeah, that'd be great.

14 COMMISSIONER MCALLISTER: Yeah.

15 CHAIRMAN WEISENMILLER: Docket it for this item  
16 and on the Business Meeting.

17 MS. NEUMANN: Okay. I'll do that.

18 COMMISSIONER HOCHSCHILD: All right, do you need  
19 a motion or did you make a motion?

20 COMMISSIONER MCALLISTER: (Indiscernible)

21 COMMISSIONER HOCHSCHILD: All right, I'll second.

22 CHAIRMAN WEISENMILLER: All those in favor?

23 (Ayes.)

24 CHAIRMAN WEISENMILLER: This passes 4-0 also.

25 Thank you.



1           Let's go on to Item 12.

2           MS. NEUMANN: In light of the background  
3 information that I previously provided, I will now present  
4 Item 12.

5           Staff has reviewed the City of Novato's  
6 application and has found that the application was complete  
7 as of February 7th of 2017 consisting of items 1-4  
8 mentioned previously. No public comments have been  
9 received by the Energy Commission during the 60 day comment  
10 period, which ended on April 10th. Subsequently, the  
11 Executive Director issued a written recommendation, in  
12 which he recommended approval of this item.

13           On November 29th, 2016 Novato's City Council  
14 approved the adoption of CALGreen Tier 1 for new low rise  
15 residential occupancies in Ordinance 1612 Section 2, which  
16 amends Chapter 4 of the Novato Municipal Code. CALGreen  
17 Tier 1 requires all new low rise residential occupancies to  
18 be built to be 15 percent more energy efficient than  
19 required under the 2016 Building Energy Efficiency  
20 Standards.

21           The City of Novato worked closely with PG&E's  
22 Codes and Standards staff to develop the cost effectiveness  
23 study that was submitted with the City's completed  
24 application. The City of Novato found that for single-  
25 family residential buildings, Tier 1 could be reached

1 through efficiency only measures at cost benefit ratios  
2 ranging from 1.2 to 1.89 to 1. Low rise multifamily was  
3 more challenging but the City of Novato found that Tier 1  
4 could still be reached at a cost benefit ratio of 1.43 by  
5 using both efficiency measures as well as the PV credit,  
6 which may taken in Climate Zone 1.

7 The cost effectiveness study was also heard and  
8 approved on November 29, 2016.

9 Staff found the application to be complete and  
10 confirmed a reduction of energy consumption required by the  
11 local ordinance. Staff therefore recommends the findings  
12 be approved and the Energy Commission resolution be signed.  
13 I am available to answer any questions you may have as is  
14 Bob Brown, Community Development Director with the City of  
15 Novato. Thank you.

16 CHAIRMAN WEISENMILLER: great, thanks.

17 First, any comments from anyone either in the  
18 room or on the phone?

19 (No audible response.)

20 Okay. Commissioner McAllister?

21 COMMISSIONER MCALLISTER: I will just give kudos  
22 to Novato, Mill Valley and Fremont and move Item 12.

23 COMMISSIONER SCOTT: Second.

24 CHAIRMAN WEISENMILLER: All those in favor?

25 (Ayes.)

1                   CHAIRMAN WEISENMILLER: This passes 4-0. Thank  
2 you.

3                   Let's go on to Item 13, Kema.

4                   MR. DORAI: Good afternoon Chair and  
5 Commissioners. My name is Troy Dorai. I work in the Demand  
6 Analysis Office of the Energy Assessments Division. I am  
7 here to seek your approval for the almost 2.7 million  
8 dollar contract with Kema, Inc. to begin the 2017  
9 Residential Appliance Saturation Survey or RASS. The 2017  
10 RASS is the third in the series and will support the Energy  
11 Commission's electricity and natural gas demand forecast  
12 through a survey of representative households to gather  
13 data on appliances, energy-consuming equipment, and  
14 consumption patterns.

15                   The RASS provides a historical record of  
16 California's residential energy landscape by which  
17 researchers can perform valuable studies. These studies  
18 document changes in energy consuming behavior from the  
19 appliances installed in homes, to the patterns of appliance  
20 usage to the energy efficiency levels of both houses and  
21 appliances.

22                   Some of the key drivers effecting change in  
23 energy consumption patterns include growth in electric  
24 vehicles, solar rooftop PV systems, multi-use digital  
25 devices such as tablets, and home automation technologies

1 such as smart thermostats, which empower consumers to track  
2 and manage their energy use. Updated information  
3 pertaining to households including demographics, housing,  
4 appliance saturation rates, and end use intensity will  
5 provide staff with the most current data for generating  
6 energy demand forecasts, and evaluating energy efficiency  
7 and load management programs.

8           The total contract budget consists of \$1.5  
9 million in ERPA funding and up to almost 1.2 million  
10 dollars contingent upon other non-ERPA funding becoming  
11 available.

12           Thank you for your time and consideration. I'm  
13 available here to answer any questions that you may have.

14           CHAIRMAN WEISENMILLER: Great. Thank you.

15           First, is there any comments from anyone in the  
16 room or on the line?

17           (No audible response.)

18           Okay. Then we'll transition to the  
19 Commissioners. I think this is one of the really key  
20 contracts for our demand forecast. You know, our demand  
21 forecast is disaggregated, so we go through and come up  
22 with a stock of buildings with a stock of appliances. And  
23 it's been a long, long time since we really checked out the  
24 stock of appliances with this sort of survey.

25           So that in terms of just getting things right,

1 this is really critical. We've got a similar effort we  
2 launched last year more on the commercial sector, but again  
3 sort of SUS (phonetic) and RASS are both just sort of  
4 really pivotal for the quality of our demand forecasts, so  
5 we need to make these investments in the infrastructure.

6 COMMISSIONER MCALLISTER: Yeah, SUS and RASS are  
7 really critical and between that and the DOE efforts that  
8 have happened in the past, hopefully we'll keep going in  
9 the future. It gives us a lot of good information. And I  
10 think the idea with both the SUS and the RASS, is to help  
11 as we get other sources of data flowing in, to have all the  
12 various efforts sort of more tightly coordinated. So that  
13 the surveys that we do with the RASS feeds in to our data  
14 work for the forecast and IRPs and doubling and everything  
15 else.

16 So anybody else have any comments? No, great so  
17 I'll move Item 13.

18 COMMISSIONER HOCHSCHILD: Second.

19 CHAIRMAN WEISENMILLER: All those in favor?

20 (Ayes.)

21 CHAIRMAN WEISENMILLER: This is also approved 4-  
22 0. Thank you.

23 Let's go on to Item 14, community-scale and  
24 commercial-scale advanced biofuels production facilities.

25 MR. NGUYEN: Good Morning Chair and

1 Commissioners, my name is Hieu Nguyen. I'm a Biofuels  
2 technical staff, from the Fuels & Transportation Division  
3 in the Emerging Fuels and Technologies Office.

4 I'm here today to present to the Energy  
5 Commission two grant agreements for possible approval.  
6 These two projects were proposed for funding through Grant  
7 Funding Opportunity-15-606, the community-scale and  
8 commercial-scale advanced biofuels production facilities  
9 solicitation.

10 GFO-15-606 made grant funds available to projects  
11 that increase in-state low carbon biofuels production at  
12 new and existing biofuels production facilities, with  
13 emphasis on cost-effective fuel production and mitigation  
14 of greenhouse gas emissions.

15 The first project seeking approval today is SJV  
16 Biodiesel, LLC., for \$3.6 million to build and operate an  
17 add-on biodiesel plant at the existing CALGreen ethanol  
18 production facility located in Pixley, California. The  
19 facility will produce just over 5 million diesel gallon  
20 equivalents per year of biodiesel with a carbon intensity  
21 of 13.93 grams of CO2 equivalent per MJ.

22 SJV Biodiesel will utilize JatroDiesel's  
23 supercritical technology, which allows the biodiesel  
24 facility to use inedible oil and 100 percent free fatty  
25 acid feedstocks. SJV Biodiesel will provide \$4.9 million

1 in match funds for this agreement.

2 The second project seeking approval today is New  
3 Leaf Biofuels, LLC., for nearly \$3.8 million to upgrade and  
4 expand existing production of biodiesel at their production  
5 facility located in San Diego, California.

6 The facility will produce just over 6.5 million  
7 diesel gallon equivalents per year of biodiesel with a  
8 carbon intensity of 15.07 grams of CO2 equivalent per MJ.  
9 New Leaf Biofuels will utilize Lutros's production  
10 technology, which allows the facility to use 100 percent  
11 free fatty acid feedstocks and to operate continuously  
12 instead of in batch-based fuel production. New Leaf  
13 Biofuels will provide just over \$4.4 million in match  
14 funds.

15 Thank you for your considerations of these items.  
16 I have Lyle Schlyer from SJV Biodiesel and Jennifer Case  
17 from New Leaf Biofuels are here in person, and available to  
18 answer any of your questions today.

19 CHAIRMAN WEISENMILLER: Great. Thank you.

20 Do either of you want to comment? Yeah, come on  
21 up, please.

22 MR. SCHLYER: Lyle Schlyer with SJV Biodiesel.  
23 My comment is brief, just wanted to thank you for your  
24 consideration of what we consider a very innovative  
25 project. And thank you for your support in the past and

1 again for your consideration of this project.

2 CHAIRMAN WEISENMILLER: Thank you.

3 Please, come on up.

4 MS. CASE: Good afternoon. I also want to thank  
5 the Commission for trusting New Leaf Biofuels on another  
6 project.

7 Your comments this morning, both your reverence  
8 for your former Commissioner, and then subsequently all the  
9 discussions on providing more opportunities for women and  
10 disadvantaged communities really resonated with me, because  
11 I am the founder of New Leaf almost 11 years ago. Founded  
12 by a female entrepreneur, still run by a female  
13 entrepreneur, and our plant is located in a disadvantaged  
14 community of Barrio Logan in San Diego. So I'm glad to be  
15 helping the Commission in achieving those kind of goals  
16 with this project.

17 Biodiesel is providing approximately 40 percent  
18 of the GHG reductions for the LCFS Program. And a  
19 significant portion of that fuel is currently being  
20 supplied by out-of-state and out-of-country producers. So  
21 although California is enjoying the environmental benefits  
22 of that fuel in terms of cleaner air, we are exporting much  
23 of the economic activity outside of the state. And this  
24 project at New Leaf will help to remedy that in balance.

25 Thank you for your time, your support, and we



1 really look forward to completing this project.

2 CHAIRMAN WEISENMILLER: Great. Thank you.

3 Thanks to both of you for being here.

4 Let's transition to the Commissioners,

5 Commissioner Scott?

6 COMMISSIONER SCOTT: Sure. I just want to say  
7 thank you to both Lyle and Jennifer for being here. These  
8 are two great projects. One thing that's exciting about  
9 them, as you probably noticed as Hieu was talking, is these  
10 are not in the hundreds of thousands of gallons. These are  
11 in the millions of gallons and I think that's really great  
12 to see as we're making our way into having cleaner fuels in  
13 our system.

14 So I will -- did you have a comment -- okay, move  
15 approval of -- I lost the number, Item 14.

16 COMMISSIONER MCALLISTER: Second.

17 CHAIRMAN WEISENMILLER: All those in favor?

18 (Ayes.)

19 CHAIRMAN WEISENMILLER: This is approved 4-0.

20 MR. NGUYEN: Thank you.

21 CHAIRMAN WEISENMILLER: Thank you.

22 Let's go on to 15, the minutes.

23 COMMISSIONER MCALLISTER: I move the minutes.

24 COMMISSIONER SCOTT: Second.

25 CHAIRMAN WEISENMILLER: All those in favor?

1 (Ayes.)

2 CHAIRMAN WEISENMILLER: Also approved 4-0.

3 Lead Commissioner, Commissioner Scott?

4 COMMISSIONER SCOTT: Two brief updates for you  
5 all, last week was kind of the hydrogen-themed week for me.  
6 I had the opportunity to go and celebrate with Toyota and  
7 the Air Resources Board and some others. Their fuel cell  
8 Class 8 truck, they're calling it the next turning point,  
9 which is pretty exciting. They're planning to demonstrate,  
10 they actually are demonstrating it at the Port of Los  
11 Angeles. And it's a short haul truck, so it'll be kind of  
12 delivering different things back and forth.

13 It's really neat. The Mirai, which is the  
14 passenger car has one fuel cell stack in it. It's two  
15 Mirai fuel cell stacks with the battery in a Class 8 truck.  
16 And so looking to see the results of the study that folks  
17 are doing, that Toyota is doing is going to be really  
18 exciting. And it was great to get to celebrate that with  
19 them.

20 If it's of interest to anybody, check out  
21 Toyota's webpage. They have a great video of a diesel  
22 Class 8 truck and the fuel cell truck. And it has kind of  
23 the same get-up and go that passenger cars have, so you can  
24 see them both kind of hit the accelerator and see which one  
25 moves faster and that was pretty neat.

1           The other thing is I had a great opportunity with  
2   our colleagues from Air Resources Board, Mary Nichols, and  
3   the Governor's Office of Business and Economic Development,  
4   Tyson Eckerle, and I did another hydrogen drive. This one  
5   was a Bay Area hydrogen tour. We started here in  
6   Sacramento and were joined by Senator Stern and  
7   Assemblymember Quirk to help kick us off as we left the  
8   Capitol.

9           We drove from there to Hayward, which took just  
10   about as long as you might anticipate, a little over two  
11   hours. And had a chance to celebrate the hydrogen fueling  
12   station in Hayward. The Mayor came out, some City Council  
13   folks, that was a lot of fun. Then we took the cars and  
14   drove from Hayward down to San Jose and kind of did the  
15   same thing there at San Jose. Filled up the cars,  
16   celebrated the station, that station's been in operation  
17   for one year now.

18           And we really just got to share the message that  
19   again, the fuel cell vehicles are here. This time we drove  
20   in Toyota Mirais and Honda Claritys, so there are now three  
21   fuel cell models. The cars are here, the fueling is here,  
22   and we had an opportunity to celebrate that together last  
23   week.

24           So those are my updates.

25           COMMISSIONER MCALLISTER: That's very cool. Just

1 one quick one, I went down to San Diego to give a talk  
2 organized by the World Business Council for Sustainable  
3 Development in conjunction with the USGBC. It was really  
4 about benchmarking and engaging the private sector in  
5 benchmarking and kind of I saw it as an outreach for our  
6 upcoming Benchmarking Program, but more broadly just  
7 establishing best practices and helping inform that  
8 discussion. And they're doing it in a way that's I think  
9 is very affirming to the businesses themselves in involving  
10 them in the right way. So I enjoyed that.

11 But while I was down there, I took advantage of  
12 going out and seeing one of the EPIC challenge projects,  
13 the GroundWork San Diego Chollas Creek Project. And those  
14 grant recipients are in disadvantaged communities, that  
15 particular project, and just doing really great stuff  
16 within a very complex environment in a disadvantaged  
17 community that has all sorts of issues with land use and  
18 the way it has historically developed. And I am really  
19 encouraged by that particular initiative and again was  
20 happy to see all the enthusiasm and the learning that's  
21 going on there. They're super optimistic that they'll be  
22 able to replicate and do great things with it, so I agree.

23 So that's it for me.

24 COMMISSIONER HOCHSCHILD: So a couple, first of  
25 all I'm really enjoying driving my EV. Thank you, Janea,

1 for encouraging me.

2           And I just did get an update from Tesla, a guy I  
3 know there now. They've gone from when Commissioner Scott  
4 and I were there a year or so ago, which was about 800  
5 vehicles a week, they're now making 2,500 vehicles a week  
6 and are preparing to do another 1,000 on top of that when  
7 the Model 3 comes out. So just it's really encouraging to  
8 see the scaling up.

9           I want to thank Natalie Lee from the Renewable  
10 Energy Division for joining Ken and I on these visits with  
11 the POUs. I'm probably three-quarters of the way through  
12 my visits with all of them. And these are mostly small  
13 electric utilities, municipal utilities in Southern  
14 California with 100 to 300,000 residents. And who all have  
15 electric service and no gas service, actually are very  
16 interested in vehicle electrification and are pursuing, in  
17 some cases, some quite creative stuff. Burbank was the one  
18 who impressed me the most with the \$2,000 workplace  
19 charging.

20           I had a very interesting week last week, I met  
21 with the founder of Twitter. I don't tweet. I'm still  
22 sort of in the messenger pigeon era of communications. But  
23 they are getting involved in -- it was a clean tech  
24 (indiscernible) -- and actually putting some considerable  
25 investment now into clean tech investments. And I had a

1 great dialogue with them.

2           It's part of one of the beautiful things about  
3 California is the mixing of talent and resources from high  
4 tech to clean tech and we certainly benefit from that.

5           And then Emilio set up a breakfast with Vicente  
6 Fox, the former president of Mexico, who is town to give  
7 some talk. He's doing a sort of defense of NAFTA and some  
8 talks and I had some very good discussions with him about  
9 energy.

10           I've also been engaging on repowers with wind and  
11 met with NextEra and some others about how do we accelerate  
12 that. Land is highly constrained for wind in California.  
13 There's just a huge opportunity and in many cases to  
14 actually triple the energy production. And cut the number  
15 of turbines, in some cases, by 80 to 90 percent. Just the  
16 new turbines are so much more efficient, but there is some  
17 policy barriers around that.

18           And then the symposium that I'm co-chairing next  
19 month at UC Irvine, is coming together really well. Ken  
20 Alex, Commissioner McAllister will join, Senator Skinner,  
21 Senator de Leon, Chris Lee who is the author of Hawaii's  
22 renewable energy law. And we've got some great folks from  
23 GM and others just talking about the different challenges  
24 and development around electrification and the nexus with  
25 renewables.

1                   And that is it for me.

2                   CHAIRMAN WEISENMILLER:   Yeah, I'll also be brief.  
3   I've been in a lot of IEPR workshops with more to come and  
4   we didn't do a visit to PARC.   Anyway, when I went to China  
5   they had one of their research folks with us on the China  
6   trip.   And they obviously have a phenomenal history of  
7   (indiscernible).   I mean, you walk into the lobby and  
8   they've got like the first computer with a mouse or with a  
9   graphical display and the first Ethernet cable, you know,  
10   and just very deep connections to Xerox.   And obviously  
11   through the Research Center they do a lot of very  
12   interesting things that sort of involve printing  
13   technology.   And I guess Xerox also was a leader in sort of  
14   laser focusing again, for printers.

15                  So it's sort of taking what's, in some respects  
16   their roots, and obviously expanding beyond that.   But  
17   coming up with some really interesting things that you can  
18   do in terms of printing circuits, sensors, you name it.  
19   But again, it's sort of the next generations from what you  
20   could do with the science and engineering behind their  
21   basic technologies for printing, to apply in new ways.   So  
22   it was pretty interesting, but like I said okay this is the  
23   first computer with a mouse and graphical display.   It  
24   doesn't get much neater than that, at least for some of us,  
25   but anyway that was fun.

1           So let's go on to Chief Counsel Report.

2           MS. VACCARO: Nothing today, thank you.

3           CHAIRMAN WEISENMILLER: Let's go on to Executive  
4 Director Report.

5           MR. OGLESBY: Nothing to add today.

6           CHAIRMAN WEISENMILLER: Public Adviser Report?

7           (No audible response.)

8           CHAIRMAN WEISENMILLER: Okay. And we have one  
9 public comment, Mr. Stanley, please?

10           MR. STANLEY: Good evening, Commission. I'm  
11 Robert Stanley from the Stanley Green Energy. I came by  
12 the Air Resource Board ten days ago and described a couple  
13 of my inventions. A solar canal, it's just a square frame  
14 that holds solar panels over canals. But it also has an  
15 evaporation barrier that would prevent a lot of the water  
16 loss. And although I still don't have the silt figured out  
17 yet, how to get the silt out of the canal, because the  
18 evaporation barrier is going to get in the way of that.

19           And so let's see, I've got a ton of inventions.  
20 I keep inventing stuff. On the way home the other day, I  
21 invented a key component of the new firefighting aircraft.  
22 And so I'm seeking funding to patent my inventions. And I  
23 also have another, a reduced-friction bearing I came up  
24 with, which I think would be valuable. I have some oil  
25 spill inventions and a windmill invention and a



1 desalination plant invention, but that one's probably  
2 taken. Several green energy home designs, and some  
3 building designs, transportation inventions, and that's  
4 about it.

5 But I'm basically seeking \$150,000 to patent my  
6 inventions somehow and I'm getting them done for about  
7 5,000 now per invention. It usually costs about 8 or 10.

8 CHAIRMAN WEISENMILLER: Yeah. Actually, what you  
9 should do is talk to the Public Adviser. So we do not give  
10 funds unless it's been something in our Investment Plan, an  
11 area, and then we only do it through competitive  
12 solicitations. So if we have a competition say, on  
13 desalinization, our website will say it's coming up at  
14 certain times and there will be an announcement on that.  
15 And then there will be an opportunity to bid on that and we  
16 also have this LinkedIn website that you can try to connect  
17 with people.

18 Now, with the catch we're custodians of public  
19 money, so basically if we give someone money we need to get  
20 benefits back. That's sort of how it works, and not just  
21 here it is, this is the money. If it doesn't work too bad,  
22 and if it works you will suddenly get a ton of money, but  
23 the state gets nothing. So anyway, there's complicated  
24 contractual terms, but I think the Public Adviser can help  
25 you at least understand where some of the opportunities are

1 and where they aren't. But we only do things involving  
2 energy, because that's where the money comes from for us.

3 MR. STANLEY: Yeah, but almost all my inventions  
4 involve energy. And then I have a problem with doing all  
5 that paperwork. That's too much paperwork for me.

6 CHAIRMAN WEISENMILLER: Yeah, well again look at  
7 the LinkedIn site, see if you can be part of a team. I  
8 mean, that's the only way -- it's not like we have an ATM  
9 machine here that you come in, push a button, and money  
10 comes out. We have to really go through the public process  
11 to demonstrate that we're stewarding the money wisely.

12 MR. STANLEY: I understand that, but you'll get  
13 more for your money by giving me 150,000, because I'm doing  
14 ten projects compared to other people doing one project for  
15 a lot more money. So you're getting your money's worth,  
16 but yeah. I don't know how to figure out the process.

17 CHAIRMAN WEISENMILLER: Yeah, well I mean  
18 certainly we're here. As David can tell you, there's a lot  
19 of venture capital companies that are looking for ideas,  
20 but most of them are looking for products. I mean, here it  
21 is, here's a product, it's really to roll. And if it's an  
22 idea that needs to be developed, it's harder to get money  
23 for that nowadays, right?

24 MR. STANLEY: Yeah.

25 CHAIRMAN WEISENMILLER: But anyways, the Public

1 Adviser can at least point you to our process and how it  
2 could work for you. It may or may not, frankly.

3 MR. STANLEY: Yeah, and then I'm also disabled,  
4 so that kind of --

5 CHAIRMAN WEISENMILLER: Well, yeah we certainly  
6 try to give benefits -- we talk about diversity, we're  
7 trying to really help disabled people as part of our  
8 programs. So again, there's some preference, you know?

9 So anyway what I'm saying is, I understand trying  
10 to dig into what we do takes an investment in time and  
11 energy and you may conclude it's too complicated and it's  
12 not worth it for you. But at least that's the only way we  
13 can really operate, is under our regulations and structure  
14 that's been set up by law, frankly.

15 MR. STANLEY: Uh-huh, okay.

16 CHAIRMAN WEISENMILLER: But again, hopefully  
17 there's some opportunities for you there.

18 MR. STANLEY: There should be.

19 CHAIRMAN WEISENMILLER: But again, the Public  
20 Adviser can give you a better roadmap on that than we can  
21 talking now.

22 MR. STANLEY: Okay.

23 CHAIRMAN WEISENMILLER: Yeah, I think you were  
24 here before, but frankly we're not supposed to have  
25 discussions back and forth on public comment. But it

1   seemed like it would be useful in looking to coordinate the  
2   effort.  Nod and tell me to shut up, but anyway I thought  
3   it would be useful to give you some guidance and not have  
4   you have to come back again with the same questions.

5               MR. STANLEY:  All right, thank you very much.

6               CHAIRMAN WEISENMILLER:  Okay, sure.

7               This meeting's adjourned.

8                       (Adjourned at 12:48 P.M.)

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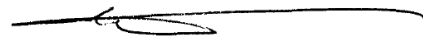
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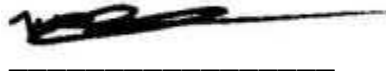
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