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CALIFORNIA ENERGY COMMISSION

In the Matter of:

Clean Energy in Low-Income        )  
  )  
Multifamily Buildings             )

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JOINT AGENCY WORKSHOP

CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET  
FIRST FLOOR, ART ROSENFELD HEARING ROOM  
SACRAMENTO, CALIFORNIA

WEDNESDAY, MAY 30, 2018  
10:00 A.M.

Reported by:  
  
Gigi Lastra

APPEARANCES

COMMISSIONERS

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Andrew McAllister, California Energy Commission

Janea A. Scott, California Energy Commission

Karen Douglas, California Energy Commission

Sandy Goldberg, California Public Utilities Commission,  
on behalf of Commissioner Clifford Rechtshaffen

Adenike Adeyeye, California Public Utilities Commission,  
on behalf of Commissioner Guzman Aceves

ENERGY COMMISSION STAFF

Heather Raitt, IEPR Program Manager

PRESENTERS

Presentation of Context of SB 350 Low-Income  
Barriers and Implementation Effort

Michael Sokol, California Energy Commission

Presentation on the Current Landscape of  
Multifamily Sector

Isaac Sevier, Natural Resources Defense Council

Presentation on the Clean Energy in Low-Income  
Multifamily Building (CLIMB) Action plan

Eugene Lee, California Energy Commission

Presentation on Utilizing Data to Better  
Understand Multifamily Buildings

Erik Jensen, California Energy Commission

Renee Daigneault, Los Angeles Better Buildings Challenge

## APPEARANCES

### Panel I

Martha Brooks, Moderator, California Energy Commission,  
Stephanie Chen, Greenlining Institute  
Meredith Milet, California Department of Public Health  
Nancy Sutley, Los Angeles Department of Water and Power  
Mary Sutter, Grounded Research and Consulting

### Panel II

Mikhail Haramati, Moderator, California Energy Commission  
Andrew Brooks, Association for Energy Affordability  
Ram Narayanamurthy, Electric Power Research Institute  
Dave Brenner, Fresno Housing Authority  
Mauro Dresti, Southern California Edison  
Alice Stover, MCE Clean Energy

### Presentation: Berkeley Convening on Finance

Ted Lamm, UC Berkeley Center for Law, Energy, and the  
Environment

### Panel III-Encouraging Investment and Market Adoption

Eugene Lee, California Energy Commission  
Deana Carrillo, California Alternative Energy and  
Advanced Transportation  
Stephanie Wang, California Housing Partnership  
Corporation  
Rich Ciraulo, Mercy Housing  
David Hodgins, Sustento Group

APPEARANCES

Panel III (continued)

Lane Jorgensen, MG Properties Group

Recap of Workshop Themes and Areas that  
Need Additional Feedback

Jeanne Clinton, Former Special Advisor for Energy  
Efficiency to the Governor's Office and CPUC

PUBLIC COMMENT

Rachel Golden, Sierra Club

Deborah Little (via WebEx written comment)

Nehemiah Stone, Stone Energy Associates

Tom Phillips

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P R O C E E D I N G S

10:03 A.M.

SACRAMENTO, CALIFORNIA, WEDNESDAY, MAY 30, 2018

MS. RAITT: Good morning. Let's go ahead and get started. Welcome to today's 2018 IEPR Joint Agency Workshop on Clean Energy in Low-Income Multifamily Buildings. I'm Heather Raitt, the Program Manager for the IEPR.

I'll go over just a few of our normal housekeeping items.

If there's an emergency and we need to evacuate the building, please follow staff to exit the building, out the doors, and go diagonally across the street to Roosevelt Park.

Please also note that this workshop is being broadcast through our WebEx recording system, WebEx broadcasting system, so it is being recorded, and so we'll have an audio recording posted in about a week, and a written transcript in about a month.

We do have a very full agenda, so I ask our presenters to please stay within your allotted time limits.

There will be an opportunity at the end of the day for public comment, and we'll allow

1 three minutes per person for comments, and first  
2 take comments from folks in the room, and then  
3 from WebEx participants and folks on the phone  
4 lines. If you do -- would like to make a  
5 comment, go ahead and fill out a blue card. And  
6 you can give it to me or our Public Adviser,  
7 who's in the back of the room. And if you're on  
8 WebEx, just use your chat function, and just for  
9 comments at the very end of the day.

10 Materials for the meeting are at the  
11 entrance to the hearing room, and they're posted  
12 on our website. And written comments are welcome  
13 and due June 13th. And the notice provides all  
14 the information for submitting comments.

15 And with that, I'll turn it over to  
16 Commissioners for opening remarks. Thanks.

17 COMMISSIONER HOCHSCHILD: Well, thank  
18 you, Heather. And thank you all to the  
19 stakeholders who are here this morning.

20 The IEPR is a little bit like the Golden  
21 Gate Bridge; as soon as you finish, you start  
22 painting it again, and that's kind of how it's  
23 been. And I really want to thank Heather and her  
24 team.

25 For those of you in the room today, I do



1 want to note that we're doing the IEPR  
2 differently this year. We're doing it in two  
3 volumes. Volume 1 was just posted yesterday  
4 afternoon. And I would really welcome all of you  
5 to take a look at that and provide comments  
6 during our two-week public comment period. And  
7 that, we're going to get done by September, in  
8 time for the International Climate Summit. It  
9 tells the story at large of California's clean  
10 energy efficiency, clean transportation  
11 innovation, and equity policies and what's  
12 happening. And then Volume 2 will get done on  
13 the normal cycle.

14           With respect to multifamily, just it's  
15 worth noting, you know, we're now in a place  
16 where the multifamily is the majority of the new  
17 construction happening in the state. It's a  
18 really critical sector, particularly with low-  
19 income. And both Commissioner McAllister and I  
20 had the opportunity in the last few weeks to  
21 visit a really impressive multifamily low-income  
22 project. I want to thank Isaac Sevier, who is  
23 here today, who helped lead that tour.

24           But with that, we'll get into it.

25           Commissioner McAllister?

1                   COMMISSIONER MCALLISTER: Well, great.  
2 We have a really substantive solid day, so I  
3 don't want to take away from all the great  
4 presentations and conversation we're going to  
5 have. I just want to highlight the importance of  
6 multifamily and build on what Commissioner  
7 Hochschild just said.

8                   Multifamily housing is really the future  
9 of California and our urban areas depend on it.  
10 We depend on it to meet our climate and energy  
11 goals, but for many, many reasons that really  
12 have nothing to do with energy at all. And so  
13 it's really a quality of life issue. It's an  
14 equity issue. It touches many, many points of  
15 policy and just equity and, I would just say,  
16 social importance beyond energy and environment.  
17 Of course, we're here because of the energy  
18 environment angles.

19                   But as a platform for innovation and  
20 technology, as well, multifamily is really  
21 surging to the fore, so it's just a perfect  
22 moment to have this conversation. I think  
23 there's so much substance along many, many  
24 different axes and many different policy  
25 directions that my hope is that we can develop

1 ideas. You know, there's a lot of great thinking  
2 going on already and we're going to unify that  
3 and sort of bring that together in this room and  
4 in the IEPR, but that we can build on it to  
5 really create something that becomes obvious that  
6 it needs more extensive policy treatment over the  
7 next year or two or more.

8           The code update that you all probably  
9 heard about that was adopted a few weeks ago at  
10 this Commission focused on single-family for the  
11 most part, and low-rise multifamily. And for the  
12 next code update, again, this is very timely  
13 conversation, for the next code update in 2022,  
14 we are going to focus on multifamily, as well as  
15 commercial, but we're really going to make a good  
16 focus of multifamily. It's overdue.

17           And so, again, you know, all the  
18 technologies that we want, if it's efficiency, if  
19 it's renewables, you know, if it's clean  
20 transportation, demand response, all of those  
21 sort of key pieces of getting to our clean energy  
22 future are there, present in earnest, in  
23 multifamily housing.

24           And so I think it's just a really good  
25 moment to have this conversation. And I really

1 appreciate everybody being here and contributing  
2 your expertise. It's a diverse area. It has all  
3 sorts of issues that I -- as I mentioned before.  
4 So I think, you know, we'll need all of your --  
5 all of your sleeves rolled up and helping us sort  
6 of navigating a good policy path, trying to  
7 identify the highest needs and then putting some,  
8 really, some resource requirements and some  
9 directions going forward on that. So thanks  
10 again for being here.

11 Commissioner Scott?

12 COMMISSIONER SCOTT: Good morning  
13 everyone. And I'm also just delighted to be here  
14 and to have the conversations that we have  
15 planned for today. We have a really amazing set  
16 of panels and panelists to hear from.

17 I'll just really echo what you heard from  
18 Commissioner McAllister in terms of our  
19 multifamily buildings here in the state really do  
20 sort of have all of the components, especially on  
21 clean energy, that we're looking at together,  
22 renewables for community solar, those types of  
23 things, energy efficiency and how do we really  
24 make all of that work together? But then we want  
25 to plug in a bunch of electric vehicles into

1 these, as well. And so how do we make sure that  
2 as we are trying to make the buildings more  
3 efficient, we aren't undercutting or balancing  
4 away from wanting to add some plug load by adding  
5 in plug-in electric vehicles to those  
6 communities?

7           And then as we're designing them and as  
8 we put them together it is, as Commissioner  
9 McAllister and Hochschild have mentioned, so much  
10 broader than really just the energy component. I  
11 mean, we're looking at how  
12 do you build smart communities? How are they  
13 walkable? How are they bikeable? How are -- is  
14 it accessible, making sure people can easily get  
15 to where they need to be in a smart way? And  
16 some of that, I believe we've got some folks,  
17 potentially later today, coming from the  
18 Strategic Growth Council, and the Transformative  
19 Climate Communities, as well. But when we think  
20 about all of this, just a smart design of  
21 communities and making sure that our low-income  
22 multifamily buildings are really a component of  
23 this in terms of the renewables, the energy  
24 efficiency, the clean transportation, all of that  
25 together.

1           So I'm very much looking forward to the  
2 dialogue today. Thank you.

3           I'll turn it to Commissioner Douglas.

4           COMMISSIONER DOUGLAS: Hi. Good morning,  
5 everybody. I think we've heard a lot from those  
6 on the dais. I agree with the comments.

7 Multifamily really needs to have this level of  
8 focus, and I'm really delighted to be here today.

9           Thank you.

10          MS. GOLDBERG: Hi. I'm Sandy Goldberg  
11 from the California Public Utilities Commission  
12 on behalf of Commissioner Cliff Rechtschaffen,  
13 who could not be here today.

14          And the Public Utilities Commission has  
15 recently approved new budgets for its multifamily  
16 low-income building energy efficiency retrofit  
17 program that is called Energy Savings Assistance  
18 Program, ESAP. And a major new component of this  
19 program is for energy efficiency measures in  
20 multifamily building common areas. So we're very  
21 hopeful that over the next few years that the new  
22 multifamily common area program will be fruitful.  
23 And we'll have a lot of lessons that we can learn  
24 on what improvements are needed going forward for  
25 this activity.

1 Thank you.

2 MS. ADEYEYE: Hi everyone. My name is  
3 Adenike Adeyeye. I'm an Adviser to Commissioner  
4 Guzman Aceves at the California Public Utilities  
5 Commissioner, and she's sorry she couldn't be  
6 here today, but this is a really important issue  
7 to her, to our office, because it's so important  
8 to make sure that California's clean energy  
9 transformation actually benefits everyone. And  
10 it's very important to get to the people who are  
11 living in multifamily buildings which, as  
12 everyone already discussed, is a lot of people in  
13 California. Making sure that it gets to low-  
14 income multifamily buildings is especially  
15 important.

16 And I just wanted to highlight that  
17 Commissioner Guzman Aceves is the assigned  
18 Commissioner for the net energy metering  
19 proceeding which is mentioned in the Climate  
20 Action Plan. And part of that scope includes a  
21 Multifamily Affordable Housing Solar Roofs  
22 Program. So we're very excited to see how we can  
23 work with other agencies, also work with all the  
24 stakeholders who are here, to try to figure out  
25 ways to make sure that this transition does

1 actually benefit everyone and does include low-  
2 income multifamily housing.

3           And thank you so much to Heather, to  
4 everyone who worked on the Climate Action Plan.  
5 It seems like it was a ton of work to do all of  
6 this and to put this together, so we appreciate  
7 it. I'm looking forward to hearing from everyone  
8 today.

9           MS. RAITT: Great. Okay, so thanks.

10           So our first speaker is Michael Sokol  
11 from the Energy Commission.

12           MR. SOKOL: All right, good morning  
13 everyone. My name is Michael Sokol and I've been  
14 serving as the coordinator role for Senate Bill  
15 350 implementation for the Energy Commission. So  
16 what I'm going to do is just give a brief recap  
17 on sort of the genesis of this Low-income  
18 Multifamily Building Action Plan, the Low-Income  
19 Barrier Study, and some broader context of SB  
20 350. I will also keep it pretty brief, just so  
21 we can jump into the, really, meat of the content  
22 today and allow the experts to get into the panel  
23 discussions.

24           So just a quick overview of SB 350.  
25 Everyone is likely very familiar with the major



1 goals, the 50 percent renewable energy by 2030,  
2 requiring a doubling of energy efficiency savings  
3 by 2030, looking at encouraging widespread  
4 transportation electrification, you know,  
5 wherever possible, all of this with a shift  
6 towards reducing greenhouse gas emissions across  
7 the energy sector. And then really a key theme  
8 throughout all of these requirements and the  
9 programs that have been developed in response to  
10 those is the need to prioritize benefits for low-  
11 income residents and those that live in  
12 disadvantaged communities, to make sure that,  
13 really, there is an inclusive clean energy  
14 economy and that we're addressing those barriers  
15 that have historically limited participation.

16           And so specifically, one of the  
17 requirements from SB 350 was the Low-Income  
18 Barrier Study. This is something that the Energy  
19 Commission was tasked with, looking at the  
20 barriers on the energy efficiency and renewable  
21 energy side. And the Air Resources Board was  
22 tasked with looking at transportation-focused  
23 low-income barriers.

24           Where the Energy Commission published our  
25 report in December of 2016, and shortly

1 thereafter the Air Resources Board has put out  
2 their report. And I'll get into a little bit of  
3 detail about some of the barriers identified  
4 throughout this process and some of the  
5 recommendations that have taken shape as a result  
6 of publication of the study. But the link is  
7 there for both reports at the bottom of this page  
8 for those that may not be familiar.

9           Just a high-level flavor of the barriers  
10 that were identified in this process, and we'll  
11 get into a lot more depth in some of these later  
12 today, but you'll notice there's a lot of  
13 parallels through the broader Barrier Study, and  
14 then the specific Multifamily Action Plan, as  
15 well. So looking at the fact that a lot of low-  
16 income residents are renters and there's not a  
17 high home ownership rate.

18           Specifically, a lot of the complexity  
19 around the multifamily building discussion, which  
20 the Barrier Study sort of scratched the surface  
21 on, and this Multifamily Building Action Plan  
22 really dives in a lot more depth, looking at, you  
23 know, not a lot of access to capital and the  
24 inability to take on significant new debts to  
25 install clean energy measures, often times older

1 buildings that are in need of upgrades, just for  
2 structural issues or other issues that may limit  
3 the ability to go in and install clean energy.  
4 And then also some unique needs for remote or  
5 under-served communities that are different than  
6 maybe the urban environment where you have some  
7 issues with different heating fuels that result  
8 in higher costs, or limited access to some of the  
9 efficiency programs that are offered.

10           And so that's kind of the structural  
11 barrier category.

12           There's also some program and policy  
13 barriers that were identified that really look on  
14 the market delivery side, inconsistent  
15 definitions was identified as a key issue,  
16 inability to sort of integrate across some of the  
17 programs. Really what we're looking at is some  
18 siloing issues, and along with those, some data  
19 limitations around inconsistent data collected or  
20 that hasn't been shared historically or isn't  
21 always on the same consistent measures. And then  
22 looking at unrecognized non-energy benefits where  
23 you look at, often times, some of these energy  
24 upgrades result in benefits that are far beyond  
25 energy savings or cost savings and can result in

1 quality of life or health and safety  
2 improvements.

3           So that's, again, just the high-level.  
4 Please refer to the Barrier Study for more detail  
5 on the specific barriers, and we'll hear a lot  
6 more about those later today.

7           But ultimately, as a conclusion, the  
8 Barrier Study recommended 12 different high-level  
9 actions that could be taken by different actors.  
10 And with each of those, there's a number of sub-  
11 recommendations, so I'm just going to touch upon  
12 a few that are very relevant today.

13           We have five principle recommendations.  
14 And really to address some of those program  
15 alignment and coordination-type of issues, the  
16 first recommendation was to get a Task Force of  
17 state agency representatives up and running.  
18 This is something that has now -- there's been  
19 lots of coordination behind the scenes for all of  
20 the agencies, with one of the deliverables being  
21 this Action Plan you see today. And so this has  
22 been such a huge collaborative effort. There's  
23 probably too many to list here that have  
24 contributed, but refer to the Action Plan itself  
25 and it has a good list of all those that have

1 chimed in and given good feedback.

2           One of the sub-recommendations for this  
3 Task Force was actually to focus issues specific  
4 to multifamily buildings. And so that's really  
5 the genesis of where this Action Plan has come  
6 from is through this Task Force and the  
7 interagency coordination effort.

8           There's a number of other recommendations  
9 that you'll hear echoed throughout the narrative  
10 today.

11           Looking at ways to include low-income  
12 customers and different solar offerings  
13 including, potentially, community solar programs.

14           Making sure that we're considering the  
15 full range of benefits of sort of clean energy  
16 upgrades that include workforce development and  
17 education goals and having a comprehensive  
18 strategy across the agencies that focuses on  
19 that.

20           Looking at ways to unlock addition access  
21 to capital and new financing opportunities that  
22 take consideration of the inability to take on  
23 new debt or things like, potentially, low credit  
24 scores or lack of access to capital.

25           Looking at ways that across the agencies,

1 we can develop a consistent set of metrics and  
2 share data and track things systematically across  
3 the whole state and across the various programs  
4 that are offered.

5           And so this is kind of the core set of  
6 principle recommendations from the Barriers  
7 Study. There were seven additional  
8 recommendations. And really, again, there's a  
9 lot of meat to these, so I would refer you to the  
10 Study to dig into them.

11           But at a high level, we already talked  
12 about expanding opportunities for renewable  
13 energy for low-income customers, looking at ways  
14 to align tax credits and use some of the  
15 information from tax events to align clean energy  
16 upgrade opportunities.

17           Thinking across the programs from more of  
18 a customer-oriented approach to a one-stop shop  
19 kind of a mechanism. This is relevant, also in  
20 the multifamily side, as well, where we heard a  
21 lot of feedback on the need for a one-stop shop  
22 on the multifamily side, particularly for  
23 building owners that often times struggle, not  
24 knowing where to go for all these various program  
25 offerings.

1           We want to consider consumer protection,  
2 of course. As there's more opportunities, you  
3 want to make sure that low-income folks are safe  
4 and protected and that there's trust built into  
5 the system. So along that same line, working  
6 with qualified community-based organizations that  
7 know the local communities, know the residents,  
8 and sort of have a local trusted voice in the  
9 community that can serve as liaison in between  
10 some of the state-administered programs and the  
11 local needs.

12           And then, lastly, just a couple of items  
13 of looking at ways to align some of our research  
14 program offerings to target benefits for low-  
15 income and disadvantaged communities. And then  
16 looking -- and this was sort of a third  
17 requirement of the Barrier Study, is looking at  
18 ways to increase small business contracting  
19 opportunities in disadvantaged communities.

20           And so that rounds out the whole list of  
21 our 12 recommendations. And I just wanted to  
22 mention, too, that this is from the Energy  
23 Commission study that released 12  
24 recommendations. The transportation-focused  
25 study on the Air Resources Board side also has a

1 range of recommendations, as well. And so both  
2 agencies, along with the PUC, along with the  
3 whole range of other state agencies have been  
4 working closely together to actually implement  
5 these recommendations. And so that's -- we'll  
6 hear a lot more about some of those steps that  
7 have been taken today.

8           There's a couple I do just want to  
9 highlight for folks that may not already be  
10 aware. This relates to the Recommendation 5 from  
11 our study which is looking at better ways to  
12 utilize data and track performance over time.  
13 There's an energy equity indicator tracking  
14 progress report that the Energy Commission has  
15 taken the lead on developing, in coordination  
16 with all the others, as well, and lots of public  
17 feedback, that looks at tracking progress of four  
18 different clean energy programs over time as they  
19 are performing in low-income and disadvantaged  
20 communities. And this is also serving as a  
21 tracking mechanism for implementation of the  
22 Barrier Study recommendations.

23           There is a draft Track Progress Report  
24 that's posted right now on the Energy  
25 Commission's website. There's the second link



1 you see here, where we had an initial sort of  
2 framework paper published last year. There's the  
3 draft Tracking Progress itself available now. And  
4 we're working towards a final, which should be  
5 coming next month.

6           As we publish this final Tracking  
7 Progress Report the idea is to move towards more  
8 of an interactive mapping tool that will allow  
9 stakeholders to go on it, conduct their own  
10 analysis, focus in on different regions, and  
11 then, you know, sort of build the picture of what  
12 story that they're trying to tell. And then on  
13 the static Tracking Progress Report, there will  
14 be an annual update, as consistent with our other  
15 Tracking Progress Reports that are done here.

16           I would encourage everyone to go check  
17 out the links here and go, you know, familiarize  
18 yourself with the system. I think it's a very  
19 good start, but there's still additional work to  
20 be done to build out the picture, specifically on  
21 the multifamily side as we move forward. And  
22 we'll hear some about the data limitations and  
23 potential actions to move that forward later  
24 today.

25           Another effort that I just wanted to

1 point folks to that's related to SB 350  
2 implementation is the Joint Agency Public  
3 Utilities Commission and Energy Commission  
4 Disadvantaged Community Advisory Group. This was  
5 a requirement of SB 350. There was a kickoff  
6 meeting that was held earlier this year, just a  
7 couple of months ago, here in Sacramento. And  
8 then going forward, there will be quarterly  
9 meetings. But really the intent of this body is  
10 to review and provide advice to the agencies on  
11 proposed programs and sort of how they are  
12 impacting disadvantaged communities to make  
13 improvements moving forward.

14           And so there's, as you can tell, a number  
15 of key coordinating bodies and mechanisms to try  
16 and really make sure that the Energy Commission,  
17 the PUC and other agencies are being responsive  
18 to the needs of low-income customers and  
19 disadvantaged communities.

20           Just at a quick high level, the next  
21 steps are, you know, we'll continue to coordinate  
22 amongst the agencies through this Task Force  
23 mechanism, but through, also, meetings like this,  
24 key workshops and roundtable discussions, et  
25 cetera.

1           Outside of the interagency coordination,  
2 making sure that we're going back out, engaging  
3 with communities, understanding what the local  
4 needs are, even doing regional outreach, as  
5 needed, to make sure that we're, you know, coming  
6 to folks, where we realize it's not always  
7 possible for everyone to come here in Sacramento  
8 and join a workshop like this.

9           And then like I mentioned, tracking  
10 process on the energy equity goals, and also the  
11 larger SB 350 goals, many of which are relevant  
12 today. So where we have energy equity in the  
13 Barrier Study as kind of the genesis of this  
14 Action Plan, there's implications for things like  
15 the energy efficiency doubling, the renewable  
16 energy goal that's here in California, and  
17 ultimately towards the decarbonization push that  
18 is really a key focus moving forward.

19           So with that, I will leave it here. And  
20 I'm happy to take any questions from  
21 Commissioners, or otherwise we'll kind of  
22 continue moving through the agenda.

23           MS. RAITT: Thanks, Mike.

24           Next is Isaac Sevier from Natural  
25 Resources Defense Council.

1           MR. SEVIER:  Hi everyone.  Good morning.  
2  I want to thank the Commission staff for inviting  
3  me to come and speak with you today and share  
4  what I believe are some of the most important  
5  highlights for us in the room to understand about  
6  the state of clean energy and low-income  
7  multifamily housing as we kick off the rest of  
8  our discussion today.

9           My name is Isaac Sevier and I work at the  
10 Natural Resources Defense Council, which is an  
11 international environmental nonprofit group.  And  
12 specifically, I spend my time building the  
13 California network of Energy Efficiency for All,  
14 which is a national partnership advancing healthy  
15 and affordable energy solutions for under-served  
16 renters.

17           Before I dive in, I want to just note  
18 that it would pretty much be impossible for me to  
19 really cover the breadth and depth of every clean  
20 energy technology with the attention that it  
21 deserves.  Rather than do a disservice to  
22 renewables, energy efficiency, distributed  
23 storage and electric vehicles, I chose to keep my  
24 remarks at a pretty high level about the state of  
25 clean energy in low-income multifamily.

1           Over the next 15 minutes, I'm going to  
2 attempt to do three things. I want to describe  
3 what I think is an emergency in motion, as we  
4 talk about the widening gap for Californians in  
5 terms of clean energy access. While we're on our  
6 way to cleaning up our grid and decarbonizing the  
7 fifth largest economy in the world, the poorest  
8 people among us simply can't access the same  
9 benefits that we have. Secondly, I'm going to  
10 try to characterize the fundamentals of the  
11 multifamily properties that house nearly 18  
12 percent of California households. And last, I'll  
13 cover briefly some barriers that are really  
14 specific to the building sector and the benefits  
15 to be had in overcoming them if we really tackle  
16 this effectively.

17           Today, 40 percent of households in  
18 California are low-income. Low-income is defined  
19 often for program eligibility as 200 percent of  
20 the federal poverty level, which in 2018 for a  
21 family of four is \$50,000. If you qualify as  
22 low-income, you're likely to be also someone who  
23 rents your home. You're likely, as we've talked  
24 about already, to be living in multifamily  
25 housing. And you're also likely to be non-White.

1 You're likely to be elderly or being -- taking  
2 care of someone who is elderly.

3           And for the purposes of this  
4 conversation, it's important to note that you're  
5 very likely to face high levels of energy  
6 insecurity, which means that you're not just  
7 struggling to pay your energy bills but, in fact,  
8 you're making tradeoffs between food, housing,  
9 medicine and energy. And if not -- if we don't  
10 come up with interventions on this, it really  
11 produces long-term health outcomes, and I've  
12 listed a few here, some of the most serious of  
13 which are higher rates of respiratory problems,  
14 heart disease. And some of our health friends  
15 are even telling us it has severe implications  
16 for life expectancy.

17           Meeting an energy burden in low-income  
18 households in California is two times as high as  
19 for all households. And I'm showing you a graph  
20 that points out what this looks like across six  
21 of the largest metropolitan statistical areas  
22 here in the state.

23           So in San Diego, what you're seeing is if  
24 you're living in a low-income multifamily  
25 household, you're paying four percent of your

1 income for energy, compared to two percent that  
2 everybody else pays.

3 I want to note that this graph doesn't  
4 include any information about our communities in  
5 the Central Valley because they weren't included  
6 in the source study, and this is because they're  
7 not part of a metropolitan statistical area. So  
8 I think this sort of further highlights the fact  
9 that if we rely on some of the known data, we're  
10 going to miss out on a large part of our  
11 population who are living in even hotter climate  
12 zones than our coastal population. And  
13 comprehensive approaches and solutions really  
14 need to take them into account.

15 So let's -- that's kind of the human  
16 implication of this emergency that described.

17 I want to talk a little bit about where  
18 these folks are living. And remember that we  
19 just saw this, 40 percent of Californians have  
20 low-incomes, and 44 percent of those households  
21 are living in rented multifamily housing,  
22 accounting for more than six-and-a-half million  
23 people.

24 So from the chart on the right we can see  
25 that it's divided up into -- the classifications

1 are divided up into how many units are in each  
2 building. So when we talk about multifamily  
3 programs, you'll often see programs that are  
4 designed to target buildings with five or more  
5 units. Then there are other programs that might  
6 address buildings with just two to four units.  
7 Together, these make up that 44 percent.

8           Next, I want to talk about just the  
9 vintage of housing that we're talking about. The  
10 majority of low-income multifamily housing was  
11 built prior to 1980, and these represent the most  
12 significant opportunity for envelope (phonetic)  
13 and equipment measure upgrade.

14           So if you're looking at this graph with  
15 me, you'll see that five-plus unit buildings, 45  
16 percent were built before 1970, and another 14  
17 percent were built between 1970 and 1974. And  
18 you can kind of add up the numbers yourself to  
19 see that 80 percent of the five-plus unit  
20 properties were built before 1980, and 70 percent  
21 of those two- to four-unit properties.

22           So even, if we look up the scale, we even  
23 see that properties that were built around 1990,  
24 if we think about where we are today in 2018,  
25 we're talking about buildings that are



1 approaching 30 years old. And technologies, as  
2 far as energy efficiency and renewables, has  
3 changed a lot in that time. And we'll have to  
4 make significant investments in a much older  
5 stock.

6           So the ownership of multifamily housing  
7 is where it starts to be really complex. And  
8 I'll kind of recall for you guys that six percent  
9 of multifamily housing is what's called rent  
10 assisted, meaning that it's subject to really  
11 complex federal requirements. This housing is  
12 often owned by either large corporations or by  
13 nonprofit groups.

14           And in contrast, the bulk of market rate  
15 low-income housing is owned by individuals. And  
16 I want to make a note that this is not market  
17 rate in the sense that you can go on Craigslist  
18 and see that the rents are kind of comparable to  
19 everybody around them, but that they're  
20 specifically market rate low-income, which is a  
21 term of art that often hides the fact that this  
22 housing would be unacceptable if you could just  
23 pay more to get out of it.

24           Well, the main takeaway here is that the  
25 ownership structures are very different depending

1 on whether or not you're talking about rent  
2 assisted properties or whether you're talking  
3 about market rate. And as a result, it's really  
4 hard to just paint with one broad brush and say  
5 this solution will fit everybody when we talk  
6 about the low-income multifamily space.  
7 Especially for corporate ownerships in this  
8 space, it presents a number of financial barriers  
9 that I'll kind of address a little bit later.

10 I was asked to kind of include this  
11 statistic for you that highlights the geographic  
12 location of low-income multifamily buildings.  
13 Sixty-eight percent of all low-income multifamily  
14 housing is in just six counties.

15 This is just one example of how the state  
16 agencies who are tasked with, you know, meeting  
17 the goals of SB 350 could think about  
18 prioritizing their efforts. But I did a little  
19 bit of work and thought, if I waited at all on  
20 disadvantaged communities in this, you would  
21 actually see the last two counties fall off of  
22 this graph, and you would add a lot of our  
23 Central Valley communities, including San  
24 Bernardino, Kern County, Fresno County,  
25 Sacramento and San Joaquin Counties.

1           But I say this to highlight the fact that  
2 it might be easy to say, where are the  
3 multifamily buildings? But that doesn't  
4 necessarily correspond to where are the energy  
5 savings and the energy gains to be had in low-  
6 income and multifamily housing.

7           So, so far I've shown a lot of  
8 information just about the building stock,  
9 without covering the actual energy efficiency or  
10 renewable energy potential that's here. And some  
11 of that is just because we don't have as robust  
12 studies as we'd like to really evaluate the  
13 potential that exists.

14           But we do know from practice that  
15 existing programs are realizing those savings.  
16 So the Community Services and Develop Low-Income  
17 Weatherization Program has been able to achieve  
18 44 percent energy savings in its low-income  
19 multifamily treatments.

20           Some of that tremendous success is  
21 focused -- is because the program is focused on  
22 achieving greenhouse gas reductions rather  
23 than -- and, thus, can kind of like holistically  
24 treat a building rather than splitting up its  
25 attention between what's going on in the tenant

1 unit versus in the common area spaces of the  
2 building.

3 Another really promising program that was  
4 alluded to earlier on the dais is the Solar on  
5 Multifamily Affordable Housing Program, which is  
6 going to install 300 megawatts of solar over the  
7 next ten years and has been specifically designed  
8 to figure out how to deliver benefits, not only  
9 to the building owners, but to the tenants first.

10 I think everyone in the room is probably  
11 really familiar with the split incentive problem,  
12 which is also described like at length in the SB  
13 350 Barriers Report. And if you're not familiar,  
14 the barrier really represents the building owners  
15 lack of incentive to invest in housing if they're  
16 not seeing a direct benefit. So a question you  
17 might hear is why should I, a building owner, try  
18 to save my tenants money when I'm not paying  
19 their bill and when I don't accrue the benefit of  
20 that investment?

21 Programs like LIWP and SOMAH, which I've  
22 already mentioned, are really creatively  
23 addressing this problem through providing really  
24 robust technical assistance and deliberate  
25 design, a design that emphasizes the benefits

1 that are delivered to the whole building and to  
2 the tenants.

3           The utility programs that exist aren't  
4 able to address the building holistically because  
5 of how they've been designed. So they are tasked  
6 with delivering benefits to folks in their units  
7 and then, separately, the common areas of those  
8 buildings. And this gets into -- or this brings  
9 up a problem of metering and how we are able to  
10 aggregate the metering data for a building. So  
11 if you're a building owner, you might not have  
12 access to see just how much energy your residents  
13 are consuming. And I believe that the next  
14 presentation will get more into this problem for  
15 us.

16           Apart from the split incentive problem,  
17 another really significant issue in implementing  
18 programs here is addressing the financial -- is  
19 addressing the knowledge around programs that are  
20 available and incentives available for building  
21 owners. And this graph that I'm showing you from  
22 the CADMUS study in 2013 shows that a majority of  
23 market rate owners and rent assisted owners  
24 aren't aware of state programs or utility rebates  
25 that are available to them.

1           And one of the reason, I believe, for  
2 this is that there's actually a source of good  
3 financing options for them. So it's not that  
4 they have just ignored completely the incentives  
5 that are available, but that when asked -- when  
6 answering this question, they're saying there  
7 aren't programs that I can actually take  
8 advantage of that I know of.

9           So the problem can be overcome with good  
10 models. And we're seeing that in real-time with  
11 the implementation of WYWTH, with the  
12 implementation of SOMAH. But it's a problem  
13 that's compounded by the fact that these  
14 financial barriers are complex.

15           So earlier I alluded to the fact that the  
16 ownership structures for these properties have  
17 many different players. And with these several  
18 groups of stakeholders, they each hold veto power  
19 over financial decisions, and they each have  
20 different priorities that they might be trying to  
21 accomplish in different ways.

22           The current knowledge about how to sort  
23 of address this is to provide incentives and to  
24 provide larger incentives that allow them to skip  
25 past the multi-stage approval process. For

1 building owners, the ability to implement some of  
2 these programs really comes up front in the  
3 planning. If they can't navigate these programs  
4 easily and see that the savings are going to be  
5 worth even the time that they're investing in  
6 walking through them, they might skip them in  
7 favor of an easier way to raise revenue, which  
8 would be by just raising the rent, instead of  
9 focusing on reducing costs.

10           So I'm really gratified to see everyone  
11 in the room today and for the attention from the  
12 Commission on this issue because the challenges  
13 before us in addressing the expansion of clean  
14 energy really get to long-term health benefits.  
15 And I think that this is a piece that gets lost  
16 sometimes when we talk solely about energy  
17 efficiency savings or we talk about access to  
18 more solar megawatts.

19           And I think it's -- what I want to point  
20 out here is that there are a lot of experts  
21 across different state agencies that are thinking  
22 about the built environment and are thinking  
23 about the energy savings in a more holistic  
24 sense.

25           So the Oak Ridge National Lab did a study

1 of some of the federal energy efficiency programs  
2 and found that when we improve clean energy  
3 access, we actually achieve a large number of  
4 non-energy benefits. And the majority of those  
5 benefits came in the form of health benefits.

6           So earlier I talked about how folks who  
7 are living in low-income and multifamily housing  
8 could really benefit from sort of reduced thermal  
9 stress, both in heat and cold. They would see  
10 massive improvements in quality of life by being  
11 more comfortable in their homes. And you see  
12 those through improvement in prescription drug  
13 adherence, and also a reduced economic need for  
14 food assistance.

15           So today as we continue to hear from  
16 terrific experts across the board, I really want  
17 to encourage everyone to think about how we can  
18 move the status quo forward when we talk about  
19 treating low-income families here in California.

20           The question for me today is not how do  
21 we just address the entire multifamily sector,  
22 but how do we improve the lives of Californians  
23 that are living without adequate incomes that are  
24 making those tradeoffs that I mentioned before,  
25 the tradeoffs between energy, between housing,



1 food and medicine. And I think that we need to  
2 have the courage to commit to putting our best  
3 practices to work and drawing across all the  
4 knowledge that we have in the room already to set  
5 really significant targets in the next IEPR.

6 We already know that today the sector is  
7 vastly under served. And I hope that this Action  
8 Plan will take a bold stance on how to change the  
9 picture that I've shared with you today.

10 And now I'll take some questions, if you  
11 have them.

12 COMMISSIONER SCOTT: I had a question for  
13 you back on -- oh, my slides don't have -- this  
14 one doesn't have a number. It was the ownership  
15 of multifamily housing is complex. And you  
16 mention the difference between kind of market  
17 rate low-income and low-income. Could you tell  
18 us just a little bit more about that? It was a  
19 definition that you gave and it went by really  
20 fast, so I just want to make sure it's clear.

21 MR. SEVIER: Sure. I think the  
22 distinction I was trying to make was between what  
23 we often -- that the graph is labeled rent  
24 assisted and market rate. And I just didn't want  
25 anyone to think that this is market rate in the

1 same way that you might go out and find an  
2 apartment on Craigslist, say in the Bay Area, and  
3 you'll notice that rent is, you know, \$3,000 a  
4 month for a shoebox.

5           We're talking about market rate low-  
6 income, which is often really poor conditioned  
7 housing, so it's housing that might not be  
8 showing up in real estate listings. It's your,  
9 you know, friend's cousin's apartment in his back  
10 yard that's really his garage; right? It's stuff  
11 that is really uninhabitable, but because of the  
12 income levels that these folks are at, that's  
13 what they're left with.

14           COMMISSIONER SCOTT: Thank you.

15           COMMISSIONER HOCHSCHILD: I just wanted  
16 you to talk a little bit more about the sub-  
17 metering and how significant a challenge that is  
18 and what the benefits would be of getting that  
19 right.

20           MR. SEVIER: So I don't want to harp on  
21 kind of like the difference between sub-metering  
22 and master metering in these buildings, but  
23 really note that program design, when meant to  
24 address buildings holistically, are able to look  
25 at the energy use, both in tenant spaces and in

1 non-tenant spaces, like hallways, water heating,  
2 pools or otherwise; right? And that in the way  
3 that industrial and utility programs are set up  
4 today, they're required to treat them separately.  
5 So through better program design, we can achieve  
6 the savings that we know are out there because we  
7 see them in the Low-Income Weatherization  
8 Program. But the issue of that data collection  
9 in the current program structure is a big  
10 roadblock.

11 COMMISSIONER HOCHSCHILD: Thank you,  
12 Isaac.

13 All right, should we move on to Eugene  
14 Lee?

15 MS. RAITT: Thanks. So our next speaker  
16 is Eugene Lee from the Energy Commission.

17 MR. LEE: Good morning. My name is  
18 Eugene Lee and I'm the Residential Supervisor in  
19 Existing Buildings. I currently manage a small  
20 but brilliant team of energy avengers, I call  
21 them, in the Existing Buildings Office. This is  
22 a fabulous piece of work. I'm very proud of this  
23 76-page document. And bear with me as I try to  
24 fast forward very quickly of what the contents  
25 are.

1           Today, we'll be walking through the  
2 characteristics of the multifamily sector. I'll  
3 just breeze through it very quickly because we've  
4 already received some excellent information  
5 before, as well as the SB 350 implementation.

6           What is the CLIMB? And what are our  
7 goals today, and our next steps?

8           As we learned, there are three principle  
9 segments in the multifamily housing world. We're  
10 speaking of the deed restricted, serving low-  
11 income households, but we also have a market rate  
12 component that is actually two subsets, where  
13 they are inhabited by low- and moderate-income  
14 households, but also household incomes that are  
15 sufficient to meet the rent levels. But  
16 nonetheless, it should be recognized that within  
17 this housing stock there's probably an  
18 overburden, as we all know. And there's probably  
19 an overcrowding problem, also, within this  
20 segment.

21           These are some statistics, and  
22 recognizing about the energy burden, as well as  
23 the households and the age these points were  
24 previously made. We'll be talking about  
25 coordination quite a bit.

1           So although the multifamily housing is  
2 often deed restricted, I think we need to  
3 recognize that, also, you cannot actually deed  
4 restrict an energy burden. These households are  
5 very challenged.

6           As Mike explained, the guardrails of this  
7 study are fully contained within the SB 350  
8 implementation. It comes out of the  
9 Recommendation 1D (phonetic), to actually develop  
10 a comprehensive plan focusing on these improving  
11 clean energy opportunities.

12           So what is CLIMB? It's a great acronym.  
13 And I wanted to begin with just a quote of a very  
14 famous mountain climber, Muhammad Ali, who said  
15 this, "It isn't the mountains ahead to climb that  
16 wear you out, it's the pebble in your shoe."

17           Today our discussion is about talking  
18 about those pebbles, those obstacles, those  
19 things, those irritants that are really  
20 preventing us to succeed. You'll see in this  
21 slide that multi agencies must collaborate. And  
22 this slide recognizes the principle partner  
23 agencies that my staff and myself have partnered  
24 with and met one on one. This Action Plan the  
25 content of participating state departments. And

1 for that reason, that must be recognized.

2           The trail on this multifamily summit,  
3 it's old. It's been traveled by many smart  
4 professionals in this room. And it's been  
5 evidenced by other research and analysis efforts.  
6 This does not dismiss those efforts at all, but  
7 in these one-on-one meetings, we have seen  
8 renewed enthusiasm for a holistic approach to  
9 improving state programs. So instead of siloing  
10 programs by agencies, we seek to coordinate and  
11 ease that administrative and technical burden for  
12 the applicants.

13           We join together because we have a  
14 collective vision of these kind of benefits that,  
15 yes, clean energy resources for owners and  
16 residents of multifamily buildings needs to be  
17 improved, and there are benefits to distributed  
18 energy resources. Essentially, CLIMB is a  
19 collaborative and a collective vision of these  
20 benefits.

21           Today's purpose of the Climate Action  
22 Plan is to identify those early actions to  
23 improve those existing programs and lay out those  
24 data gathering and collaboration building that we  
25 have started to develop those long-term

1 solutions. Our aim is to be adept and very  
2 forward-thinking in this Action Plan and to keep  
3 climbing.

4           These are our five trail markers, so to  
5 speak, as we climb this, and they're reflected  
6 here. We're expanding coordination, recognizing  
7 the existing programs that are among us. Do we  
8 have a cohesive understanding of the multifamily  
9 market? And what are those lessons learned, so  
10 that we can recalibrate those existing programs  
11 and help us jettison to a future program design,  
12 examining very closely about identifying  
13 additional resources and the gaps and increasing  
14 the outreach awareness and access as previously  
15 stated. Allow me to walk through each of these  
16 individually.

17           Expanding the coordination. Our goal is  
18 to harmonize the professional voices and to make  
19 sense to the implementors and the beneficiaries,  
20 so that we understand that there's this  
21 coordination barrier. How do we actually  
22 qualify? What are the definitions and the  
23 language that we use for multifamily, or even  
24 low-income? So we leverage our current efforts  
25 and we align.

1           Number two, we're seeking to understand  
2 the multifamily market. We're developing, I  
3 emphasize, a cohesive understanding of the  
4 multifamily market, so that now we're framing  
5 ourselves into and statements and no longer  
6 either/ors. We're thinking of buildings and  
7 behavior, not buildings of behavior. We're  
8 connecting the dots. We're gathering data on  
9 understanding this multifamily sector.

10           I spoke of program design. And we're  
11 seeking to improve the existing and future  
12 program design, understanding that there are  
13 statutes and regs and guidelines and policies  
14 that bind programs. That's fine. However, our  
15 goal is how do we actually make these programs  
16 locally impactful, getting to the ground level of  
17 effectuating that change? How are these programs  
18 limited by geography? How are we examining the  
19 respective territories and how they serve  
20 disadvantaged communities in extreme climate  
21 zones, and those people who are living in those  
22 communities and rural areas?

23           It is a resource problem, so it's  
24 identifying the additional resources and the  
25 deployment opportunities. And it isn't just a



1 question of whether there's sufficient resources,  
2 but also understanding that we apply resources  
3 intelligently to fill the gap. What exactly is  
4 the unmet need? Again, we're designing with the  
5 and in mind, the  
6 A-N-D. We're looking at triggering events at the  
7 time of rescindication of low-income housing tax  
8 credit projects. How are we prioritizing the  
9 leverage of matched funding where sources are  
10 launched and available, but aren't necessarily  
11 connected together and woven together? And moving  
12 beyond an incremental approach to retrofits.

13           But education is critical. And our goal  
14 is to remove and correct the misunderstandings,  
15 the perceptions and biases by providing that  
16 education. This is what I call the human element  
17 of the Action Plan. And this recognizes and  
18 seeks to understand the low-income households and  
19 the disadvantaged communities. We understand  
20 that 54 percent of the low-income people use a  
21 primary language other than English. This is  
22 stated in our Barriers Study. How do we train  
23 and make a workforce accessible, and that also  
24 achieves the goal of consumer protection?

25           We understand there are challenges. I

1 think we can all agree in this room about that.  
2 We're onboard about coordination. But allow me  
3 to emphasize that and ask the question: Exactly  
4 what is our vision of what could be in the  
5 future? What can be improved? What would it  
6 look like?

7           Today, we are seeking feedback. We have  
8 the Action Plan available, but have we considered  
9 additional barriers? We have identified strategy  
10 timelines. Are they appropriate? Are they  
11 aggressive? Are they too relaxed? And allow me  
12 to emphasize, how are we -- are we doing enough  
13 working with local governments? We understand  
14 that state and local leadership, and we need to  
15 think statewide but act locally. And engaging in  
16 local governments and the local level is  
17 necessary in order for us to be successful.

18           Public comments are due this month on the  
19 13th. Our aim is to finalize the CLIMB Action  
20 Plan in August with a results workshop at the end  
21 of August, preparing ourselves for September 12th  
22 through 14th, the Global Climate Action Summit.

23           Thank you.

24           COMMISSIONER MCALLISTER: Thanks very  
25 much, Eugene. I wanted, first of all, to thank

1 you and your team. I know this plan is of  
2 interest to the Governor's Office and really  
3 across the board, and certainly is one of the  
4 sort of, I think, visible and important  
5 recommendations from the Barriers Study. And,  
6 you know, you and your team just jumped to this  
7 with full energy and open minds and really a lot  
8 of willingness to collaborate and listen, and I  
9 think it's reflected in the draft.

10           Having said that, you know, this is a  
11 tough nut to crack, as you've made repeatedly  
12 clear. And, you know, we need creativity, we  
13 need commitment, and we need long-term energy,  
14 really, effort to get there.

15           Let's see, I wanted to also just bring  
16 up, you know, the fact that -- really to exhort  
17 everyone here to think about how to prioritize,  
18 really focus on concrete steps and help us make  
19 this thing better. I mean, your comments are  
20 really going to go into a very willing process  
21 that, you know, we really want to make this plan  
22 better and as concrete and implementable as  
23 possible, be able to argue persuasively for the  
24 resources that it needs, and so I think that's a  
25 team effort. It's not just the Energy Commission

1 sort of putting that on our back and going  
2 forward, although that's a big part of it. It's  
3 also, you know, whoever we're trying to influence  
4 on this needs to hear from multiple parties that  
5 have some gravitas and are well informed. And so  
6 I think we -- it's, in that sense, also it's a  
7 team effort.

8           I want to point out, just from my own  
9 silo here, you all probably know that AB 802  
10 produced a regulatory process that ended up with  
11 a benchmarking program for multifamily and  
12 commercial buildings above 50,000 square feet.  
13 We have regs in place. That program is live and  
14 it will require multifamily, medium and large  
15 multifamily buildings to do a benchmarking as of  
16 June 1 of 2019, okay? 2018 is the commercial  
17 requirement, and then a year later, 2019 on June  
18 1, the multifamily requirement. So that's going  
19 to produce a beautiful stream of information  
20 about our multifamily household stock through  
21 Energy Star Portfolio Manager, which many of you  
22 may be familiar with.

23           So, for example, it would be wonderful if  
24 stakeholders, you know, you all here and others  
25 could put on your thinking caps and say, okay,

1 well, gosh, what could we do with that data? You  
2 know, what -- you know, how can we use that data  
3 to produce program ideas, to produce good policy,  
4 to inform the legislature, to inform us here at  
5 the Energy Commission and the Public Utilities  
6 Commission, really sort of use it for good. And,  
7 you know, the disclosure piece of this comes a  
8 year later

9           So, you know, in 2020 on January 1, all  
10 the multifamily building owners that have been  
11 subject to the requirement for benchmarking will  
12 see their buildings -- you know, essentially look  
13 at the map of all these buildings and you'll have  
14 a number floating over your building. Well,  
15 that's, you know, that's potentially a motivation  
16 for some investment in those buildings. Well,  
17 how do we leverage that disclosure moment? You  
18 know, what does that come along with in terms of  
19 outreach and education? What levers can we sort  
20 of pull alongside both the disclosure  
21 requirement -- or the benchmarking requirement  
22 and the subsequent disclosure?

23           So we want to be impactful. And you all  
24 know this market better than we do, and so how  
25 can we make sure that we're just pushing in the

1 right ways and in the directions and with the  
2 right level of force, you know, carrots and  
3 sticks and all that good stuff, so we can get  
4 some real results? You know, the econ policy  
5 demands it, and also our justice concerns.

6 So anyway, I wanted to just mostly thank  
7 Eugene and the team, but also say that this is a  
8 first important step and we really need a better  
9 collaboration to make it better, so thanks.

10 COMMISSIONER HOCHSCHILD: Any other  
11 questions of comments for Eugene?

12 I just want to say, great acronym, CLIMB.  
13 We have some terrible acronyms in state  
14 governments, and this is -- CLIMB is really well  
15 done, so, yeah, I know. All right, thank you,  
16 Eugene.

17 MR. LEE: You're welcome.

18 MS. RAITT: Thanks. So good segue.

19 The next presentation is on using data to  
20 better understand multifamily buildings, and it's  
21 a joint presentation with Erik Jensen of the  
22 Energy Commission and Renee Daigneault from Los  
23 Angeles Better Buildings Challenge.

24 MR. JENSEN: Good morning everyone. My  
25 name is Erik Jensen. I work here in the Existing

1 Buildings Unit. I led the development of our  
2 benchmarking regulations which went into law on  
3 March 1st and I'm working on the implementation  
4 of those regulations now. I'm going to talk  
5 briefly about Assembly Bill 802, what that did  
6 for whole building data access in the state. And  
7 I'll talk a little bit about the requirements of  
8 the benchmarking regulations. And then  
9 someone -- Renee is going to talk specifically  
10 about the local benchmarking program that  
11 happened at City of Los Angeles.

12           So Assembly Bill 802 had two -- had a  
13 variety of provisions related to energy. There  
14 are only two that are relevant in this context.  
15 First of all, it required utilities to provide  
16 whole building energy use data upon request of a  
17 building owner or owner's agent. And we'll get  
18 into the specific buildings to which this applies  
19 a little later, but this is a big deal. So with  
20 a few caveats regarding customer permission,  
21 which I can get into later, it definitively says  
22 that utilities need to provide energy use data  
23 upon request to a building owner, in most cases  
24 without requiring individual customer permission.  
25 So that's an important step in getting building

1 owners' information about how their buildings are  
2 operating.

3           Secondly, it directed the Energy  
4 Commission to create a program for benchmarking  
5 and reporting large buildings and publicly  
6 disclosing information about those buildings.  
7 And so these are two distinct but related  
8 provisions.

9           So covered buildings are the buildings  
10 for which utilities are required to provide  
11 energy use data upon request. There's no square  
12 footage threshold for these buildings, so they  
13 can be of any size. And this applies to  
14 buildings with no residential utility accounts or  
15 five or more residential utility accounts. So  
16 again, no square footage threshold. This is the  
17 entire set of buildings for which energy use data  
18 is required. And again, the building owner,  
19 whether it's for participating in the  
20 benchmarking program, or for any other reason,  
21 the building owner has access to the energy use  
22 data.

23           A subset of covered buildings are  
24 disclosable buildings. Those are the buildings  
25 for which building owners are required to report



1 to the Energy Commission and for which we will,  
2 again, beginning next year start publicly  
3 disclosing the data, and those are buildings  
4 larger than 50,000 square feet with either no  
5 residential utility accounts or 17 or more  
6 residential utility accounts.

7           And let's see, I think I -- there we go.  
8 So here are the dates for the reporting and the  
9 public disclosure. Commercial reporting began  
10 this year. June 1st is the regulatory deadline  
11 for that, and that's an annual reporting  
12 requirement to the Energy Commission. And public  
13 disclosure will begin next year. Residential  
14 buildings begin one year later for both. So  
15 reporting will start next year and public  
16 disclosure will begin in 2020 for the residential  
17 buildings.

18           So this provides sort of two separate  
19 levels of information. The first is for the  
20 covered buildings, building owners can get their  
21 information, participate in efficiency programs  
22 or, again, use that information for whatever they  
23 want to. For the disclosable buildings, which is  
24 the subset of the covered buildings, there will  
25 be public disclosure. And so that provides this

1 information to prospective owners, prospective  
2 tenants. They can get -- have better information  
3 about buildings they're considering purchasing or  
4 moving into. It provides -- and so we're really  
5 hoping that will sort of motivate the market to  
6 improve buildings voluntarily. There are no  
7 requirements in this benchmarking program beyond  
8 reporting to the Energy Commission.

9           So some of the local programs often  
10 require audits, retrocommissioning, and then even  
11 improving the building coming up in New York  
12 City, as an example, but this one stops at  
13 reporting to the Energy Commission. And so  
14 that's -- the data access provision for the  
15 covered buildings is what local programs can  
16 build upon when they -- if they want to have a  
17 local benchmarking program that exceeds the  
18 requirements of the state program, and Renee is  
19 going to talk about that next.

20           Here is contact information for me and  
21 our program in general. If you've got questions  
22 about compliance, what's required, please use the  
23 bottom email address there. That's for our  
24 hotline. If you've got more sort of policy-type  
25 questions or questions about the background of

1 the program, please contact me at the information  
2 up above.

3 And with that, I will hand it over to  
4 Renee.

5 MS. DAIGNEAULT: Okay, good morning.  
6 First, I'd like to thank the Commission for the  
7 opportunity to share this information. I'm going  
8 to be providing some background on the  
9 benchmarking ordinance in Los Angeles, which is  
10 now in its second year.

11 So my name is Renee Daigneault. I'm the  
12 Program Operations Manager for the L.A. Better  
13 Buildings Challenge. And we staff the L.A.  
14 Energy and Water Efficiency Resource Center,  
15 which is a utility-funded effort to help building  
16 owners comply with our ordinance.

17 So the L.A. ordinance has three main  
18 components. It requires annual benchmarking of  
19 whole building data. There's also a performance  
20 component which starts in 2019. And then there's  
21 a public disclosure element, and we've already  
22 begun to publicly disclose data from 2016, which  
23 was the first year of compliance.

24 So buildings located in the City of Los  
25 Angeles and the LADWP service territory are

1 subject to the L.A. ordinance. There are a few  
2 exemptions by building type, and also exemptions  
3 by calendar compliance year based on the building  
4 status, which are listed on that slide.

5           When it comes to benchmarking for the  
6 L.A. ordinance, there are some specifics that  
7 apply. So the benchmarking results will impact  
8 the performance requirement that starts, as I  
9 said, in 2019. And our ordinance requires that  
10 building owners include whole building energy and  
11 water data.

12           And then lastly, our ordinance includes  
13 structured, as well as subterranean parking.

14           So this chart here outlines the  
15 performance phase. As you can see, that's sort  
16 of a presentation in itself. But essentially,  
17 buildings need to either demonstrate that they  
18 are already efficient or that they're on a path  
19 to efficiency. And if they achieve Energy Star  
20 certification, then they are exempt from the  
21 energy component of the performance requirements.

22           The City of L.A. has applied for an  
23 exemption from AB 802. So if that is granted,  
24 then building owners in L.A. will be just  
25 reporting to the city. The city will report onto

1 the state. The City of L.A. is also working with  
2 the state to coordinate on a few items I've  
3 listed here, the definition of a building  
4 exemption, as well as the data transfer process.

5           So as I mentioned, we already have some  
6 data that's available. It's published on Mayor  
7 Garcetti's open data platform at the link there.  
8 And if you search for EDEWE (phonetic) you'll be  
9 able to locate that data set.

10           This example of displaying benchmarking  
11 data comes from Denver. We're looking at all  
12 different types of ways to make this data easier  
13 for the public to access as we move through  
14 future years. And this map actually gives the  
15 user the ability to click on a specific dot, each  
16 dot is a building, and see more characteristics  
17 about that building. So we're looking down the  
18 road, as well, to make sure that this data is as  
19 easy as possible for people to access and make  
20 decisions from.

21           So next I'm going to cover the resources  
22 that we've developed to help owners comply with  
23 the ordinance. They're listed here on this slide,  
24 and then I'm going to go through a few of them in  
25 greater detail.

1           The main -- the largest resource that  
2 we've developed is a benchmarking guide. We  
3 worked closely with the utilities, as well as the  
4 city, to put this together. So this guide  
5 includes screenshots of the entire compliance  
6 process. We found Energy Star is not intuitive  
7 to people who have not used it before, and so the  
8 screenshots are really necessary to get people to  
9 a place where they can sit down and complete  
10 their compliance themselves.

11           This is the table of contents from the  
12 guide. So just to give you sort of a general  
13 outline of what's contained in there, the most  
14 sort of critical component for building owners to  
15 read through when they read through this is to  
16 determine whether or not they have access to  
17 whole building data. If they have access to  
18 data, they can manually upload it. If they  
19 don't, they need to go through the utility  
20 request process. So we have specific  
21 instructions for each of those scenarios. This  
22 is particularly significant for multifamily  
23 buildings as the tenants are nearly always billed  
24 directly, so the owner does have to go through  
25 the data request process in order to report whole

1 building data.

2           So to help owners comply that don't want  
3 to do the benchmarking themselves, we've created  
4 a service provider directory. So this includes  
5 local vetted third-party vendors that are  
6 available to assist owners. Many owners are  
7 interested in having a third party provide this  
8 service, and so this has been -- this has worked  
9 really well in terms of providing that resource  
10 to owners that don't have the internal resources  
11 to complete the work.

12           For owners that do want to complete the  
13 benchmarking themselves, they refer to -- we  
14 refer them to the benchmarking guide. And then  
15 after they've uploaded all of their data, we  
16 offer a complimentary confidential data review.  
17 So what we do during that review is we ensure  
18 that the minimum data requirements have been met  
19 to comply with the ordinance. We also verify  
20 that issues that were identified by the data  
21 quality checker were properly resolved. And then  
22 lastly, we look at some of the data points in  
23 Energy Star that are required to pursue Energy  
24 Star certification. That will help the customer  
25 in forecasting the performance phase compliance

1 options. So we want to prepare them for Energy  
2 Star certification, so they can accurately see  
3 where their building is performing.

4           So for customers that go through the  
5 benchmarking guide, maybe decide not to call a  
6 service provider and still have questions for us,  
7 we have two ways that they can contact us, either  
8 by phone or through email. And this is an  
9 example -- this is an example of the data flow  
10 when customers select the contact us form. So  
11 through our website, they complete the form,  
12 provide some basic information about the  
13 building, and then they select the reason they're  
14 requesting assistance.

15           When they complete that form, they get a  
16 custom auto response based on the reason that  
17 they've contacted us. So if they're just looking  
18 for the reporting link or another piece of --  
19 administrative piece of information, they receive  
20 that immediately. And then our staff follows up  
21 with them within one business day. The system  
22 also generates a case in Salesforce so that we  
23 can track each inquiry and make sure that we  
24 respond to it and the issue is resolved.

25           Customers can also contact us by phone.



1 When they contact us by phone, they get an  
2 automated voice response system first, so they'll  
3 enter some information about why they're  
4 contacting us. We'll direct them to resources.  
5 If their resources don't answer the question,  
6 then they're able to leave a voicemail which  
7 generates a case in Salesforce, and then our  
8 staff follows up with them within one business  
9 day. We track the outcome of these calls, so  
10 that we can see what types of questions and use  
11 that information to inform the resources where we  
12 want to invest time and effort.

13           So this slide is intended to outline the  
14 importance of determining which stakeholder  
15 answers which type of question. Between the  
16 utilities, the city, and then our organization,  
17 there's a few places that the customers have to  
18 go for certain types of inquiries. So it's  
19 really important to send the customer to the  
20 right place so that they get a response in an  
21 efficient time frame.

22           So to summarize, we're working towards  
23 June 1st, 2018. This is our second year of  
24 collecting this data, so we have lots of reports  
25 coming in this Friday for buildings that are over

1 50,000 square feet. The performance phase of our  
2 ordinance begins in 2019. And really our next  
3 phase is to focus on converting the benchmarking  
4 interactions that we've had into project  
5 discussions, so that we can move further towards  
6 the goal of saving energy and water.

7 So that is the conclusion of my  
8 presentation. Our website is located there.  
9 Happy to answer any questions. And you can also  
10 find all of the resources that I mentioned on our  
11 website.

12 COMMISSIONER MCALLISTER: Oh, yeah. Go  
13 ahead.

14 COMMISSIONER SCOTT: Thank you, Renee.  
15 This is great. I had a question for you.

16 You talked about the benchmarking guide  
17 overview and it kind of lists the different  
18 things that a person or the building owner needs  
19 to do, and also that there's a service provider  
20 directory.

21 Do you have a sense of, if you're a  
22 building owner and you get on the page and you're  
23 trying to get all this information on your own,  
24 how long does that take? Is that like a really  
25 big effort for a building owner, or is it

1 something they've mostly got and can just get on  
2 there? And then for the third-party vendors, is  
3 that something that is a relatively small cost  
4 for building owners, or is that something that's  
5 a surprisingly large fee? I'd just love to get a  
6 sense of that.

7 MS. DAIGNEAULT: Sure. Sure. And  
8 this -- yes, we've got lots of datapoints on this  
9 one.

10 Building owners that are already using  
11 Energy Star Portfolio Manager or are familiar  
12 with data tracking are able to get in there  
13 pretty easily. For the first round of the  
14 ordinance, which effected buildings 100,000  
15 square feet or greater, it was relatively easy.  
16 Many of those buildings were already being  
17 benchmarked.

18 For buildings that are not -- have never  
19 done any benchmarking, what is Energy Star, it is  
20 pretty time consuming for people. Many, many  
21 times it's because Energy Star has so many  
22 options. So they go in and if they're not  
23 following the guide closely, they think they have  
24 to fill out all of the information  
25 comprehensively, which is not required by the

1 ordinance. So we're always referring people back  
2 to the guide, saying this is the only information  
3 that's required.

4 So, you know, for people that aren't  
5 familiar with this system, it can be time  
6 consuming. And a lot of it, is the vocabulary.  
7 They're not sure where to look on their bill.  
8 It's just sort of a different set of -- different  
9 set of guidelines than they've seen before.

10 And then to answer your questions  
11 regarding the service providers, always hard to  
12 give any sort of number but, you know, we see  
13 around \$1,000 per building. Some are a little  
14 lower, some are a little greater. Sometimes  
15 their packaging that with other types of  
16 services. But, you know, it's not \$10,000, and  
17 it's generally not \$300. It's usually about a  
18 \$1,000, in that range.

19 COMMISSIONER SCOTT: Thank you.

20 COMMISSIONER MCALLISTER: I had a comment  
21 and a question.

22 So I guess my question first, really  
23 building on what Commissioner Scott said, you  
24 know, how much -- so this is a statewide program;  
25 right? And I want to give you guys kudos for

1 getting ahead of it. And I think, you know,  
2 cities have always been at the forefront of  
3 benchmarking, and it really is sort of,  
4 naturally, a city-scale thing, certainly, to  
5 begin. And we've been able to build on that to  
6 make it a statewide effort. And I think -- and  
7 that's the first one in the country and that's --  
8 it's, I think, the next natural step.

9           We definitely don't want to, you know,  
10 get in the way of the cities. And then,  
11 certainly, you have the ability to go further  
12 than say a statewide kind of minimum requirement  
13 and can build on it, learn from it and do new and  
14 innovative things, which we'll then be able to  
15 learn from. So I think that ecosystem is really  
16 healthy, just, you know, like we do with building  
17 codes and other efforts like that.

18           So any lessons that you have in sort of  
19 the outreach and kind of the education and how  
20 many resources you had to dedicate to this as the  
21 city, versus kind of counting on, you know,  
22 partners out there in the world to help educate  
23 the population of building owners that are  
24 subject to the requirement. Any sort of learning  
25 that might be instructive for us here?

1 MS. DAIGNEAULT: Sure. Well, the City of  
2 L.A. developed a covered buildings list based on  
3 data from the County Assessor's Office. So they  
4 provided notification to those owners six months  
5 in advance. And during the first year, they  
6 provided multiple notifications to let people  
7 know. So because it's a new program, we did find  
8 that the compliance rate is highly correlated to  
9 the number of reminders that go out. Sometimes  
10 the reminder goes to accounting. Sometimes they  
11 say it's something from the city. They don't  
12 understand what it is.

13 So, you know, notifications to covered  
14 buildings was really critical, as well as we  
15 worked with a lot of partner agencies, so  
16 building ownership association, you know, any  
17 place where owners congregate, getting the word  
18 out there. The official notification is  
19 generally where they find out about it, but we  
20 also relied on sort of industry partners to  
21 spread the word.

22 And then, you know, working, we created  
23 the service provider directory, so working with  
24 the consulting community to make sure that they  
25 were up to speed and they could provide the

1 service in a meaningful way and actually -- you  
2 know, when someone pays a firm to help them be in  
3 compliance, we want them to be in compliance, we  
4 want them to give accurate information.

5           So it's certainly an ongoing process.  
6 You know, in year two, we're still -- there are  
7 some owners that are just complying now, and so  
8 they're a year late. So I would say as many  
9 communication channels and partners as you can  
10 reach out to, and then making sure that  
11 notifications to a list of covered buildings was  
12 helpful for the City of L.A.

13           COMMISSIONER HOCHSCHILD: Any other  
14 questions? Okay.

15           Thank you so much.

16           MS. DAIGNEAULT: Thank you.

17           MS. RAITT: Thanks, Renee and Erik.

18           And so next, I'd like to invite our next  
19 panel, Program Evaluation and Data on the  
20 Multifamily Market to come to the front places  
21 where we have places for you.

22           So just an announcement that,  
23 unfortunately, Tami Rasmussen from Evergreen  
24 Economics wasn't able to join us today. So the  
25 moderator for us is Martha Brooks from the Energy

1 Commission.

2           So go ahead, Martha.

3           MS. BROOK: Good morning, Commissioners  
4 and guests from the Public Utilities Commission.  
5 My name is Martha Brook. I'm an Adviser to  
6 Commissioner McAllister, and I'm moderating this  
7 session.

8           I'm going to ask the panelists to  
9 introduce themselves after I introduce the  
10 session. And then we're going to ask the  
11 panelists a small set of questions that hopefully  
12 you'll discuss amongst yourselves with some input  
13 from the Commissioners and guests. And then for  
14 the remaining part of our panel, we'll ask the  
15 workshop attendees to come and ask additional  
16 questions or provide information that you have  
17 that is relevant to our panel.

18           So our first panel is on Program  
19 Evaluation and Data in the Multifamily Market.  
20 And the concept for this panel is that better  
21 collection, sharing and aggregation of data are  
22 needed to track multifamily buildings, associated  
23 GHG emission reductions and other benefits. This  
24 includes incorporating building data-driven  
25 metrics in the program design, some of the things



1 we heard about this morning, considering non-  
2 energy benefits into analysis and cost  
3 effectiveness requirements, and just, you know,  
4 data needed to plan projects and to identify  
5 savings opportunities.

6           So why don't we just go start with you,  
7 Stephanie?

8           And then I'm going to actually introduce  
9 Tami at the end. She did provide slides and  
10 talking points, so at least we'll know who Tami  
11 is. And she can, hopefully, you know, add her  
12 comments into the docket, you know, once she's  
13 off of jury duty.

14           MS. CHEN: Thank you. Thanks, Martha.

15           Good morning everyone. Okay, slide  
16 three. Thank you.

17           Thanks so much. Thanks, everyone, for  
18 joining us today. My name is Stephanie Chen and  
19 I direct the energy equity work at the  
20 Greenlining Institute. We are a racial justice  
21 advocacy organization focused on creating better  
22 economic opportunities for communities of color.  
23 And, of course, energy efficiency is critical for  
24 that, and distributed energy resources overall  
25 are critical for achieving economic equity, not

1 just for monthly bill savings, but also for the  
2 more intangible, less direct aspects of quality  
3 of life that then turn around and lead to either  
4 economic success or lack thereof.

5 (Colloquy between panelists.)

6 MS. BROOK: Oh, yeah, opening comments  
7 would be great.

8 MS. CHEN: Great. Thanks. So a couple  
9 of points that I want us to think about on this  
10 topic, one just generally, thinking about how  
11 these programs are rolling out in the long term,  
12 and thinking about how -- the way that we  
13 evaluate programs and the way that we design the  
14 metrics by which we're evaluating programs will  
15 lead to better program design moving forward.  
16 This isn't just a sort of once around the block  
17 circle. This is a we're going lap after lap kind  
18 of circle.

19 So I think one of the things that's  
20 really important to think about is not -- Eugene  
21 talked about buildings and behaviors. And we  
22 need not only to track the building metrics, but  
23 also the qualitative metrics around behaviors,  
24 around straight up customer satisfaction, around  
25 how do folks feel about the investments that

1 they've made, that have been made on their  
2 behalf? Does it make them more likely to change  
3 behaviors, to make additional investments?

4           As we're thinking about adoption, what's  
5 really going to move the needle for low-income  
6 folks who are spending disproportionate amounts  
7 of their time thinking about all of the different  
8 stressors that Isaac was talking about this  
9 morning, we really need to make sure that clean  
10 energy is a good experience for folks in the  
11 things that matter most to them every day, not  
12 just in the things that matter most to us every  
13 day, which is clean energy. And that's really  
14 critically important for low-income folks,  
15 particularly in environmental justice  
16 communities. But when you're thinking every day  
17 about can I afford to pay the bills, can I afford  
18 to feed my kids, we've got to meet folks where  
19 they're at. And I think that having the right  
20 metrics around qualitative customer experiences  
21 will help us get there.

22           And I think the second thing that we  
23 really need to consider lies outside of the scope  
24 of energy burden and really gets into concerns  
25 about rent, and particularly in this housing

1 market, concerns about displacement.

2           There was a conversation earlier from  
3 Isaac's presentation about the difference between  
4 rent restricted or rent assisted low-income  
5 properties, and then the market rate low-income  
6 properties. And not only are those really, quite  
7 frankly, often times substandard housing at  
8 cheaper rates, but tenants that are in those  
9 properties are constantly at risk of being  
10 displaced from those properties when their  
11 landlord thinks I could make some more money off  
12 of this unit.

13           So I think that consideration is one that  
14 we really need to -- it's a very narrow needle to  
15 thread, but we need to make sure that the  
16 benefits that we are delivering are going to low-  
17 income tenants, not just to low-income buildings.  
18 And those are not going to happen automatically,  
19 particularly in this rental climate. So I think  
20 that's one thing that I really want to call on,  
21 on the Commissioners, as well as everyone in the  
22 room, to think about.

23           MS. MILET: Hi. Thanks for having me  
24 here today. My name is Meredith Milet. I'm an  
25 epidemiologist at the California Department of

1 Public Health. I'm in the Climate Change and  
2 Health Equity Program which is in our Office of  
3 Health Equity. And I'm coming more from the  
4 perspective of co-benefits, specifically health  
5 and how we might be able to track those or add  
6 that into the data and evaluation component.

7           So I think that health is being affected  
8 by these energy issues in four ways that I see.  
9 One is the one that everyone thinks of the most,  
10 which is if you switch to clean energy, you  
11 improve air quality and that affects health, and  
12 that's really important and we should talk about  
13 tracking that. But as Isaac brought up, there's  
14 one that doesn't get as much play, and that is  
15 that there are health benefits from energy  
16 efficiency upgrades and programs.

17           There's a couple national systematic  
18 reviews that have shown this, shown the data on  
19 that, have shown improved overall health,  
20 improved respiratory health, allergies, decreased  
21 headaches, improved blood pressure, and better  
22 mental health after these types of energy  
23 efficiency programs. And the benefits are the  
24 greatest among people with preexisting health  
25 conditions. And people with low incomes are the

1 most likely to have those preexisting health  
2 conditions.

3           And another way, which was already talked  
4 about, is energy insecurity. Like people said a  
5 few times, if you're choosing between paying for  
6 your energy or for your prescriptions or your  
7 healthy food, that is an issue for health.

8           And lastly, I think there's also, in  
9 terms of evaluation of the program in general, if  
10 there's an element of workforce development,  
11 people being employed, and who might not even be  
12 receiving the clean energy, that is still a  
13 benefit. If people have employment and have  
14 higher incomes and maybe change their poverty  
15 status, that has a big benefit for health, as  
16 well.

17           I wanted to spend just a few seconds  
18 talking about how Contra Costa County has a pilot  
19 program where they're connecting home visiting  
20 nurses who are there for health reasons with  
21 energy efficiency programs. That seems simple,  
22 but it takes effort, you know, to teach those  
23 home visiting nurses about the energy efficiency  
24 programs and then put a system in place for the  
25 people that most need to be referred to programs

1 like LIWP and LIHEAP. And the county is actually  
2 giving assistance for that. And Department of  
3 Public Health is about to put out a guideline  
4 document to help other jurisdictions put together  
5 similar programs.

6 And lastly, I just wanted to say that in  
7 terms of data and evaluation, there are a lot of  
8 health data out there. There's a lot of  
9 limitations to them, but I see that it's really  
10 worth exploring.

11 And there are a few opportunities, and  
12 one of those is tracking, and like I said,  
13 evaluation, like what can we quantify what have  
14 been the health outcomes of these programs? But  
15 also, I think there's an ability to try to use  
16 these programs as a way to fill a gap in the  
17 data. You know, can we try to figure out who are  
18 being served and what kind of chronic conditions  
19 they have or what are some of the barriers that  
20 are getting in the way of doing some of the  
21 energy efficiency upgrades that are related to  
22 health? Like do they have asbestos or lead paint  
23 or mold and they can't get the energy efficiency  
24 upgrades? And so those things are addressed.

25 And that's really the health view.

1 Nancy?

2 MS. SUTLEY: Good morning. Nancy Sutley.  
3 I'm the Chief Sustainability Officer at the L.A.  
4 Department of Water and Power. And I had a  
5 couple of slides. I wanted to talk a little bit  
6 about our Equity Metrics Data Initiative, which  
7 was approved by our board in 2016.

8 Go to the next slide.

9 The Equity Metrics is really trying to  
10 bring together data that we have, both about our  
11 demographics-geographic information and where our  
12 programs are to try to understand how everyone  
13 across Los Angeles is experiencing our programs.  
14 And so we look over a number of different  
15 categories of reporting, including some of our  
16 customer rebate and customer incentive programs.

17 And the purpose of this is really to --  
18 not just to report on goals, but also to let us  
19 look at, you know, a kind of granular level at  
20 how we're doing and help the department to  
21 prioritize our efforts and the distribution of  
22 our programs across our customer base in a more  
23 equitable way, and help us also to understand the  
24 effectiveness of our programs, about outreach,  
25 qualifications for program participation,



1 customer ease of use, and a whole bunch of other  
2 things that we're looking at, and trying to make  
3 sure that we understand both the current state of  
4 our programs and how we can improve them to make  
5 sure that they're more equitable.

6           So if you go to the next slide, this is  
7 just an example of how this data has been  
8 reported. This is looking across our customer  
9 rebate programs, so a number of different  
10 programs overlaid over CalEnviroScreen and at a  
11 zip code level. And so you can see program  
12 participation across the city, so it's the sense  
13 of kind of a heat map to help us understand who  
14 is benefitting from our programs and how so that  
15 we can better refine our programs and make sure  
16 that they're reaching everyone across the city.

17           So we're continuously updating the data  
18 and over a number of measures that we continue to  
19 refine that reporting, monitor and measure  
20 overall performance, you know, aligned with our  
21 metrics targets, and to identify, you know, any  
22 places that we can add or modify, establish  
23 metrics and make sure that they are tracking what  
24 we would like them to track. And then finally,  
25 really to, sort of at a policy level, to make

1 adjustments and changes to our programs to ensure  
2 that they're reaching everyone across the city in  
3 an equitable way.

4           So, for example, we have funded for a  
5 number of years community-based organizations to  
6 help us do outreach around our Energy Efficiency  
7 and Water Conservation Program. And this year's  
8 results of the -- what we've understood is a  
9 result of the Equity Metrics Initiative, we've  
10 added money in there to ensure that we're  
11 targeting underserved communities. So we're  
12 looking again across all of our programs to see  
13 if we can improve them and to deliver them in a  
14 more equitable manner.

15           MS. SUTTER: Good morning. My name is  
16 Mary Sutter. I'm with Grounded Research and  
17 Consulting. I was brought in. I think I'm very  
18 happy to be here. I have 25 years experience in  
19 evaluating energy efficiency programs in  
20 California and around the nation.

21           And so I was sitting here trying to  
22 figure out, what is it that I could actually, you  
23 know, help folks understand? And I kind of  
24 reverted back to this metrics. I think  
25 everybody's talked about, you know, what they

1 evaluate, what metrics that they look at. And  
2 this may be something that you guys have heard of  
3 before, but for me, and the way that when I've  
4 thought about evaluation, and especially metrics,  
5 there seem to be kind of two flavors. And  
6 there's a metric that is perhaps more oversight  
7 of a program. It is kind of what I would call  
8 the output of a program. It's tracking things,  
9 like the number of buildings treated within ESA,  
10 or even the percent of disadvantaged community  
11 participation. That is something that's saying  
12 this program is going in here and causing these  
13 changes. These are kind of the touches.

14           The second kind of metric that I've seen  
15 and had people use are outcome metrics. And  
16 these are the ones that I've also seen --  
17 policymakers are much more interested in  
18 outcomes. They want to know if the things that  
19 are happening are making the changes that they  
20 expect to see. Those are things like the  
21 savings, the energy savings. You know, health  
22 changes in this treated population, is it making  
23 a difference? If you get treated, are you really  
24 going to be seeing some of these changes? It  
25 sounds like Meredith is saying, you know, these

1 things are known. And is the energy cost burden  
2 that these multifamily homes have being reduced?  
3 You know, those are outcome metrics.

4 I will say, also, when people say  
5 metrics, it's not necessarily a single thing. I  
6 tend to break these into kind of four different  
7 areas. One is a statement of where is that  
8 you're looking at? We're looking at buildings  
9 treated for this metric. But really, to have a  
10 good metric, you have to have a known baseline.  
11 You have to say, okay, we are starting here.  
12 This is kind of where we're at. And you also  
13 have to have kind of specific targets for change.  
14 And those targets have to have a timeline  
15 associated with them.

16 So if you have a metric that doesn't have  
17 a known baseline that doesn't necessarily have  
18 specific targets or have an associated timeline,  
19 you may have a metric that's not going to be as  
20 useful for you as you may want.

21 The other things I would say about  
22 metrics is they are best if they have the ability  
23 to put their data in context. And I will say  
24 that kind of one of the things that Nancy was  
25 showing is that it had -- this is where our low-

1 income family reside. And so it allows you to  
2 understand whether or not what you're looking at  
3 and what is happening is good or bad. An example  
4 being if you have as a metric the number of  
5 buildings treated, which is sometimes, you know,  
6 it is definitely a good metric to understand if a  
7 program is doing what it's doing, but you don't  
8 know 10,000 buildings is good. Is it good? Is  
9 it bad? Is it -- you know, how many are they  
10 supposed to be putting in place?

11           So if you can put that metric in context  
12 by having, perhaps, a percent of the population  
13 that is being covered. And especially with  
14 something like this, to me anyway, if you can do  
15 accumulative percent over time, that really helps  
16 to understand that we are reaching 40 percent of  
17 our buildings, we are reaching 60 percent of our  
18 buildings.

19           And then the last thing I will say as an  
20 evaluator, as a person who's been involved with  
21 some of these metrics, it's not costless.  
22 Really, to put in place a metric and understand  
23 and be able to track that over time takes effort.  
24 It takes costs. And because of that, I often  
25 suggest that you come up with a few metrics that

1 are really important, and they can be proxy for  
2 what, you know, types of choices and decisions  
3 that you need to make and really put the effort  
4 behind those, but not necessarily -- more is not  
5 necessarily better.

6           That's my point.

7           MS. BROOK: Great, so thank you. That  
8 was a great, great introduction to the four of  
9 you ladies.

10           And I'm going to -- I am not going to try  
11 to introduce Tami, but she did leave me some  
12 slides.

13           And are you able to pull those up,  
14 Heather?

15           MS. RAITT: Sure.

16           MS. BROOK: So I just want to introduce  
17 this into the panel so that everybody in the room  
18 can think about it, just like they've thought  
19 about the last few minutes of the introductions.  
20 And then, also, there might be some really good  
21 reference materials that will follow-up with our  
22 comments.

23           So here's what Tami was going to talk  
24 about in her first introduction. It's basically  
25 two different studies that Evergreen Economics

1 has been involved in, in like the 2014 to 2016  
2 period. One was an income needs -- Low-Income  
3 Needs Assessment, and another one was a  
4 Multifamily Processes Evaluation.

5           This slide here is from the Low-Income  
6 Needs Assessment. And I think the takeaway from  
7 this slide is low-income is not exclusive to  
8 multifamily. There's low-income in single-family  
9 rental communities, and there's low-income folks  
10 who own single-family buildings. And their  
11 energy burden is all -- they're all -- they all  
12 have significant energy burden. And, in fact,  
13 when you adjust for housing subsidies, medical  
14 assistance and things like food stamps,  
15 multifamily renters actually look a little bit  
16 better than low-income populations that own their  
17 own single-family residences.

18           Those numbers in my like engineering  
19 brain all look the same to me. You know, they're  
20 3.9 percent and 4.4 percent, so it's not like  
21 huge differences. But I think the point is that  
22 we have to be careful when we're thinking about  
23 low-income, that we're not just sort of having  
24 this silo about multifamily buildings.

25           So I guess to your point that you already

1 made, we have to talk and think about the people  
2 living in these dwellings and their situations,  
3 and that's not really siloed into one specific  
4 building type.

5           One of the reasons that these metrics  
6 look a little bit differently is that multifamily  
7 buildings are different than older, single-family  
8 dwellings. They typically use less energy.  
9 They're smaller and they're built differently.  
10 They don't have attics that have -- you know,  
11 that really, basically, generate a lot of cooling  
12 load, like the single-family dwellings we've been  
13 focused on in the code for the last 20 years.  
14 But they still have, you know, significant energy  
15 burdens, but there's some variety across this  
16 low-income sector.

17           The next slide please.

18           Other takeaways from these two studies,  
19 the Low-Income Needs Assessment, the needs vary  
20 by climate region. So, you know, the low-income  
21 in the mountain communities is different than the  
22 desert, or to the extent that they can still live  
23 along the coast in California, the coastal low-  
24 income communities and population groups have  
25 unique circumstances. They have -- the focus of



1 these households are broad. They first have to  
2 deal with paying their bills, but they are  
3 interested in what they can do. And some  
4 evidence is out there that says they're very  
5 receptive to alerts about usage periods or high  
6 rate periods, that they're receptive with energy  
7 and education, and that the efficiency of their  
8 rental space needs to be put in context of their  
9 other housing conditions, which I think a few of  
10 you ladies also mentioned.

11           The multifamily profits evaluation  
12 takeaways are -- and I think we're heard this  
13 already, at least, you know, my kind of cursory  
14 listening skills this morning kind of have tuned  
15 into the many programs, many players. And we  
16 have to be -- you know, we actually think one of  
17 the barrier study requirements was that central  
18 clearing house; right? It was just like this  
19 dream that you can go to one place and find all  
20 your solutions. But especially for this sector,  
21 it seems like it's really hard to figure out what  
22 the landscape is because of all the different  
23 actors.

24           The data issue we mentioned in terms of  
25 accounts versus buildings and trying to

1 understand that sort of whole building, you know,  
2 opportunity versus what's appropriate within a  
3 dwelling unit.

4           And then another profits evaluation  
5 takeaway is that as the, at least, the investor-  
6 owned utility programs move to more and more  
7 third-party implementation, there could be  
8 opportunities for the multifamily low-income  
9 sector that we haven't yet been able to realize.

10           So I'm going to leave it at that for Tami  
11 and Evergreen Economics and hope that they can  
12 chime in after their jury duty responsibilities  
13 have concluded, and we thank you for your  
14 service, Tami.

15           Let's get to the questions.

16           So the first question is really general.  
17 And when I first read it, I was like, oh boy, I  
18 don't think I could answer this question, so I  
19 appreciate you guys trying to. And I just want  
20 to say that, basically, the question is: What  
21 are the best existing sources of multifamily  
22 building data and energy saving opportunities  
23 that you know of?

24           And I guess I would ask you to think --  
25 consider a little bit broader than just data. So

1 we've already heard about metrics. We've heard,  
2 I think, about information, insights, ideas, all  
3 sort of falling into this sort of data bucket.  
4 And also to sort of thing more broadly about not  
5 just that data fits in a database, and so we're  
6 not asking you, where's the database, but also  
7 potentially asking you, are there public sources  
8 of information? Are there publications you rely  
9 on? Are there professionals that you rely on or  
10 institutions that you rely on to get some of this  
11 sort of foundational data, as you think about  
12 opportunities for saving energy and doing clean  
13 energy projects in the multifamily sector?

14           So I'll give you a prize to anyone who  
15 wants to start, but I don't actually have a  
16 prize. How about a glass of water? I would  
17 gladly get it.

18           MS. SUTLEY: I'll just make a couple of  
19 comments.

20           One, I think, you know, this is an area  
21 where we're data rich and information poor. And  
22 I think what at least we've tried to do with our  
23 equity metrics initiative is really tried to be  
24 more deliberate about gathering that data. So,  
25 you know, we live in the world of, you know, lots

1 and lots of data about energy and water usage.  
2 And also, you know, a lot of expectation, I  
3 think, about how we're approaching challenges.

4           So I think for us it was really having to  
5 be sort of very intentional about what we're  
6 looking for. And we went through sort of a long,  
7 long process of trying to refine the kinds of  
8 things that we would track regularly. But we also  
9 report lots of different data sets. And you saw  
10 earlier about the city's Open Data Initiative, so  
11 we also do track a number of different data sets  
12 and measures on the Open Data Initiative. So  
13 we're a public agency, so really anything that's  
14 not sort of customer identifiable is really  
15 available to anyone. It's just what you -- what  
16 you do with that, and I think it's sort of what  
17 the questions you're asking and how you use that  
18 information that's really critical.

19           MS. BROOK: So do you think that -- do  
20 you think that's City of L.A. and LADWP territory  
21 is unique in its ability to access government  
22 data that has probably the sort of baseline data  
23 or the, you know, the tracking mechanisms in  
24 place already because of its Open Data  
25 Initiative? Or do you think that it's pretty

1 general that if you ask if you ask you can find  
2 the data you're looking for? The better question  
3 is what you should do with the data once you have  
4 it?

5 MS. SUTLEY: Well, I wouldn't want people  
6 to have the impression that that was easy to get  
7 that data out there. And even, you know, when  
8 we've -- we, for example, have provided a lot of  
9 customer -- well, a lot of usage data to  
10 researchers at UCLA to help compile and energy  
11 and sort of water atlas for L.A. County. That  
12 took a lot of work. And I think when you start  
13 to try to, you know, try to use the data, you  
14 find out how hard it is to actually get into a  
15 useful form.

16 So even on the existing Building and  
17 Water Efficiency Ordinance, the benchmarking  
18 ordinance, it turned out that the City of L.A.  
19 doesn't have a standard address protocol that all  
20 the departments use. So different departments in  
21 the city identified addresses slightly  
22 differently, which made some of the data  
23 collection challenging, and then trying to match  
24 it up with the county's property records.

25 So there is a lot of work that has to go

1 into making the data useable. And that also, I  
2 think, has to be intentional.

3 MS. BROOK: Any of the other panelists  
4 want to chime in on this one?

5 MS. SUTTER: I'll just say real quick  
6 that as a state agency, I see the CEC has to  
7 serve, you know, the entire state. And there's a  
8 lot of information that might be available in  
9 local government. But if you have these  
10 multifamily buildings in unincorporated areas in  
11 a county, it may be not as available.

12 The one thing that I -- I was looking  
13 into this awhile back. And there is at least one  
14 company that I'm aware of that actually takes the  
15 property assessment information from all 58  
16 counties and puts it in place so you can just  
17 access that data from the player, as opposed to  
18 having to go to each individual county to get  
19 that information. I actually did not use that  
20 person's data, but I have heard that you can  
21 separate out single-family from multifamily, but  
22 you can't do a very good job of -- you can infer  
23 owner versus renter, but it also has the same  
24 difficulties that -- you're all nodding up there,  
25 so my guess is you've probably heard of this.

1 But they -- you can't really separate a building  
2 which is kind of what you might want to look for,  
3 versus all of the various small -- you know, the  
4 units within it.

5 MS. BROOK: Okay. Well, let's move on to  
6 the next question, if that's okay. It's sort of  
7 more of a targeted, like assuming that you have  
8 the information that you need about multifamily  
9 buildings and energy saving opportunities, how do  
10 you give designers and retrofitters access to the  
11 data and information that they need to develop  
12 clean energy solutions for apartment buildings?

13 And a follow-up question on that same  
14 topic: How can tenants use the data available to  
15 them, like consumption data, to make informed  
16 choices about how to save energy, reduce their  
17 bills and, you know, do what we want them to do  
18 in terms of reducing their consumption? That's  
19 the question.

20 MS. CHEN: I can jump in on the tenant's  
21 piece of things. And I think that the key here  
22 really is to pair the information about your  
23 usage and what's going on today with available  
24 solutions; right? And what are the immediate  
25 behavioral changes that can be made? What are

1 the free widget that X or Y will send you that  
2 you can use to reduce this or that or the other  
3 thing. I think making it really as easy as  
4 possible, again, going back to all of the  
5 different stressors that are present in the  
6 everyday lives of low-income folks, let's not add  
7 one more. Let's make it as easy as possible.

8           And I think about this a lot in my own  
9 context; right? I am now, thankfully, a  
10 homeowner. But when I was a renter, even if I  
11 had access to that information about my usage,  
12 the tips that were available from my utility  
13 company were this kind of general list of top ten  
14 things, and maybe one of them was turn the lights  
15 off when you leave the room. Okay, I have a  
16 studio apartment, I never leave the room. But  
17 then it was like invest in solar-thermal, and  
18 that doesn't apply to me.

19           And so I think that the one-size-fits-all  
20 kind of approach to how to be an energy savvy  
21 consumer really needs to get disaggregated quite  
22 a bit. And we need to really think about what  
23 are the ways to really get folks to change their  
24 behaviors? It's not just about awareness. It's  
25 not just if we hear the clean energy sermon



1 enough times, we will -- we will make change.  
2 That will happen for some folks. But  
3 realistically, pairing the solution with the  
4 information needed to prompt folks to take that  
5 step is what's really going to get us there.

6 COMMISSIONER MCALLISTER: Can I ask a  
7 quick question?

8 So are there -- is there anyone doing  
9 that well in your estimation? Like are there  
10 models that are actually, you know, just in a  
11 very pragmatic way that you described, getting  
12 the right solutions in front of the right people  
13 at the right time?

14 MS. CHEN: I think that some of the  
15 programs that are coming out that do address  
16 whole buildings have a lot of promise for that.  
17 And I think that a lot of times the things that  
18 we see from Greenlining's perspective is from  
19 community-based organizations who get this and  
20 who are -- who go in that door prepared to bring  
21 both sets of information.

22 I think that some of the companies out  
23 there, like OhmConnect, for example, are starting  
24 to think about ways to motivate folks to act and  
25 providing the enabling tools, as well as thinking

1 about the motivation. But I think that,  
2 especially for a lot of these companies that are  
3 starting up, their natural like first market  
4 segment is not going to be low-income folks  
5 because those are the harder-to-reach customers.  
6 I do see them kind of starting to move in those  
7 directions for sure, but I think that I haven't  
8 seen anything yet that is specifically tailored  
9 to the population we're talking about today. But  
10 if anybody out there has something, we'd love to  
11 hear about it.

12           COMMISSIONER MCALLISTER: Yeah. I want  
13 to sort of flip -- get the flip side of that,  
14 too, so -- and maybe, well, I don't want to get  
15 in the flow -- in the way of flow here, so maybe  
16 there's a subsequent question whether it's  
17 better. But just keep this in mind.

18           Is there -- so how can data be utilized  
19 to get building owners engaged and motivated? I  
20 guess, you know, we're doing a lot of work on  
21 data at the Energy Commission. And the eventual  
22 goal is to push a lot of that out to the world  
23 and local governments and other stakeholders, and  
24 that could include, you know, a population of  
25 building owners that we could identify and

1 convene and do something important with them.  
2 But making it -- how do we show it's worth their  
3 while; right? What kind of data do they want to  
4 see? What kind of information, knowledge, you  
5 know, sort of vision that's informed do they want  
6 to see that will bring them to the table and help  
7 them invest?

8           Because a lot of -- you know, we're  
9 talking about, for the most part, we're talking  
10 about privately-owned buildings that have renters  
11 in them. So we've got to -- they're kind of a key  
12 stakeholder and we've got to figure out ways to  
13 work with them. And how can we use our  
14 informational landscape to make that happen?

15           MS. CHEN: And I think that the need to  
16 connect the information with the solution is  
17 present there, as well. I think Isaac was  
18 talking about the financing cycles that,  
19 particularly, the rent-assisted properties are  
20 subject to. And really, everything operates  
21 around that. If you're not able to get onto the  
22 natural cycle that those buildings are on, no  
23 matter how committed that owner is going to be,  
24 their hands are going to be tied by just  
25 financial and practical concerns.

1 MS. SUTLEY: I think also, you know, you  
2 need to -- I'm sorry -- you need to make these  
3 programs easy for whoever. So, for example, we  
4 have a Commercial Direct Install Program that we  
5 work, you know, with third-party providers, which  
6 is just kind of a menu of measures. And they go  
7 in and work with the customer and just do them,  
8 and they don't -- we don't charge our customers.  
9 You know, it's free. So that gets you -- at  
10 least gets you in the door.

11 And so we have found other ways to sort  
12 of get you in the door. For example, we were  
13 just about to finish our second annual LED  
14 distribution to all of our 1.4 million electric  
15 customers. So we've delivered to every household  
16 in Los Angeles, two LED lightbulbs with a bunch  
17 of information about other programs that people  
18 can take advantage of, and in a nice bag. And I  
19 think the bag has been the most popular part. I  
20 see them all over the place, a reusable bag.

21 And then finally, we, as I mentioned, we  
22 have been funding community-based organizations  
23 to help us with outreach to communities that they  
24 are much better communicating with than we are.

25 MS. BROOK: I wondered, Meredith, you

1 could just maybe just reemphasize what you talked  
2 about in your opening statements about using the  
3 health professional to introduce energy  
4 efficiency? At least that's what I thought you  
5 said, and that sounds like it would really, I  
6 think, be appropriate to speak of here in terms  
7 of getting the information, you know?

8 MS. MILET: Yeah. Sure. I mean, I think  
9 there are a lot of home visiting programs for  
10 health. And those are -- usually, people who  
11 have established trust are very trusted by the  
12 tenants. And so that's a way to the other  
13 direction, maybe not, you know, to get the owners  
14 to want to step in, but to get the tenants  
15 interested, is having those people who are there  
16 for another reason that is maybe higher on their  
17 priority list right now, and how are often, if  
18 they're (indiscernible) or community health  
19 workers, they're often really trusted by the  
20 families and let into the home already.

21 And I know, also, that people don't want  
22 a lot of people coming to their home a lot of  
23 times. And so to have them have this extra  
24 expertise and be able to try to connect them that  
25 way --

1 MS. BROOK: Fantastic.

2 MS. MILET: -- I think is helpful.

3 MS. BROOK: So has that program been  
4 evaluated or publicized in any way?

5 MS. MILET: Not yet. It's starting to  
6 be. I mean, I think that Contra Costa County,  
7 and they've been working a lot with RAMP,  
8 Regional Asset Management Prevention, they've  
9 given presentations on it and stuff, but  
10 they're -- it's still pretty new. It's been  
11 about a year, I think, and so they're still  
12 trying to evaluate it. They're kind of like on a  
13 shoestring little operation, so like you said,  
14 evaluation isn't costless, but it's been  
15 difficult. But they're trying to collect a  
16 little bit of data around that too.

17 The other thing along those lines that I  
18 can't help but think about when you're talking  
19 about getting the building owners motivated, and  
20 I know this sounds really Pollyannaish because,  
21 obviously, the money is going to be the most  
22 important thing but, you know, health is a  
23 motivator for people in ways that other things  
24 aren't.

25 And I know, it reminds me of, there are

1 these medical programs for asthma where if there  
2 are patients who are renters who have asthma  
3 symptoms, and some of the household problems like  
4 leaks or things causing moisture or pests and  
5 they aren't -- their landlords are not responding  
6 to wanting to get things fixed, there's a  
7 program, basically, it sounds so simple, but  
8 where there are doctors who write a letter to the  
9 landlord. And they've had a lot of success  
10 because I think people just getting that letter  
11 from a doctor who, you know, who seems more of  
12 like an authority figure, sometimes they don't  
13 have to go through legal recourse because once  
14 they get the letter from the doctor, they make  
15 the changes.

16 MS. BROOK: Well, that's fantastic. It's  
17 sort of like getting a letter for an emotional  
18 support dog.

19 COMMISSIONER MCALLISTER: You don't think  
20 an energy engineer has that level of credibility?  
21 I don't know.

22 So I want to just highlight that about  
23 Contra Costa County, because I've heard the same  
24 thing, that they're trying -- they maybe have  
25 filled or their trying to fill a position to do

1 that coordination directly between their health  
2 services department, you know, I'm going not get  
3 the names wrong, and their energy and sustainable  
4 side of the shop, and so those have been siloed.  
5 And so they're trying to actively make sure that  
6 those programs coordinate, and I think that's a  
7 great example. And I think it's front end, you  
8 know, on the front end, but that has a lot of  
9 promise, I think, too.

10 MS. SUTLEY: If I could add just one  
11 quick other example? The L.A. City Housing  
12 Department, you know, routinely inspects  
13 multifamily housing. And so they have a program  
14 called Gateway to Green where, when they are  
15 inspecting rental properties, they are able to  
16 provide information to the properties about our  
17 energy and water programs. And so that's been,  
18 you know, an effective way to communicate, at  
19 least with the building owners.

20 MS. BROOK: Great. Those are really  
21 great answers to that -- those -- that set of  
22 questions.

23 Moving on, there's a little bit of  
24 overlap here, but let's just touch on it. And if  
25 there's anything new that you can add and any



1 other questions from the dais, that would be  
2 great.

3           Benefits to customers. How can we  
4 maximize benefits to customers in low-income and  
5 disadvantaged communities? What tools and data  
6 are available to target deployment and what tools  
7 are still needed?

8           So we've touched on some of this, but if  
9 there's anything that any of you would like to  
10 add before we move on to non-energy benefits, let  
11 me know. Any other questions? Does anybody want  
12 to touch on that?

13           MS. CHEN: I would actually suggest that  
14 we think about benefits, not as energy benefits  
15 and non-energy benefits, but just as benefits.  
16 And there are, of course, there are those kinds  
17 of benefits.

18           But I think one of the things  
19 particularly that I'm seeing in the IOU program  
20 that's starting to create some problems around --  
21 well, not starting to, that has been and  
22 continues to create problems around effectively  
23 reaching low-income folks, which are the higher-  
24 hanging fruit in this challenge, is that we are  
25 looking at stuff that's on the bill, and then

1 we're kind of trying to secondarily work our way  
2 into the non-energy benefits around some of the  
3 health outcomes, around quality of life outcomes  
4 and whatnot. And then we end up in this, oh,  
5 this isn't cost effective, so maybe we shouldn't  
6 do this, or maybe we should do less of it.

7           Well, okay, hold on a second. If someone  
8 is living in Bakersfield and they're not using  
9 air conditioning during the summertime, they're  
10 not using any kind of cooling during the  
11 summertime because they don't have a way to do it  
12 without it costing hundreds of dollars, they're  
13 not going to do that. You get them energy  
14 efficiency climate control, and guess what?  
15 They're going to use it. And we want them to use  
16 it. And that should be a benefit that doesn't  
17 compete with energy benefits.

18           And I think that the way that our systems  
19 are set up now, and the Commission is working its  
20 way through breaking down some of these barriers,  
21 but one of the real keys is going to be stop  
22 thinking about energy benefits and cost  
23 effectiveness and then, also, non-energy  
24 benefits. We've got to think about it more  
25 holistically.

1 MS. ADEYEYE: I have a question that kind  
2 of dovetails on what you just said, Stephanie,  
3 and I think what Isaac said earlier in his  
4 presentation.

5 So when you're thinking about benefits to  
6 disadvantaged communities, how are you thinking  
7 about the way that those benefits might differ,  
8 for example, someone in Bakersfield versus  
9 someone in San Francisco, and are there things  
10 that should be considered in this process around  
11 the locational differences for disadvantaged  
12 communities?

13 MS. CHEN: Yeah, absolutely. That's a  
14 really good question. And I think that I would  
15 actually look to Meredith to talk about this,  
16 because the first things that come to mind for me  
17 are some of those environmental health issues.  
18 Environmental health outcomes are going to be  
19 radically different between the two families that  
20 you just described. And quite frankly, I'm not  
21 so worried about the environmental health  
22 outcomes for most of the neighborhoods in San  
23 Francisco, not all, but most. I am extremely  
24 concerned about the ones in Bakersfield. I think  
25 that's the one that really jumps to mind for me,

1 the top of mind.

2 COMMISSIONER MCALLISTER: And why is  
3 that, because of indoor air quality issues or  
4 just air quality issues?

5 MS. CHEN: Yeah. I mean,  
6 (indiscernible), I don't have a lot to add but,  
7 yeah, I think there will a lot of differences.  
8 And the heat examples are really -- it's a really  
9 important one, especially with the change, the  
10 fact that things are going to get hotter.

11 MS. BROOK: Well, we're moving into non-  
12 energy benefits, so let's just keep going.

13 So the question is: Which non-energy  
14 benefits are most valuable to customers and  
15 building owners in this multifamily low-income  
16 sector? And which ones are program  
17 administrators looking to track and analyze? So  
18 that's kind of to the point that maybe they're  
19 not the same, so any discussion on this with this  
20 panel would be great.

21 Meredith?

22 MS. MILET: I can start and probably  
23 reiterate, but I think that one of the things I  
24 want to emphasize is that I think when you say  
25 what's most important, energy cost burden comes

1 up, even from a health perspective. So I just  
2 don't want to forget that we have actually now,  
3 through this health equity, a list of healthy  
4 community indicators. And they are sort of our  
5 list of indicators of what we call social  
6 determinants of health. And so -- and energy  
7 cost burden is one of them, so we think of that  
8 as a health indicator, even though it's not a  
9 direct health outcome. Although, like you said,  
10 it is different, like in terms of our program  
11 administrators or our staff, we'd also like to be  
12 able to track the actual changes in health  
13 outcomes when that's possible.

14           And in terms of health outcomes, if  
15 you're thinking about which ones are important,  
16 we touched on them, asthma, cardiovascular  
17 disease. But it could also be done as general  
18 hospitalizations and emergency department visits,  
19 if that's an easier thing to get. And, also, the  
20 indicator of asking people how they rate their  
21 own overall health has been shown to be really  
22 well correlated with health. And so that's one  
23 of the things I think that we added to the Contra  
24 Costa County pilot because it was just too much  
25 work to try to get a lot of really in-depth

1 health outcomes. So can we ask these people this  
2 one question, you know, how do you rate your  
3 health before and after?

4           And then the other thing I want to  
5 emphasize is to not forget mental health and  
6 stress, because those are really important and  
7 maybe even more sensitive to these changes in  
8 savings than other health outcomes.

9           MS. BROOK: Nancy or Mary?

10           MS. SUTTER: I'll just really quickly say  
11 I find it fascinating that Meredith was talking  
12 about, you know, you figured out one question  
13 just to ask that really can take the place of  
14 what maybe other folks might consider a much more  
15 rigorous and, therefore, a much more expensive  
16 type of approach to actually determine, you know,  
17 some of these health outcomes. And to me, it may  
18 be considered a proxy, but it's a direct proxy in  
19 terms of what you have and much less expensive to  
20 get, and yet it's something that you can use to  
21 help make decisions.

22           MS. SUTLEY: The thing I would add is  
23 just, you know, for us, one of the things we're  
24 able to do somewhat easily is to work with other  
25 city departments, so we look across, you know,

1 different emphasis.

2           So, for example, we've had a program for  
3 a number of years with our Department of Aging  
4 where we give out fans every summer for elderly  
5 people in L.A. And, obviously, that's a huge --  
6 there's a huge health issue associated with heat.  
7 And we can get sort of the most energy efficient  
8 fans into people's homes.

9           So I think that, you know, thinking, and  
10 to the health example, I think thinking beyond  
11 just the utility or the, you know, sort of the  
12 energy questions narrowly can start to target  
13 programs that provide multiple benefits. And  
14 we've had a program for a number of years where  
15 we actually give our low-income customers a new  
16 refrigerator. And I think that there are  
17 benefits beyond the fact that, you know, old  
18 refrigerators are very -- use a lot of energy, to  
19 get a new refrigerator into somebody's home, it  
20 also means somebody shows up and knocks on the  
21 door and is with the person getting the new  
22 refrigerator.

23           MS. BROOK: Great. Super. Okay.

24           So the last question we have is metrics  
25 for progress. Are data -- do you have any

1 follow-up questions?

2 COMMISSIONER MCALLISTER: Yeah.

3 Actually, I wanted to -- so nobody has mentioned  
4 jobs. And I guess, I mean, you can consider that  
5 a non-energy benefit; right? I mean, we're in  
6 these communities. I want to deepen, in the  
7 afternoon, the question of -- or get everybody's  
8 thoughts and encourage people in their comments  
9 to talk kind of about how best we can move  
10 forward interacting, how best we can interact  
11 with local communities, nonprofits and, you know,  
12 all the sort of stakeholders that really are in  
13 the know and can help us -- help get success  
14 locally. I think it's our obligation to kind of  
15 figure out how best to reach out to them, not  
16 only in this context but in the 758 Action Plan  
17 update and in the doubling work that we're going  
18 to do, we have a lot of parallel work that we  
19 really need to get out there into the world and  
20 hear from people about.

21 And I guess it's -- so economic  
22 development is a goal that is really bound up  
23 with everything we're talking about here. And I  
24 guess I want to -- you know, I personally, you  
25 know, I think, and maybe I'm wrong here, but I



1 think that the most effective approach is going  
2 to have somebody that sort of talks your language  
3 and is from your place, coming and knocking on  
4 your door to do work in your apartment or your  
5 dwelling. And it seems like keeping money local  
6 and sort of injecting money into the local  
7 community is one of the best ways we can have a  
8 positive impact in those places.

9           So I guess in terms -- how do we -- how  
10 might we think about that as a non-energy  
11 benefit, just the local ecosystem of projects  
12 that's the actual work that's going to be done in  
13 these facilities, these buildings?

14           MS. CHEN: I've got some thoughts about  
15 that. Yes to all of what you just said. And I  
16 think that the way to really operationalize all  
17 of these good intentions that we have around  
18 creating a clean energy economy from both the  
19 supply contractors and job side, as well as the  
20 demand customer side of things, is to approach  
21 the job creation question in the same way that we  
22 are approaching all of these other questions that  
23 we're focused on.

24           If we want to save kilowatts and therms,  
25 we set a goal. We figure out what the product or

1 program is that's going to look like it, that's  
2 going to look at addressing that concern. We  
3 resource it with dollars. And then we evaluate  
4 it on the backend. We're really not doing those  
5 things comprehensively or effectively when it  
6 comes to the jobs that are associated with these  
7 programs. Tracking data about who's getting the  
8 jobs is kind of here and there. And a lot of the  
9 programs are not resourced to support workforce  
10 development and the pipeline from training  
11 opportunities into on-the-job, earning money,  
12 career advancement opportunities because those  
13 are, again, considered one of these nice to do  
14 non-energy benefits that's not cost effective to  
15 do it with folks who are trainees.

16           But to your point, if we're really  
17 talking about not just creating like market  
18 transformation, but we're talking about creating  
19 social transformation, we have to think about  
20 that and we have to resource those efforts in the  
21 same way that we would resource efforts to save  
22 kilowatts and therms.

23           MS. SUTLEY: And we -- so LADWP has -- in  
24 fact, they've had a long history of working with  
25 community-based organizations on retrofits. And,

1 for example, in the '80s and '90s, you had a  
2 toilet replacement program that was entirely  
3 carried out by community-based organizations who  
4 literally drove door to door, knocking on  
5 peoples' doors and asking if they wanted a low-  
6 flow toilet. It was a very successful program.  
7 And there's a coalition of community-based  
8 organizations in Los Angeles that the city has  
9 been working with around retrofits of public  
10 buildings.

11           And finally, I want to mention, we also  
12 have within LADWP a program called the Utility  
13 Pre-Craft Trainee, which is trying to get people  
14 into careers at LADWP. We, like other utilities,  
15 are facing a wave of retirements, and so this is  
16 a way to get folks interested. And, you know,  
17 it's a program that allows them to see what a  
18 utility actually does. And one of the programs  
19 that they work on specifically is our Home Energy  
20 Improvement Program, which is a home retrofit  
21 program that's available to both single-family  
22 homes and multifamily homes.

23           MS. BROOK: Great. Our last question,  
24 and again, I think we've touched on this some,  
25 but if there's any final input the panelists

1 would like to provide, that would be fantastic.  
2 Then we're going to open it up to the workshop  
3 participants.

4 Are data-driven metrics currently  
5 incorporated into multifamily program design? If  
6 so, are these the best metrics to track progress?  
7 If not, what else should be tracked?

8 We've heard that we can't silo these  
9 different metrics, that we have to sort of, you  
10 know, think about it holistically. Is there  
11 anything else the panelists would like to  
12 contribute to this?

13 COMMISSIONER SCOTT: Martha, can I add a  
14 little overlay to the metrics question? And I  
15 think it kind of captures much of the  
16 conversation from this morning.

17 And I think that maybe the goals that we  
18 have in the low-income multifamily building space  
19 actually pull the metrics in opposite direction;  
20 right? So if we're talking about a family in the  
21 Central Valley who doesn't have energy  
22 efficiency, may or may not have air conditioning,  
23 and we want to make that house a livable space,  
24 get some energy efficient air conditioning in  
25 there, that's likely to have the energy use go

1 up. But that's a good thing because now the  
2 family has a livable space; right? And so our  
3 metrics in these areas really do pull in  
4 different directions.

5           You know, another example is as we move  
6 towards more transportation electrification,  
7 again, we want to have the building energy use go  
8 down, but we're getting ready to plug in  
9 something that's going to pull the energy use  
10 back up. And so as we're looking at metrics, I  
11 think I'd love your all's thoughts on how do we  
12 not have it one-size-fits-all, but also not kind  
13 of get wrapped around the axle because everything  
14 starts to get very complicated if you're looking  
15 at kind of the push and pull.

16           MS. BROOK: Very good. Thank you.

17           MS. SUTTER: Well, I have two things.  
18 Directly to your kind of thought, to me, if you  
19 have a set of metrics that you look at  
20 holistically, and sometimes some go up and some  
21 go down, but overall they're moving in the  
22 direction that you want, and, Meredith, it  
23 sounded like there were multiple things that  
24 Contra Costa County looks at in terms of thinking  
25 about the health and welfare of their residents

1 and their community, and that's one way to do it.  
2 So you might say, yes, energy is going up, but  
3 this other metric that we have that talks about  
4 quality of life is also going up, and so that's  
5 going to fit for us.

6           So to me, you need to think of these in a  
7 group and kind of put it together.

8           The other thing I will say to kind of the  
9 question that Martha posed to us is at least  
10 within the energy efficiency and the ESSA, the  
11 common area of metrics that I'm familiar with --  
12 and I will premise this by saying, you know, I am  
13 not the person who's been involved in a lot of  
14 this. I think that there are people here who  
15 have already been thinking about this more. But  
16 I will say that many of these metrics are what I  
17 would call output metrics and not the outcome  
18 metrics. And yet, it is much more cost effective  
19 to embed some of the output metrics in data  
20 collection as you go within a program tracking  
21 database. Often, some of the outcome metrics  
22 require a bit more effort to ask maybe that one  
23 question when you're already onsite, or having to  
24 go back and get some of these people, so --

25           MS. SUTLEY: The other thing that's

1 (indiscernible) is just, you know, sometimes I  
2 think we try to shoehorn too many things into the  
3 utility programs. So as we look at our programs,  
4 I mean, we really, we have significant  
5 constraints. We have constraints on what we can  
6 spend money on. And so I think focusing on sort  
7 of -- it helps our customers but it also helps us  
8 if we use less energy, if our customers use less  
9 energy, certainly justified from a cost  
10 perspective.

11           And so, you know, we go through a process  
12 of evaluating, you know, different energy  
13 efficiency programs around cost effectiveness and  
14 other things. And we can choose to, you know, to  
15 consider other things, as well, but it's a pretty  
16 constrained universe, and particularly for public  
17 agencies where we're constrained by Prop 26 to  
18 ensure that our programs are all cost based, and  
19 that has made things more challenging to reach  
20 low-income customers specifically.

21           So I think looking for those  
22 opportunities to partner with other, whether  
23 other city departments, other state agencies,  
24 other programs where we can help to leverage what  
25 the utility can do with what other actors can do.

1 MS. CHEN: Commissioner Scott, I think  
2 what came to mind with your question, which I  
3 think is pretty spot on, is some of the stuff  
4 that Eugene was talking about in the CLIMB Action  
5 Plan in particular, talking about needing to  
6 align programs so that we don't have competing  
7 transportation electrification and energy  
8 efficiency; right?

9 And then also just a lot of these  
10 programs need a little bit of a dust off. You  
11 know, they need a little bit of -- we can call it  
12 spring cleaning, whatever we want. But like, I  
13 mean, this is one of the -- this is one of the  
14 maybe down sides of California being able to move  
15 as quickly as it has on a lot of clean energy  
16 advancements all at the same time is that our  
17 programs, in particular our legacy programs that  
18 were kind of the first and second ones through  
19 the gate, haven't kept up and haven't evolved  
20 along with all the newer programs that are  
21 stacking alongside of it.

22 So I actually think that the process of  
23 taking a look at some of those legacy programs  
24 with a fresh set of eyes and with a set of eyes  
25 that's informed by everything that's going on



1 right now will help to identify some of those  
2 areas that need some tune-ups, and hopefully some  
3 solutions, as well.

4           COMMISSIONER MCALLISTER: It would be  
5 really helpful if you could just sort of feel  
6 free to name names in your comments. I mean, you  
7 know, I mean, we're all friends here. We're all  
8 rowing in the same direction in the same boat.  
9 So, you know, let's just call a spade a spade if  
10 we feel like we need to. And, you know, we're  
11 all -- we have big bureaucracies to negotiate and  
12 navigate and, you know, it's okay; right? So I  
13 feel like, you know, productive conversation kind  
14 of needs us all to be clear about what we're  
15 trying to say, and so I just want to make that  
16 general comment.

17           MS. BROOK: Okay. Does the audience have  
18 any questions for this panel? We have about ten  
19 minutes before we break for lunch.

20           If not, then thank you, and my stomach  
21 thanks you.

22           MS. GOLDEN: Hi, this is Rachel Golden.  
23 I'm with the Sierra Club. And I had a question  
24 about indoor air quality and health.

25           And my understanding is that combustion

1 appliances, especially gas appliances, are a  
2 large source of indoor air pollution, like carbon  
3 monoxide, criteria pollutants and formaldehydes.  
4 And I'm wondering if -- and I know that indoor  
5 air quality is a very hard thing to measure  
6 across the state. And I'm wondering if an  
7 appropriate metric would be sort of appliance  
8 replacement from combustion appliances to zero-  
9 emission appliances, if that would be a good  
10 proxy for improving indoor air quality and also  
11 support media fuel switching policies?

12 MS. MILET: I won't pretend to be an  
13 expert on indoor air quality. We have a whole  
14 section on that. So in any case, I can refer you  
15 to them. But that does sound like it is one of  
16 those more win-win data solutions; right? If  
17 you're switching and you're reducing that  
18 exposure, and then also reducing the energy  
19 efficiency.

20 That does bring up an interesting  
21 question. If you -- there is also the opposite  
22 direction health issue that we have to guard  
23 against which is when you make buildings tighter,  
24 you have worse indoor air quality. And I think  
25 that a lot of times what we're talking about

1 are -- those are different things. When you make  
2 some changes to a building that already is kind  
3 of old but it's just changing some of the sources  
4 of energy or the -- it's not changing the whole  
5 envelope of the building, then you don't have to  
6 worry about that. But in terms of newer  
7 buildings, yes, that is an issue.

8 MS. BROOK: Does anybody else have any  
9 questions for the panel before we conclude?

10 MS. RAITT: So sorry, I'll just jump in,  
11 Martha. We did, I think, get one on WebEx.

12 MS. BROOK: Oh, good.

13 MS. RAITT: So we weren't planning to  
14 necessarily open up before public comments, but  
15 it looks like we got a comment from Deborah  
16 Little (phonetic).

17 "Aside from consumption data, how can  
18 project details data be useful to policy,  
19 building owners and builders to understand what  
20 measures were installed and the results?"

21 I don't know if someone wants to address  
22 that.

23 MS. BROOK: Well, it sort of sounds like  
24 an evaluation question to me, like I would  
25 expect, I mean, if there was a program that was

1 evaluated, it would talk about what measures were  
2 installed and how effective they were, so unless  
3 I'm missing something and you guys see a  
4 different question that was asked.

5           Yeah, I think that's like the typical --  
6 I think the typical answer is we evaluate the  
7 program. That's I think historically what we've  
8 done to understand measure effectiveness. And  
9 like Tami was going to introduce, they have both  
10 profits evaluations and impact evaluations that  
11 are typically done. And the impact evaluation  
12 would go more to the measure effectiveness, and  
13 then the profits evaluation would be more about  
14 did the -- was the program overall effective in  
15 meeting its objectives? So I guess that's how I  
16 would answer that question.

17           MS. SUTTER: I'll add one thing on  
18 specifically with low-income families. And it is  
19 more difficult to get billing data. And they  
20 move more often, so you're unable to necessarily  
21 get what you can often use in energy impact  
22 assessments, which is a year post -- or a year  
23 pre and a year post. It's more difficult with  
24 that particular population.

25           I am unsure how often, especially with

1 this type of population, the evaluation is really  
2 more using what I would call ex-ante values, you  
3 know, values that everybody agrees are you put  
4 this in, you're going to get this much savings,  
5 whether or not there is the money available to  
6 actually go and do a true impact assessment of  
7 energy and demand using billing data, which can  
8 often then show or not, you know, that there  
9 really is this savings. Now the ex-ante values  
10 are typically pretty good, so I don't want to,  
11 you know, say that they're awful. But I'm just  
12 not clear how much some of the assessments are  
13 able to do it, just simply because of the  
14 population type.

15 MS. BROOK: Okay. That's a very good  
16 point. Thank you.

17 MS. SUTLEY: Yeah. Just a couple of  
18 things. When -- do a potentials study every few  
19 years to just, you know, kind of assess what  
20 opportunities are out there and base our programs  
21 sort of on that.

22 And I also wanted to just mention one  
23 other study we were doing which actually was a  
24 response to Commissioner McAllister's question  
25 about economic development. And we've actually

1 done a job creations study, actually, UCLA has  
2 done a job creation study for us on our energy  
3 efficiency programs, and it's in the process of  
4 being updated right now.

5 MS. BROOK: Great. Okay. So thank you  
6 so much. You guys were fantastic for our first  
7 panel. It was really informative and I really  
8 appreciate your participation.

9 And I'm going to turn it back over to  
10 Heather.

11 MS. RAITT: All right, so we'll take a  
12 break and come back at 1:30. Thank you.

13 (Off the record at 12:25 p.m.)

14 (On the record at 1:33 p.m.)

15 MS. RAITT: All right, so we'll go ahead  
16 and get started again. Whoops. Excuse me.

17 So for this afternoon, we're going to  
18 open up a panel on Innovative Technologies and  
19 Multifamily Building Programs. And the moderator  
20 is Mikhail Haramati from the Energy Commission.

21 So go ahead. Thanks.

22 MS. HARAMATI: (Off mike.) So the folks  
23 on this panel are really trying to understand how  
24 to get innovative technologies into multifamily  
25 low-income buildings. And so the panelists that

1 are going to be speaking shortly represent folks  
2 that are either managing or doing retrofits in  
3 apartment buildings. We also have an owner of  
4 housing authorities that own a number of  
5 different types of buildings and manages those  
6 buildings (indiscernible). And they'll be able  
7 to speak a little bit about what it takes  
8 (indiscernible) buildings and operators who want  
9 to do these types of retrofits. And we'll also  
10 talk a little bit about some of the solutions  
11 with overcoming some areas (indiscernible).

12           So similar to the morning panel, I've  
13 asked the panelists to just kind of give a brief  
14 bio and then a couple of talking points, and a  
15 number of them have slides. And then we'll go  
16 into the prepared questions. And then we'll end  
17 up on a broader Q and A.

18           MR. BROOKS: (Off mike.) Okay. Hi  
19 everybody. My name is Andy Brooks. I'm  
20 (indiscernible) for the Association of Energy  
21 Affordability. And we're a nonprofit technical  
22 services organization dedicated to bringing  
23 energy efficiency and renewables to multifamily  
24 buildings in order to foster and maintain our  
25 goal in helping housing communities, particularly

1 those of low-income. And we're pretty much an  
2 on-the-ground organization. We spend most of our  
3 time out in buildings, doing assessments,  
4 troubleshooting, developing specifications for  
5 retrofit projects, getting stakeholders engaged,  
6 working with contractors, and basically doing  
7 everything that's necessary to actually get  
8 retrofit projects through from beginning to  
9 completion.

10           So a lot of that work that we do is  
11 through our role as program implementors, so we  
12 implement a number of multifamily programs  
13 throughout the state for a variety of different  
14 administrative agencies and utilities. And they  
15 all tend to be whole-building comprehensive, both  
16 energy efficiency and solar programs, so the  
17 largest being the Low-Income Weatherization  
18 Program that we implement for CSD, Community  
19 Services and Development, which is a greenhouse  
20 gas reduction program funded through Cap and  
21 Trade GGRF funds that does both efficiency and  
22 solar.

23           And then a new program that's going to be  
24 coming online later this week that was mentioned  
25 earlier, the SOMAH program, we are on the



1 administration, the nonprofit administration team  
2 for that billion dollar over ten year solar  
3 program.

4           Then the other area that we do a lot of  
5 work in is on the research and demonstration  
6 project side. We have a number of CUT-funded  
7 EPIC research and PEER (phonetic) research funded  
8 grants that are all focused on multifamily in  
9 some way, shape or form. Most of them are more  
10 specifically targeting zero-net energy, you know,  
11 pathways towards zero-net energy. And then we  
12 have some that are more focused on indoor air  
13 quality, which was mentioned quite a few times  
14 earlier today.

15           So kind of all of the work that we do is  
16 in multifamily in some way, shape or form, and  
17 most of it is in the low-income affordable  
18 housing space. So hopefully some of the  
19 experiences we've had can help contribute to the  
20 conversation. And I didn't prepare the talking  
21 points. Most of those, I think, will come out in  
22 the discussions that we have from the questions  
23 that come up.

24           MR. NARAYANAMURTHY: Thanks, Andy.

25           Thank you, Mikhail.

1           So I'm Ram Narayanamurthy. I'm with  
2 EPRI, the Electric Power Research Institute.  
3 EPRI is a not-for-profit public benefits research  
4 organization focused on research related to the  
5 electricity city end to end, all from the  
6 generation side all the way to the end-use side.  
7 Most of my personal focus still has been on the  
8 integrated buildings area, so we've been working  
9 on a few different zero-net energy  
10 demonstrations, both for new construction  
11 retrofits, as well as working on technologies  
12 that are what we call filling the gap.

13           So within that portfolio, we work with  
14 utilities around the country. We have quite a  
15 few demonstrations through the EPIC Program and  
16 conjoined that are also demonstrations in other  
17 parts of the country, like Alabama, Georgia,  
18 North Carolina, et cetera, looking at holistic  
19 community-scale, an option of energy efficiency  
20 and solar.

21           So part of the reason I think that what  
22 we wanted to come to the panel for was to talk  
23 about some of the experiences that we have had  
24 with some of our EPIC projects in California.  
25 We've been working with property owners. Dave

1 has been one of our great partners. We have also  
2 been working with some other property owners of  
3 low-income housing. And part of our work has  
4 been looking at what it takes to retrofit from a  
5 holistic whole building perspective.

6           And some of the learnings that we have,  
7 for example, one of the projects that we  
8 completed in Lancaster, one of the things we  
9 learned -- and as you go through these projects,  
10 what you learn is that it's not the technologies,  
11 per se, or the individual technologies that  
12 matter as much as the overall process of how you  
13 go about this retrofit. And so some of our  
14 learnings said, okay, hey, if you're doing solar,  
15 for example, combining solar with energy  
16 efficiency in a lot of cases makes sense because  
17 you have one opportunity over a longer period of  
18 time to be able to do a very deep retrofit. So  
19 when you're doing solar, for example, if you're  
20 updating your roofing, you have more insulation  
21 on your roof, then automatically you are getting  
22 a double benefit to it.

23           So a lot of it goes down to how do you  
24 actually combine technologies, multiple  
25 technologies to provide packages that also have

1 less imposition on the tenants?

2           One of the other things we learned was  
3 that, hey, if we don't engage the property  
4 owners, it's really hard to get those benefits  
5 down to the tenants because without the property  
6 owners, they're not able to participate in this  
7 program.

8           Some of the other learnings, we have also  
9 been looking at how do you take all the links and  
10 work more towards GHG reduction through a  
11 combination of electrification and efficiency?  
12 And so we also run into challenges with, for  
13 example, the distribution system being able to  
14 handle (indiscernible).

15           And in terms of some of the technologies  
16 that have opted out, things like air sealing,  
17 non-inclusive air sealing methods for existing  
18 construction, technologies, let's say, for  
19 example, smart thermostats that don't rely on Wi-  
20 Fi, how do you actually balance master metering  
21 while still managing behavioral elements with  
22 master metering so that you have overall  
23 efficiency (indiscernible)?

24           So those are some of the things that pop  
25 out, and I think we'll be discussing more.

1           MR. BRENNER: Okay. Dave Brenner with  
2 the Fresno Housing Authority. There should be  
3 slides in a second.

4           COMMISSIONER MCALLISTER: Yeah. I think  
5 everybody thinks it's sort of -- I know we're  
6 such an amenable group. I know we don't want to  
7 overpower each other. It's really great. But it  
8 would be good to speak it up so everybody can  
9 hear in the room, and also the reporter.

10          MR. BRENNER: Okay. Just as a little bit  
11 of context, this is Fresno County, so they're  
12 mostly DACs. The household incomes are very low.  
13 And it's quite hot; there's a lot of cooling  
14 days.

15          The Housing Authority is a really active  
16 developer, so with our new projects, we're able  
17 to do a lot. We use utility modeling to capture  
18 the value, and then it sort of pushes back in, in  
19 debt. And so all of our new products are 15 and  
20 20 percent above code and we do a lot of  
21 innovative work on those. But then we also have  
22 this huge portfolio of other projects. Some of  
23 them are HUD properties built in the '50s, and  
24 these are cinderblock duplexes mostly. And there  
25 isn't a really a good value capture mechanism, so

1 we have a hard time retrofitting those. And the  
2 other ones are farm labor properties under USDA  
3 and there's no mechanisms at all.

4 Next slide please.

5 So last year we did six projects with  
6 LADWP, with AEA. And they were on a really tight  
7 timeline, which is always hard for developers.  
8 But so in the left you kind of see what was  
9 really straightforward for us. So they pay about  
10 60 to 70 percent of the total cost, and so a lot  
11 of these things are no-brainers in that regard.  
12 They pushed us really hard on heat pumps, but we  
13 had a hard time with the local jurisdictions. We  
14 had a hard time with the local contractors. And  
15 we had a hard time with USDA when we tried to  
16 share systems because it would affect the way our  
17 subsidy is calculated.

18 COMMISSIONER MCALLISTER: Could you  
19 describe the USDA kind of context --

20 MR. BRENNER: Yeah. So --

21 COMMISSIONER MCALLISTER: -- maybe with  
22 just a couple sentences maybe?

23 MR. BRENNER: -- the USDA supported the  
24 construction of these properties back in the '60s  
25 and '70s. They continue to give us operating

1 subsidy, which is part of the income for the  
2 properties, what keeps them going. But other  
3 than that, there are properties we own and  
4 maintain the properties.

5 COMMISSIONER MCALLISTER: Have you looked  
6 into the subsidies that are available today from  
7 the USDA, sort of rural programs, you know, to do  
8 energy -- clean energy work?

9 MR. BRENNER: Yes. So they haven't had a  
10 call. I think it's two years since they had a  
11 call. We have looked at some of them. They're  
12 pretty poorly funded at this point. We're hoping  
13 in the next couple of years that those projects  
14 will get -- the programs will get a little more  
15 robust.

16 MS. HARAMATI: I was going to say, too,  
17 can you just state how many properties you own  
18 and sort of in what capacity? I think that would  
19 be helpful for folks.

20 MR. BRENNER: Yeah. So we own 75 total  
21 properties. We are a Housing Authority, so we  
22 are a government agency, so we have a regulatory  
23 function, but we also are the owner and property  
24 manager and the development agent for those, as  
25 well. And in some cases, we self-finance because

1 we have our own finance mechanism.

2           Yeah, sorry, it's a lot of housing stuff  
3 that I'm going through fast.

4           The last point I just wanted to make on  
5 this is they have evaporative coolers, which is a  
6 hard thing to deal with for three months of the  
7 year in the Central Valley, but there's no  
8 mechanism within this. It's a GHG program, so  
9 there's no way that we could replace these.

10           Next slide please.

11           And this is a new construction project  
12 we're working on with EPRI and Ram. It's a  
13 complicated project that has a lot of sources of  
14 funding, a lot of ownership complexity. It's a  
15 retrofit and new construction in one. There's  
16 potentially three different CEC sources of  
17 funding, which is even more complicated. But  
18 it's also an uncertain timeline, so some of these  
19 might fall out. And then just very briefly, on  
20 the right is kind of the discussion that Ram is  
21 walking us through. So the program that he's  
22 running is paying the delta between a regular  
23 wall and a high-performance wall, or whatever the  
24 measure might be.

25           So in that context, some of these things,



1 you know, make total sense to an owner, the top  
2 three make total sense. He's kind of trying to  
3 sell us on centralized HVAC, which is really  
4 interesting to us, but there's a lot of unknowns  
5 to us. So I think a bit of data and a bit of  
6 demonstration would help us with controls, as  
7 well.

8           And then I think there's also an unknown  
9 future for all these buildings. There's a  
10 possibility you might consider individualization  
11 of units in the future, so we're going to be  
12 building in electrical redundancy. And the other  
13 ones are pretty straightforward.

14           So next slide please.

15           And then lastly, we oversee the Section 8  
16 program where we add -- we provide administrative  
17 support to that program. And there's a lot of  
18 talk about trying to reach those landlords.

19           In Fresno, it's very hard because there's  
20 low vacancy, low rent properties. And often when  
21 the investments are made it doesn't change rent  
22 or it doesn't change vacancy levels, and it  
23 definitely doesn't change operating subsidy that  
24 comes from the Section 8 program. So a couple of  
25 things we've experimented with are the ESA

1 (phonetic) program. We are now blanket  
2 certifying tenants if they are Section 8 tenants.  
3 And we're trying to make the ESA program more  
4 attractive that way. We're also trying to  
5 integrate some of these programs into our  
6 inspections program.

7           And the last thing I just kind of wanted  
8 to point out, a lot of these landlords are  
9 motivated by ease of manageability; right? So  
10 you talk to them about cost savings, which don't  
11 go to them, and you talk about some of the  
12 upgrades, they don't care that much. But if you  
13 do something that actually improves and makes it  
14 easier to manage their property, they can be  
15 quite receptive.

16           COMMISSIONER MCALLISTER: So these are  
17 not deed-restricted properties, right, the  
18 Section 8?

19           MR. BRENNER: These are, well, for the  
20 majority, not deed restricted. Some are project  
21 based. But the majority are not deed restricted.

22           COMMISSIONER MCALLISTER: Okay. So I  
23 guess, you know, no need to answer fully now but,  
24 you know, what would be the lever, what would be  
25 the moments where if there were a program that

1 could throw, you know, a couple million dollars  
2 at a project of some scale, you know, when would  
3 that really be -- when would an opportune moment,  
4 if any, appear to do that with these non-deed-  
5 restricted properties?

6 MR. BRENNER: Yeah, it's tough because  
7 maybe one of them has ten Section 8 vouchers on  
8 it out of 40, but next year it has two. So it's  
9 not -- I think there's no clear answer for that,  
10 unfortunately.

11 MR. DRESTI: Okay. Good afternoon  
12 everybody. My name is Mauro Dresti with Southern  
13 California Edison. I manage the group that does  
14 demand pilots, demonstrations and programs on the  
15 customer side of the meter for the company. So  
16 I'm going to talk about MUDs in context of the  
17 success and difficulties we've had with getting  
18 them in our Charge Ready Program. So the slides  
19 I have actually talk to that in context.

20 Next slide.

21 So for those of you that aren't aware,  
22 Charge Ready is a program that SCE is running to  
23 install charging stations at noncommercial  
24 properties. The segments are workplace charging,  
25 opportunity charging, like at malls or sport

1 events, things like that, fleet charging and  
2 MUDs. And the way it works is that we go out, we  
3 start a program. We advertise to folks. We've  
4 marketed, so on and so forth. We own all the  
5 infrastructure and install the infrastructure on  
6 our side of the meter. And we also own and  
7 operate and maintain the infrastructure on the  
8 customer side of the meter.

9           And then what we do is we have stub outs,  
10 called make-ready stub outs, that customers can  
11 then go ahead through our rebate program and  
12 install electric vehicle servicing equipment on  
13 top of those -- on top of those items.

14           The amount of rebate that we give is  
15 based on whether they're in a DAC or not. They  
16 get 100 percent if they're a DAC. And they get a  
17 minimum of five units if they're in a DAC also.

18           Next slide.

19           So we've been at this since February of  
20 2017, actually January. We're up to 103 -- I  
21 mean, 1,003 charge ports installed at the  
22 various -- at the various sites. We have 65  
23 projects, so it's approximately 15 charging ports  
24 per site.

25           Next slide.

1           So this is a breakout of the number of  
2 sites per different marketing segment. By far,  
3 the workplace charging is the largest, it's at 40  
4 percent or so -- or 40 projects, I should say.  
5 Destination centers come in next at 23, fleet  
6 come in at 8, and MUD's come in at 3 projects.

7           And the next slide, too, it shows,  
8 actually, the breakdown if you want to know a  
9 little bit -- well, excuse me, the next graph  
10 next to it shows the breakdown as far as whether  
11 it's a federal customer or private business, and  
12 so on and so forth, so mostly private business.

13           Now the next slide actually shows that  
14 we've had 440 customers that have applied. It's  
15 first-come-first-served type of program. And  
16 like I said, out of all those, we have three  
17 sites that are MUD-based.

18           MS. HARAMATI: Can you say what that  
19 acronym means?

20           MR. DRESTI: Multi-unit dwellings.  
21 Sorry, it's an acronym world. What can you say?

22           And that's it.

23           MS. STOVER: Hi. My name is Alice  
24 Stover. I'm the Director of Customer Programs at  
25 MCE. So MCE is a California source community

1 choice aggregator. We've been around since 2008  
2 and we've been doing energy efficiency programs  
3 since late 2012.

4           The first energy efficiency program that  
5 we launched was a multifamily program. And one  
6 of the things that we noticed with that program  
7 was that we had -- somewhere around two-thirds of  
8 our participants were low-income properties,  
9 despite it not necessarily being targeted at low-  
10 income customers.

11           So just towards the end of last year, we  
12 launched a complementary program called LIFT  
13 (phonetic). I should say, our Energy Efficiency  
14 Program is funded through the CPUC Energy  
15 Efficiency funds. And our LIFT pilot is funded  
16 through the low-income funds from the CPUC. And  
17 our objective with this pilot is to blend the  
18 funding from those two program sources and  
19 building on the existing infrastructure that we  
20 had in our multifamily program and build out some  
21 offerings specifically for those low-income  
22 properties.

23           So our Multifamily Program is a  
24 comprehensive program. We do technical  
25 assistance, rebates for whole building work,

1 common area work, as well as in the regular  
2 energy efficiency program, some direct install  
3 measures. With the LIFT Program, we're going to  
4 add on top of that and provide a lot more of a  
5 robust in-unit work at no cost, while also  
6 encouraging properties to go through the regular  
7 EE program for whole building measures or common  
8 area measures.

9 I wanted to talk a little bit about some  
10 of our strategies and a few challenges, and then  
11 we can -- yeah.

12 So one strategy that we employ at MCE, we  
13 call it the single point of contact, and this is  
14 the theory around our program design. And the  
15 idea there is we really want to bundle as many  
16 energy and resource conservation offerings as  
17 possible for our customers when we -- when we  
18 have a point of contact with them.

19 So, for example, we've had a long  
20 partnership with the water agency to install  
21 water saving measures. You know, the Low-Income  
22 Program is an example of this. We also partner  
23 with the Green and Healthy Homes initiative to do  
24 health upgrades, safety upgrades. And now we  
25 started building out a few other complementary

1 programs, including a Multifamily EV Program to  
2 complement a very similar offering that PG&E has  
3 in our service area.

4           And we see two benefits to this program  
5 design. One, we're able to reach more properties  
6 because each of those agencies that we partner  
7 with has a different touch point and different  
8 sort of point of access to customers. And we  
9 also get a much more comprehensive understanding  
10 of the needs and challenges associated with that  
11 property and what they're facing.

12           So I guess one good example of this, we  
13 had a property developer come to us. They were  
14 really concerned about water usage on their site.  
15 So our technical assistance includes that energy  
16 and a water assessment. And so they weren't  
17 necessarily interested in the energy component of  
18 it. But by being able to offer the water  
19 assessment alongside the energy assessment, we  
20 did both water and energy efficiency upgrade or  
21 upgrades, and now are employing other  
22 opportunities, such as the health upgrades at  
23 that site, as well.

24           I think on the -- I just wanted to speak  
25 quickly to two challenges. I think data



1 collection, and then verification, is the  
2 challenge for us. I know it's been mentioned  
3 here today, but the income restrictions are not  
4 uniform across all of the programs that we work  
5 with. And some of them have quite low  
6 restrictions. And so we find significant gaps  
7 between the customers who qualify for programs  
8 and those who are actually experiencing problems,  
9 stress around being able to pay for energy.

10           And then the other one is just the  
11 verification process for income qualification.  
12 It's challenging. Especially in today's  
13 political climate, there's some resistance to  
14 collecting data. That's another challenging  
15 component. And then I think cost effectiveness  
16 is another challenge that we face. So we see a  
17 lot of value in this approach of combining  
18 multiple streams of funding and doing really  
19 comprehensive projects. But it tends to be less  
20 cost effective than sort of focusing on a very  
21 narrow set of measures. And with some of the  
22 funding sources that we're working with, we do  
23 have a lot of pressure to be cost effective in  
24 what we're doing. So we see that as sort of, you  
25 know, pulling us in two different directions.

1           And then one last thing on the technology  
2 front. So with our LIFT Program, we are -- we  
3 have a focus on fuel switching to heat pumps from  
4 gas appliances. And then we also will be adding,  
5 like I said earlier, adding on incentives for  
6 low-income customers to purchase EVs at those  
7 sites that receive the free -- or the fully paid  
8 for charging station to sort of, you know, help  
9 round out that offer.

10           MS. HARAMATI: Okay. Thank you.

11           So next we'll go to the prepared  
12 questions. And I want to invite the  
13 Commissioners to jump in here. So you may have  
14 follow-up questions or want to ask questions of  
15 your own on the topic, so feel free to do so.

16           So the first question is really about  
17 innovative technologies. So one of the things  
18 that we've heard is that not all building owners  
19 or potential participants in programs want to be  
20 Guinea pigs, right, for new technologies. So  
21 what are some of the more appropriate emerging  
22 technologies that would work well within  
23 multifamily applications?

24           COMMISSIONER MCALLISTER: Let me just --  
25 I think this is Panel I questions that are up,

1 and we need Panel II up there.

2 MS. HARAMATI: Yeah.

3 COMMISSIONER MCALLISTER: These are not  
4 your questions; correct?

5 MS. RAITT: I'm sorry.

6 MS. HARAMATI: So the first question is:  
7 What are some of the technologies that would be a  
8 good match for the multifamily sector, and then  
9 any potential differences between the  
10 technologies for low-income customers versus  
11 other multifamily?

12 And potentially, Ram or Andy, maybe you  
13 guys can start.

14 MR. BROOKS: Well, I think across the  
15 board the technologies that we need to kind of  
16 focus on right now are those that impact and  
17 effect when we use energy, as opposed to  
18 necessarily how much energy we're using. With  
19 the kind of 50 percent renewables by 2030, the  
20 intermittency of those is going to be an issue  
21 that we have to deal with across the board. So I  
22 think technologies that can help deal with that,  
23 regardless of the market sector or the building  
24 type, are going to be really important. So  
25 we've -- I think anything having to do with

1 storage, load shifting, behavior modification,  
2 those are all technologies that are going to be  
3 critical across the board and are perfectly  
4 applicable in low-income multifamily buildings.

5           So our focus has primarily been on  
6 looking at heat pump technology combined with  
7 thermal storage. And we've done that both  
8 through the EPIC projects that we're working on,  
9 and then we're in the fortunate position of being  
10 able to do research in parallel with implementing  
11 programs. We've been able to move technologies  
12 and strategies that have worked in the kind of  
13 demonstration world into our programs as we kind  
14 of prove that they're working.

15           COMMISSIONER MCALLISTER: Andrew, could  
16 you describe --

17           MR. BROOKS: Yeah.

18           COMMISSIONER MCALLISTER: -- just quickly  
19 what a successful thermal storage project looks  
20 like in your context?

21           MR. BROOKS: Yeah. So most of the  
22 projects that we're -- the heat pump technologies  
23 that we're looking at are focused on domestic hot  
24 water, so providing hot water for potable uses.  
25 And it's a very kind of straightforward retrofit.

1 You know, as far as kind of emerging technology  
2 retrofits go, it's about the most straightforward  
3 that you can deploy. And we're going, again,  
4 from like anywhere from 60 to 80 percent  
5 efficient gas appliances to, you know, 200- to  
6 300-plus percent efficient heat pump technology.  
7 So there's a huge gain in just efficiency just  
8 from the technology itself.

9           And then pairing that with excess storage  
10 capacity, so the ability to store large volumes  
11 of either hot water or, in some cases where the  
12 heat pump is also providing cooling, you can also  
13 provide stored chilled water. You can use those  
14 heat pumps during off-peak grid hours to generate  
15 that hot and chilled water and then store it for  
16 during peak grid events or, you know, peak  
17 pricing hours and then draw off those tanks, so  
18 that you don't have to use -- you don't have to  
19 run the heat pumps and draw power at those  
20 periods of time.

21           COMMISSIONER MCALLISTER: Are you mostly  
22 operating at the individual unit level or are you  
23 doing larger heat pump systems that have central  
24 storage?

25           MR. BROOKS: Both. So in the EPIC

1 project that we're working with Nehemiah Stone  
2 and Billy Green and Redwood Energy, that project  
3 is looking at four different demonstration sites,  
4 all of which have different configurations. Two  
5 of them have central heat pump chiller plants  
6 that provide heating and cooling and domestic.  
7 And then two of them -- one of them has  
8 individual heat pump water heaters serving each  
9 individual unit. And one of them has central  
10 heat pump water heaters that it's kind of a  
11 hybrid between individual units and central.

12 All of them are exploring what the  
13 appropriate thermal storage strategies would be  
14 in that context and basically determining, you  
15 know, what temperature water do we have to  
16 produce? What do we have to store at? How long  
17 can we ride through those peak events without  
18 causing inconvenience to the occupants? And I  
19 think that's ultimately going to be -- ultimately  
20 going to be critical right now with that --  
21 still, batteries are going to be great for solar.  
22 But right now, using that solar energy to drive  
23 heat pumps that can then produce hot or chilled  
24 water that can be stored is still, I think, more  
25 cost effective. And the technologies are off the

1 shelf. You know, the heat pump technologies are  
2 available. Tanks are tanks. It's really a  
3 matter of dialing in what the control strategies  
4 and algorithms are to optimize it and what kind  
5 of signals we can feed into these systems to tell  
6 them when to run and when not to.

7           COMMISSIONER MCALLISTER: Are you  
8 doing -- so this is great. I could go down this  
9 rabbit hole for a long time, but I've just only  
10 got more question.

11           So are you integrating the hot and the  
12 cold side such that say when you've got a  
13 refrigeration loop -- when the heat pump is  
14 producing refrigeration or cool, are you using  
15 the waste heat, like on the hot side at the same  
16 time for hot water or whatever?

17           MR. BROOKS: One of the -- two of the  
18 projects that we're studying under the EPIC  
19 project do have that capability where when it's  
20 producing chilled water, the warm water that  
21 comes back from that chilled loop is used to  
22 preheat the hot water --

23           COMMISSIONER MCALLISTER: Right.

24           MR. BROOKS: -- on the domestic side, so  
25 it's an energy --

1 COMMISSIONER MCALLISTER: This is great.

2 MR. BROOKS: -- recovery process.

3 COMMISSIONER MCALLISTER: This is great.

4 All right, I love it. I love it.

5 MR. BROOKS: But those are kind of not  
6 necessarily like primo multifamily technology.  
7 You know, they're not the -- right now they're  
8 not quite at the point of being totally effective  
9 for multifamily. So on our next EPIC project,  
10 one of the technologies that we're very much  
11 looking forward to looking at are new unitary  
12 three-in-one heat pumps that provide heating,  
13 cooling and domestic at, you know, a smaller  
14 package and probably in a much more simple, from  
15 a control standpoint, a much more simple  
16 application.

17 COMMISSIONER MCALLISTER: Great. Thanks.  
18 Thanks a lot.

19 COMMISSIONER HOCHSCHILD: Thank you. And  
20 I just wanted to offer thunderous agreement about  
21 the prospect of more heat pumps being able to  
22 help, particularly just given where we are now  
23 with the renewable situation in California not  
24 yet having regionalization, we've having to turn  
25 off every single day in the state of California



1 some solar or wind projects. And what we want  
2 ultimately is to have a happy hour where heat  
3 pumps and EVs are plugged in and making use of  
4 that surplus energy. And, obviously, that's an  
5 efficiency measure that can really help with our  
6 renewables goals. And so I really want to  
7 encourage you and say again how grateful I am for  
8 the tour that you led Commissioner McAllister and  
9 I on.

10 I had a question, actually, for Dave from  
11 the Fresno Housing Authority, just about the  
12 nature of the Section 8 opportunity. In  
13 particular, you mentioned the interest from the  
14 owners in being able to reduce sort of headaches  
15 and maintenance. And I would imagine transition  
16 to LED lights is a big help in that regard. Can  
17 you just give us a sense of the Section 8 housing  
18 you're looking at, what portion of the lighting  
19 is still incandescent or not yet LED and how that  
20 transition is proceeding?

21 MR. BRENNER: I wouldn't want to put a  
22 percentage on it because I guess they don't have  
23 a good feel for it. A lot of it is not  
24 converted. Very little is converted.

25 I think just when you talk to those

1 landlords, it's, I mean, they have lighting, they  
2 have crime, they have issues like that. So from  
3 their perspective, the more lumens you're adding  
4 to your site, the better the site is. And so  
5 they're not really looking at it as these are  
6 awesome light bulbs that are energy efficient.

7 COMMISSIONER HOCHSCHILD: What would you,  
8 just you, what would you guess, what portion if  
9 incandescent today? I mean, could you even  
10 hazard a guess?

11 MR. BRENNER: I would say it's more than  
12 half --

13 COMMISSIONER HOCHSCHILD: Still?

14 MR. BRENNER: -- I'd guess.

15 COMMISSIONER HOCHSCHILD: Wow.

16 COMMISSIONER MCALLISTER: Well, you're  
17 talking about the part of the lighting that is  
18 under the control of the landlord? Or -- because  
19 the individual units, those people would be,  
20 presumably, replacing their own light bulbs;  
21 right?

22 MR. BRENNER: Correct.

23 COMMISSIONER MCALLISTER: Yeah.

24 MR. BRENNER: Yeah.

25 COMMISSIONER MCALLISTER: Okay. So we're

1 talking common area, outdoor, you know?

2 MR. NARAYANAMURTHY: In our experience a  
3 lot of the unit lighting is actually plug  
4 lighting --

5 COMMISSIONER MCALLISTER: Yeah.

6 MR. NARAYANAMURTHY: -- so it's not fixed  
7 lighting.

8 COMMISSIONER MCALLISTER: Right.

9 MR. NARAYANAMURTHY: There's very little  
10 fixed lighting in all of these units. So the  
11 plug-in lighting, I don't think they fall under  
12 the efficiency programs as much as the fixed  
13 lighting.

14 MS. HARAMATI: So I'll just ask a follow-  
15 up question to Alice around whether you think  
16 that there are differences in the technologies or  
17 the types of interventions that are useful for  
18 low-income multifamily customers versus non-low-  
19 income?

20 MS. STOVER: Well, I actually think it's  
21 important that we're willing to invest in the  
22 low-income programs so that the offerings that we  
23 put out there for low-income customers are good  
24 and things that they will appreciate and use and  
25 help them meet their needs, and I think

1 especially related to understanding energy usage  
2 and controlling usage.

3           So I guess I won't really speak too much  
4 to the technologies, but I just think that it's  
5 really important that we're not sort of doing it  
6 halfway but that we're really investing, and that  
7 it's quality work that we're doing in low-income  
8 property.

9           MR. BROOKS: I have something on that  
10 other point, just in terms of the technologies  
11 that might be applicable for low-income.

12           One of them is giving the tenants some  
13 understanding of how much energy they're using  
14 and when they should be using it versus when they  
15 shouldn't be using it. There are a number of  
16 products coming on the -- there are already a ton  
17 of products on the market, but there's more  
18 coming on. And the capabilities of those  
19 technologies, you know, varies from product to  
20 product from being as simple as just a light on  
21 the wall that says now is a good time to use  
22 energy versus a bad time to use energy, to the  
23 other side of the spectrum where it does that,  
24 but also is able to control the appliances in the  
25 apartment and load shift for you based on, you

1 know, varying inputs, so time-of-use pricing or  
2 other.

3           And I think that is a technology and a  
4 measure that's being under deployed in this  
5 market that is ultimately going to be really  
6 critical going forward.

7           COMMISSIONER MCALLISTER: So who -- so  
8 this morning we heard about OhmConnect, you know,  
9 or we -- somebody mentioned OhmConnect. And  
10 that's one kind of market-based way to get what  
11 you're talking about done.

12           I guess are there other pathways and  
13 other offerings that are --

14           MR. BROOKS: Oh, yeah.

15           COMMISSIONER MCALLISTER: -- that are  
16 gaining traction in the low-income multifamily  
17 sphere?

18           MR. BROOKS: Well, the ones that we've  
19 been looking at in our -- the ones we have in all  
20 of the EPIC demonstration projects under one  
21 grant is a product called NEXI (phonetic) that is  
22 kind of the simple just light that is based on --  
23 you know, it changes color based on a preset  
24 energy budget. It goes from green to yellow to  
25 red. So, you know, as the day progresses, as you

1 get closer and closer to what your preset energy  
2 budget is, it changes color and people know when  
3 to stop using. There's another product,  
4 Emberpulse. I mean, there are actually quite a  
5 few --

6 COMMISSIONER MCALLISTER: Yeah.

7 MR. BROOKS: -- products coming out,  
8 SkyCentrics. And some of the have demand response  
9 capability integrated into them, and I think  
10 that's kind of the next wave of what we're going  
11 to be seeing as emerging technology on that  
12 front.

13 COMMISSIONER MCALLISTER: Are any of  
14 those being sort of sponsored or sponsored by the  
15 utilities or sort of an interface with the rate  
16 structure at the utility, or the smart meter or  
17 whatever, is actually driving the response -- or,  
18 you know, the color of the light or whatever?

19 MR. BROOKS: Not that I'm aware of yet.  
20 I could be wrong, but --

21 COMMISSIONER MCALLISTER: Yeah. So,  
22 yeah, that was really a question for Edison.

23 MR. DRESTI: Well, if I can, this doesn't  
24 really pertain that much to low-income, but it  
25 can.

1           We have a Smart Thermostat Program that  
2 we kicked out for demand response called Save  
3 Power Days, where it's probably the biggest  
4 bring-your-own-thermostat program in the USA. We  
5 have about 50,000 customers onboard using devices  
6 like Nest, Ecobee, so on and so forth. And  
7 they're demand response, so they pre-cool and  
8 shut down, very cost effective. I think that  
9 could work in low-income, except for one thing.  
10 And the biggest issue is Wi-Fi network capability  
11 within the structure. And that's something that  
12 Ram was mentioning. And that's -- I don't know  
13 how we get around that. You're saying that there  
14 might be some other thermostats that can do that.

15           But very quickly, we reliably get through  
16 independent MMV (phonetic) anywhere from 700 to  
17 750 watts reduction when we call an event. The  
18 customer is not put out that much because they  
19 can just change the temperature whenever they  
20 want, and it seems to be a very reliable way to  
21 do business.

22           MR. NARAYANAMURTHY: Well, Mauro, I mean,  
23 maybe I'll add to that. I think that's a very  
24 valid point that you brought up that can be -- so  
25 there's the what you can do in the building shell

1 and what you can do for the behavior of the  
2 tenants. And one of the challenges related to  
3 the low-income tenants is that they don't have  
4 Wi-Fi; right? So then a lot of the technologies  
5 that are based on Wi-Fi, right, whether it's  
6 connected water heaters, connected thermostats,  
7 they all struggle with that.

8           So again this is one avenue we're  
9 exploring, actually, through one of the EPIC  
10 projects, too, is actually looking at Bluetooth  
11 connectivity because the CPUC has the Lifeline  
12 Program which gives an Android phone to the low-  
13 income tenants. So what we're looking at is,  
14 okay, hey, if you can get to the phone, right,  
15 and use the phone as a way to communicate,  
16 whether it's rates, whether it's signals for  
17 devices, whatever it is; right? So that's one  
18 avenue that we are exploring because of the fact  
19 that I think in our experience we found maybe 15  
20 percent of people have broadband, and even fewer  
21 have Wi-Fi.

22           MR. DRESTI: And that could work.  
23 Something like that could work.

24           So as a follow-up, though, real quick, to  
25 make it scalable, we use Open 8 Air (phonetic)



1 that we helped -- that you guys helped us  
2 develop. And I think that's a great protocol to  
3 talk from a utility to devices, not rely on a  
4 manufacturer's portal and make it difficult to  
5 scale up.

6 COMMISSIONER MCALLISTER: Yeah. I would  
7 just -- I want to second that in general terms,  
8 that depending on proprietary approaches, it  
9 probably has some pretty large drawbacks. So if  
10 we can sort of -- if the utility can kind of, you  
11 know, shepherd the programmatic environment or  
12 programmatic approach to kind of getting into,  
13 you know, being relatively uniform and  
14 standardized about it --

15 MR. DRESTI: Yeah.

16 COMMISSIONER MCALLISTER: -- that would  
17 be good.

18 MR. DRESTI: The key aspect to the  
19 program is that we use an open source software to  
20 control the devices, but we don't particularly  
21 control devices. We work with the customer --  
22 with the clients -- yeah, the vendor's  
23 proprietary network.

24 COMMISSIONER MCALLISTER: Yeah.

25 MR. DRESTI: But we hold them to a

1 performance contract, and that's all we really  
2 need to worry about, you -- we want this amount  
3 of DR, you guys figure out how to do it and make  
4 sure that the load is there.

5 MS. HARAMATI: The next question is kind  
6 of, you know, one of the general themes of the  
7 day, which is really around. I guess I'd like to  
8 pose this to Dave.

9 So you have sort of a unique perspective  
10 as being a building owner and operator. So in  
11 your experience, what are some of the barriers to  
12 broader adoption of innovative distributed energy  
13 resources? And I just want to take a moment to  
14 kind of say what those are because we talked  
15 about it at the beginning of the day. Eugene  
16 included it in his presentation, but -- and he  
17 didn't forget. And so we're looking at pre-  
18 commercial energy efficiency, demand response,  
19 storage, innovative solar, solar thermal, things  
20 that are maybe not as widely adopted already, and  
21 electric vehicle chargers.

22 MR. BRENNER: Yeah. So I think we are  
23 looking at all of those except storage, at this  
24 point. There's a lot of learning that has to  
25 happen, partly because there's a variety of

1 different programs out there. There's a lot of  
2 unknowns in how this stuff is all changing so  
3 fast. And so we rely a lot -- like on the LADWP  
4 program, they were excellent in helping us  
5 understand things.

6 I think there's a lot, as far as the  
7 solar. We're really -- future rate changes and  
8 all that structure is really confusing to us.  
9 And like the V-dim (phonetic) process is really  
10 hard for us. And so stuff like that has really  
11 set us back a lot and so -- and partly, we have  
12 just too many of these things happening at once  
13 and we can't focus. I mean, this is not our  
14 mission. Our mission is housing, that's what we  
15 do. This is actually like fourth or fifth down  
16 our list of priorities.

17 So I think those things are the main  
18 thing that are holding us back.

19 MS. HARAMATI: And are there some  
20 solutions or things that you've seen that have  
21 worked, that have helped getting these innovative  
22 technologies into your buildings?

23 MR. BRENNER: I think the flexibility and  
24 kind of the holistic approach that LADWP took, it  
25 was sort of a bigger conversation of them helping

1 us with a lot of things. If there had been more  
2 time on the timeline, we would have really taken  
3 a lot of their technologies that they had  
4 proposed. And I think the same is going to be  
5 true as the work we're doing with EFRI right now,  
6 is that we need a lot of time to understand this  
7 stuff. And the more they can show us  
8 demonstrations on controls and stuff like that  
9 the more we're going to be onboard.

10 MS. HARAMATI: Okay. Thank you.

11 MR. DRESTI: Okay, I'll talk to it in the  
12 context of multi-unit dwellings for the MUD  
13 folks.

14 I showed what was going on in Charge  
15 Ready, specifically, to show that we have had  
16 some successes but we really have challenges in  
17 trying to get electric vehicle chargers in these  
18 communities. The main reasons that we've had  
19 some problems were charging stations are really a  
20 low priority for the property owners. They  
21 really don't know how many people are going to  
22 utilize them. Customers may not be interested,  
23 that particular customer interest for electric  
24 vehicles at the time. And then there's other  
25 issues like parking management issues. As you go

1 ahead and change out or touch a parking lot, you  
2 have to make it meet the new requirements. And  
3 that's sometimes a little more onerous than  
4 current property owners want to work with.

5           So I think what will help, what we did is  
6 that we had a couple of workshops with apartment  
7 owners, try to get them up to speed on what's  
8 going on. We really didn't have a lot of success  
9 at that. There wasn't a lot of interest. So we  
10 resorted to going out and having one-on-one  
11 conversations through our account managers with  
12 building owners. We had 147 of those in the past  
13 year-and-a-half, which resulted in the 35 charge  
14 stations we've put in.

15           So increased marketing does help. We  
16 need to, I think, also target new construction as  
17 the market grows because it's going to be lower  
18 cost, easier for us to install and bring down the  
19 costs of the devices. Possibly additional third-  
20 party incentives for used vehicles, for used EVs,  
21 that type of thing, so there's more of them out  
22 there. It's still a new market. Vehicles last  
23 about 11 years. Those are ICE (phonetic)  
24 vehicles, so EVs will probably last a little bit  
25 longer. And it's going to take a little bit more

1 time for this market to get to this market  
2 segment.

3 MS. HARAMATI: Okay, great. Thank you.

4 So before we move on to the golden carrot  
5 question, I want to just return to heat pumps for  
6 a moment, since I know this is a topic of  
7 interest, and just pose the question to Ram and  
8 Andy, what could be done, in your opinion, to  
9 increase the adoption of heat pumps in the low-  
10 income multifamily apartments, given the cost  
11 issues with installation, the skilled labor  
12 that's needed, and also concerns about operating  
13 costs of switching from natural gas water heating  
14 to maybe a heat pump coupled with electric  
15 resistance heaters that could potentially  
16 increase the electric bill of the customer?

17 MR. NARAYANAMURTHY: So I think from an  
18 operating costs perspective, one of the things  
19 that we've been looking at is this whole concept,  
20 if you're doing a holistic upgrade, there are  
21 these constraints around how the property owner  
22 gets paid for or the rent gets offset for the  
23 utilities, using the utility allowance  
24 calculators. So when you do a holistic upgrade,  
25 sometimes it actually makes sense for the

1 property owner to take on the entire energy use.  
2 And, in fact, that's my point of discussion we  
3 are having on how do you manage behavior?

4           So let's say you're putting in heat pumps  
5 and putting in solar at the same time, it might  
6 actually make sense for the property owner to  
7 make it a master metered property. That way they  
8 can manage and actually get the benefits of the  
9 heat pumps without passing the costs onto the  
10 tenants.

11           One of the other challenges we are seeing  
12 with heat pumps and water heaters is that the  
13 distribution system network, the electric  
14 distribution networks aren't designed for  
15 electrification. Most of the distribution  
16 systems are designed for gas water heating, gas  
17 space heating, and so there are some costs that  
18 we need to consider. And we have to figure out  
19 who pays for those costs, because the property  
20 owners cannot sustain those costs.

21           So today, I think one example is the  
22 Charge Ready Program where the utility is able to  
23 rate base the cost of increasing the  
24 infrastructure to provide the EV charging. And we  
25 might have to look at something similar for the

1 heat pump side.

2           But overall, I think the opportunity for  
3 heat pumps can be high if we can manage the  
4 tenant cost, the occupant cost through some kind  
5 of a financial mechanism.

6           MR. BROOKS: And I would just mainly  
7 point out about, in terms of the potential for  
8 increased costs associated with heat pumps,  
9 that's still pretty speculative at this point.  
10 We don't really know whether that's going to be  
11 the effect. And so far we've been somewhat  
12 heartened by the projects that we have been able  
13 to do post-utility analysis on that we've done  
14 fuel switching from gas heating and space heating  
15 and water heating to heat pumps. And again, we  
16 don't have a very large pool yet, but of the  
17 projects that we've seen the interesting tidbit  
18 has been that the utility costs have actually  
19 gone down, and that's before we've actually even  
20 turned on the PV system and before we've adjusted  
21 their utility base, their gas heating baseline.

22           So those are two things that are going  
23 to -- you know, for all the LIHTC (phonetic)  
24 projects where we're doing fuel switching, we're  
25 also doing solar at the same time, so the solar



1 is going to offset the increased electric load  
2 anyway. But even without that, across the board,  
3 when you switch from gas heating to electric  
4 heating, you go into a different utility tariff.  
5 And that, even without those two things enabled,  
6 we've seen on the couple of projects that we've  
7 done the analysis that bills have come down.

8           So I wouldn't say that that's necessarily  
9 going to be the case across the board, but it may  
10 not be as much of a concern as people are  
11 thinking.

12           COMMISSIONER MCALLISTER: Well --

13           MR. DRESTI: And there's a --

14           COMMISSIONER MCALLISTER: -- oh, go  
15 ahead.

16           MR. DRESTI: Sorry. There's another  
17 piece, too. That's for natural gas. But some  
18 customers are served out in the valley by  
19 propane, which are -- oh, sorry, that's the case,  
20 so --

21           MS. RAITT: Use your microphone.

22           MR. DRESTI: Yeah. It sounds -- sorry, I  
23 was just in the moment here.

24           Some customers are actually fueling their  
25 heating through propane, which I understand is

1 far more expensive in terms of dollars per BTU.

2 COMMISSIONER MCALLISTER: Uh-huh. I  
3 wanted to ask just about the health and safety  
4 aspects of, you know, of combustion generally,  
5 but also, well, just is there -- I mean, it seems  
6 like there is a benefit, indoor air quality and  
7 just health and safety generally. Is that a real  
8 thing that you perceive from customers or in any  
9 other way?

10 MR. BROOKS: It's definitely a real thing  
11 in that we've done combustion appliance testing  
12 on thousands of --

13 COMMISSIONER MCALLISTER: Yeah.

14 MR. BROOKS: -- wall furnaces and  
15 furnaces and they fail. You know, they're still  
16 in combustion gases back in the department.  
17 There are natural gas leaks all over the place.

18 COMMISSIONER MCALLISTER: Yeah.

19 MR. BROOKS: So it is definitely a real  
20 thing. Whether it's a perceived thing and  
21 whether it's leading to health consequences from  
22 the residents, we don't really have that data, or  
23 at least we don't have that data, but I suspect  
24 that it is. And it certainly is a valid reason  
25 for removing them.

1 MS. STOVER: One component of our LIFT  
2 pilot is the fuel switching component. And with  
3 that we're -- we'll be doing pre-monitoring and  
4 post-monitoring of the equipment, so we'll be  
5 measuring the emissions onsite before removing  
6 the gas equipment. We're also doing pre-surveys  
7 and post-surveys of residents, so hopefully  
8 through this we'll be collecting some data on the  
9 perceived impacts of equipment.

10 COMMISSIONER MCALLISTER: Great.

11 MS. HARAMATI: Great. Thank you. So I  
12 guess now we'll turn to the golden carrot  
13 question, which I think is kind of the question  
14 that's on everyone's mind.

15 And so what are the main barriers that  
16 we've heard about? It's the lack of bandwidth  
17 for multifamily building owners just in terms of  
18 time and being able to get their attention and  
19 kind of say this is something that is worthwhile  
20 and, you know, there's money to be had, it will  
21 improve the value of your buildings.

22 So I guess maybe we'll start with Dave,  
23 and then go to Ram and Andy, and others can chime  
24 in.

25 So what does a delicious golden carrot

1 look like to building owners? You know, what can  
2 we offer them, we as government or the utilities,  
3 to convince landlords and building owners to want  
4 to do a retrofit?

5 MR. BRENNER: Yeah. I guess I think for  
6 us, it's just a combination of there being some  
7 way to capture a portion of the revenue, and then  
8 mixed with technical assistance which builds up a  
9 little bit of confidence in the technologies that  
10 we're putting in. And if you can get those two,  
11 it doesn't have to be a lot of revenue coming  
12 back, it doesn't have to be a ton of technical  
13 assistance, but a little of the two can put a  
14 project together really quickly.

15 MR. NARAYANAMURTHY: In our experience, I  
16 think the concept of a one point of contact, I  
17 think PG&E calls it the program concierge  
18 concept, where a property owner can go to one  
19 person who can manage both the utility programs,  
20 the non-utility programs, and bring in financing  
21 packages together so that the property owners  
22 don't really have to break their head thinking  
23 about it.

24 MR. BROOKS: And, yeah, I guess would  
25 agree with that, the kind of one-stop-shop model

1 has been talked about a lot. I think picking up  
2 where Martha mentioned, I think the next kind of  
3 iteration of that is really moving more towards  
4 the notion of like a clearinghouse-type concept,  
5 and this is actually something we're  
6 experimenting with right now. We have a variety  
7 of funding sources coming in, all to deliver  
8 energy efficiency and solar. And we have  
9 building scientists out in buildings all day long  
10 but they -- and so they're able to identify  
11 health and water and other related issues, but we  
12 don't have the same pool of funding to offset  
13 those things. So we can identify them, but we  
14 can't help necessarily address them.

15           The notion of having a clearinghouse  
16 where program -- regional program administrative  
17 agencies can kind of plug into that, you know the  
18 energy efficiency programs and, you know, take  
19 out what metrics they want, so if it's a health  
20 agency and they're looking to reduce the number  
21 of asthma-related ER visits, I mean, that's the  
22 metric that they're going for, they can put money  
23 into a clearinghouse, put their funding into a  
24 clearinghouse and pull out those types of  
25 benefits. If it's, you know, the number of

1 projects that tighten their envelope down to one  
2 ACH and install heat recovery ventilation, you  
3 know, that could be the metric by which they're  
4 trying to -- that they're trying to achieve.

5           But I think the notion of pooling sources  
6 of funding that are beyond just energy, not  
7 just -- you know, we've already got some solar  
8 and efficiency combining now which is great,  
9 those two had been siloed for so long, now at  
10 least we've made some progress there. But if we  
11 can move on to integrating those health dollars  
12 and structural assessments and other kind of  
13 housing-related program dollars into a more  
14 central location where building owners not just  
15 access the technical assistance but the funding,  
16 as well, through a streamlined mechanism, I think  
17 that's probably the next evolution of that.

18           COMMISSIONER MCALLISTER: How much are  
19 you -- how many jurisdictions that you work in  
20 have programs to sort of update the healthy  
21 stock, you know, lead paint abatement and just  
22 kind of general refurbishment?

23           MR. BROOKS: I think they all have some  
24 version of that.

25           We're working with -- we just started a

1 project with the Santa Clara HCD. And their  
2 objective is to lower the operating costs of  
3 affordable housing in their jurisdiction. So  
4 it's not necessarily energy efficiency, it's  
5 lowering the operating costs however they want.  
6 They wanted to tap into the BAYREN Program, which  
7 is one of the programs that we implement in their  
8 jurisdiction. But in their jurisdiction, they  
9 have a municipal electric utility, so they could  
10 only get a portion, only the gas funds, from the  
11 BAYREN, and that wasn't enough. So what they're  
12 doing is taking their housing dollars, and  
13 they've also reached out to the municipal utility  
14 to come into this and basically layer those  
15 dollars on top of the BAYREN infrastructure.

16 And so their main objective really is to  
17 lower the operating costs, to do any work that  
18 will do that, and they're layering their dollars  
19 on top of the energy efficiency programs, so it's  
20 kind of a light version of that. And I think  
21 every jurisdiction has some funding available for  
22 those types of things.

23 COMMISSIONER HOCHSCHILD: You know,  
24 Mikhail, you mentioned the sort of golden carrot  
25 for the building owners. I think it's also a

1 golden carrot for policymakers here, specifically  
2 with the heat pump question, which is that unlike  
3 energy efficiency and unlike rooftop solar which  
4 reduce the number of kilowatt hours procured from  
5 utilities, heat pumps actually increase it;  
6 right? Because most of the costs of the system  
7 are fixed, you're spreading those fixed costs  
8 over a greater number of kilowatt hours. And it  
9 is a downward force long term on electric rates.

10           And the same dynamic is true for the 5  
11 million electric vehicle goal where Commissioner  
12 Scott is leading. That will increase electric  
13 load by eight percent, and you have a downward  
14 force there on rates over time. I think it is  
15 useful to track that, or at least to do some  
16 estimates for heat pumps, as well.

17           I don't know, Commissioner McAllister, if  
18 anyone is making those kind of --

19           COMMISSIONER MCALLISTER: Yeah. So the  
20 thing is that depends on them not pushing up the  
21 peak; right? Because the driver of a new  
22 (indiscernible) that would then force rates up  
23 would be, if you had the -- you know, if it  
24 forced, you know, an expansion in peak capacity.

25           And so that's, you know, your point,



1 Andrew, about making sure the shift load or, you  
2 know, basically, load shape in a way that  
3 improves load factors, you know, is really  
4 critical to making this whole thing work. And so  
5 I think that if we're -- any initiative to adopt  
6 heat pumps at scale would really have to come  
7 along with demand response. It's just integral  
8 to the program, you know, particularly if we're  
9 going to subsidize this, it's like we've got to  
10 subsidize it in the right direction.

11 COMMISSIONER HOCHSCHILD: Right.

12 COMMISSIONER MCALLISTER: So --

13 COMMISSIONER HOCHSCHILD: Right. Fair  
14 point.

15 MS. HARAMATI: Those are all the prepared  
16 questions we had.

17 Do the Commissioners have follow-up  
18 questions, or Advisers?

19

20 COMMISSIONER HOCHSCHILD: No. I just wanted  
21 to thank all the panelists. There's really  
22 tremendous work happening across the board. You  
23 guys are doing terrific stuff, so keep it up.

24 COMMISSIONER MCALLISTER: Does Sandy  
25 or --

1 COMMISSIONER SCOTT: I have one question.

2 COMMISSIONER MCALLISTER: Yeah? Go  
3 ahead. I have one other question, but I'll come  
4 back to it.

5 COMMISSIONER SCOTT: Okay. Yeah. Mine  
6 is not necessarily a question, but there's a lot  
7 of really good information here. And I think to  
8 the extent that you and others around the  
9 audience and folks how are listening in on the  
10 WebEx have specific examples of things that  
11 worked really well that you can provide for us,  
12 or specific examples of things that just were a  
13 disaster and here's why, so don't run down that  
14 path, I think that will be helpful as we're  
15 trying to really think through how to put all of  
16 these components together. And we have lessons  
17 learned at the Energy Commission from some of the  
18 programs and projects that we have funded, but  
19 there's a ton of experience out here.

20 So just to kind of get nuggets from you  
21 on that I think would be really helpful. And I  
22 know we're at the end of time, so I won't ask  
23 folks for that right now. But if you'll send  
24 that into our docket or get that to us, that  
25 would be really helpful.

1                   COMMISSIONER MCALLISTER: Cool. So I  
2 want to just come back to a point I started to  
3 make in the morning, but just in terms of -- so,  
4 you know, you all are operating at the local  
5 level, you know, most of you and -- well, three  
6 out of five, at least. And the Edison and Ram,  
7 you're participating in these projects. And so I  
8 wanted to just see, really, or ask about the best  
9 way for local, state -- sort of  
10 local/regional/state collaboration to take place?  
11 I mean, you guys are down at the project level,  
12 you know, drumming up sort of interest and  
13 lessons and really doing stuff, you know,  
14 learning hard-won lessons.

15                   And, you know, I just want to make sure  
16 that we develop the structural -- our  
17 collaboration has legs to it for the long term,  
18 such that we build in the communications up and  
19 down the chain so that we don't miss things that  
20 are being learned on the ground and get them into  
21 policy in a relatively expeditious way and can  
22 feed those back, you know, help facilitate the  
23 learning across local jurisdictions. You know,  
24 if you're in Fresno, you're learning a bunch of  
25 great stuff. Well, how do we make sure that the

1 Bakersfield and the Redding and every place else  
2 kind of can build on what you're learning?

3           So think sort of structurally about how  
4 this conversation ought to continue. And then  
5 sort of at the local end of it, how the local  
6 entities that are doing the work on the ground  
7 can be best supported? And, certainly, that's  
8 resources, we all know that, but also just enable  
9 that in any other way too.

10           So Adenike, do you have any questions  
11 now? Okay, great.

12           Sandy? No. Okay. Great.

13           Thanks very much.

14           MS. RAITT: So we had scheduled a break,  
15 so we can take a break for 15 minutes. Back at  
16 2:45.

17           (Off the record at 2:30 p.m.)

18           (On the record at 2:49 p.m.)

19           MS. RAITT: Let's go ahead and take seats  
20 and we'll get going again. I know it's always  
21 hard to get started again in the afternoon.

22           COMMISSIONER MCALLISTER: Okay,  
23 everybody, we all want to get out of here on  
24 time, okay, so let's get moving.

25           MS. RAITT: Thanks. So we have a

1 presentation from Ted Lamm at UC Berkeley Center  
2 for Law, Energy, and the Environment.

3 MR. LAMM: Good afternoon. My name is  
4 Ted Lamm. I'm a research fellow at the Center for  
5 Law, Energy, and the Environment. Our programs  
6 work with stakeholders in state, local government  
7 industry, and advocacy to address California  
8 policy issues across the energy and environmental  
9 spheres.

10 Our Climate Change and Business Program  
11 is a collaboration with UCLA School of Law and  
12 Bank of America. And since 2009, we've produced  
13 over 20 policy reports on issues ranging from  
14 renewable energy to transportation, energy  
15 efficiency, land use and more.

16 This is some background that I think you  
17 all are very familiar with. As part of this  
18 series, earlier this year we identified the low-  
19 income multifamily energy efficiency sector and  
20 issue as an area that we could apply our  
21 resources. And specifically, we aim to build on  
22 the recommendations of the SB 350 Barriers Study  
23 with input and assistance from a number of people  
24 in this room, including but not limited to Eugene  
25 and Mike and some Energy Commission staff. And

1 we based our project, which is ongoing, on the  
2 structural and program barriers that you see  
3 here, which I think everyone is pretty familiar  
4 with, but in particular, split incentive problem,  
5 market delivery issues, and program integration  
6 issues came to the fore.

7           So this spring we convened a group of  
8 stakeholders in a convening model that we use  
9 frequently, which is a facilitated discussion  
10 that surfaces consensus solutions that we can  
11 then compile into a public research report. So  
12 we had 20 participants representing key state  
13 agencies, utilities, housing developers, and  
14 advocates, et cetera.

15           And the format that we use is the group  
16 collectively describes a vision of their ideal  
17 system for financing low-income multifamily  
18 energy efficiency retrofits. The group then  
19 identifies challenges to the creation of that  
20 system, proposes and discusses a wide range of  
21 solutions, some of which are consented, some of  
22 which create some disagreement to overcome those  
23 challenges. And then sometimes we prioritize  
24 really near-term high-priority action solutions  
25 that can be achieved in the near term.

1           So this was the six-part vision that the  
2 group identified. As you can see, the vision  
3 that the group identified aligned not only with  
4 the Barrier Study, but also much of what's been  
5 presented today.

6           The first item, number one, was a single  
7 entity for energy efficiency program  
8 administration. It's not possible to eliminate  
9 all complexity, as Isaac and others have  
10 demonstrated throughout the day. The sector is,  
11 itself, very complex. Layering efficiency and  
12 financing for efficiency on top of that is doubly  
13 complex. And there's a reason that current  
14 multiple programs exist. But participants  
15 described a vision where even if all that  
16 complexity can be packaged in one place so that  
17 users and consumers on the front end essentially  
18 don't see it and it's all, perhaps, behind the  
19 curtain, that could substantially increase uptake  
20 of efficiency programs.

21           Number two was long-term funding for  
22 state efficiency programs. The owners and  
23 developers in the group consistently emphasized  
24 the long-term and comprehensive way that they do  
25 their planning across all of their projects for a

1 property or set of properties and their desire to  
2 include efficiency retrofits in that long-term  
3 planning process, and the need for long-term  
4 secure funding opportunities if they're going to  
5 do that.

6           Number three was aligning financing  
7 opportunities with renovation and refinancing  
8 plans that exist outside of the efficiency  
9 sphere. Low-income, and particularly subsidized  
10 buildings, can have very complex financing  
11 restrictions, and also limited capital. And  
12 funds that are made available by the state need  
13 to be available at the trigger points, whether  
14 it's refinancing or a standard renovation on a  
15 10- or 25- or 30-year timeline. The funds need  
16 to be available then, so that they can be used at  
17 the right moment.

18           Other items in that vision were guarantee  
19 the minimum retrofit performance to minimum the  
20 risk, widespread owner, tenants and program  
21 access to building energy data, which AB 802 and  
22 the Los Angeles program described earlier are  
23 beginning to address, and that's to inform not  
24 only to get information to owners and developers  
25 to initiate projects, but also for those who are



1 contemplating projects to prioritize the  
2 retrofits that make the most sense and are most  
3 cost effective in a limited capital environment.

4           And then finally but not at all least  
5 importantly, support for tenant benefits and  
6 protection of affordable housing to ensure that  
7 current tenants aren't displaced and to ensure  
8 that non-monetary benefits are accounted for.

9           So in identifying challenges to achieving  
10 this vision, it is, in fact, an inverse, to some  
11 extent, of the vision. So in general, a lack of  
12 program coordination across the four or five  
13 multiple programs that currently exist, which are  
14 implemented by different staffs in two or three  
15 agencies, plus the utilities.

16           Number two was a lack of reliable long-  
17 term public funding, as discussed, to facilitate  
18 the integration of energy efficiency retrofit  
19 planning into long-term property planning.

20           And number three was a lack of confidence  
21 in savings, which goes to performance guarantees  
22 or other mechanisms to ensure that savings  
23 actually occur, as well as a lack of confidence  
24 in non-energy benefits which is the accounting  
25 for benefits that don't accrue in direct benefit

1 savings.

2           The solutions that the group came up with  
3 ranged pretty far, and we've just got a couple of  
4 highlights here.

5           Unsurprisingly, number one is the  
6 creation of some form of single statewide one-  
7 stop-shop program administrator that's been  
8 discussed, I think, by every panel and most  
9 speakers today. It's not a simple solution, but  
10 that was the one that came back to the top  
11 multiple times.

12           Another solution was considering the  
13 utility tariffs that involve shared benefits  
14 between utilities and customers.

15           And third were the development of metrics  
16 that really establish the value, whether it's in  
17 monetary or other terms, of non-monetary benefits  
18 such as quality of life, public health. And even  
19 a number of participants emphasized the  
20 importance of simple increased pride and sort of  
21 ownership in rental properties that are not  
22 always -- may not always feel that way to their  
23 tenants.

24           And in discussing these solutions, a  
25 potential program model that came to the fore

1 from one of our participants is a program  
2 implemented right now in Arkansas, which is  
3 called E-Utility (phonetic). It's an independent  
4 B Corp that operates a comprehensive energy  
5 efficiency retrofit program on behalf of a number  
6 of rural electric cooperatives and municipal  
7 agencies. And they've been able to, based on a  
8 relatively small program, they've been able to  
9 achieve a lot of the sort of one-stop-shop goals  
10 that different participants identified and that  
11 others today identified. And they really, they  
12 begin with the initial customer engagement all  
13 the way through implementation, and then down the  
14 road, verification.

15           And a couple of key items that their  
16 representative highlighted that have made their  
17 program successful is they go as far back as  
18 possible in their benchmarking so that data  
19 really relate as much to the property as possible  
20 and as little to the individual tenant or  
21 occupant as possible. And the State of Arkansas  
22 has created a state loss guarantee fund to  
23 support any retrofits that don't generate  
24 savings. So that was an example that we're  
25 looking into further to see how applicable it

1 could be to California and ways in which it might  
2 be adopted.

3           And another note on the third point here,  
4 the non-monetary benefits, this was an item that  
5 our participants across all state agencies and  
6 advocacy groups and housing developers all  
7 emphasized, which is the importance of accounting  
8 for these benefits which, as I said and as was  
9 discussed on the first panel today, really cover  
10 everything from public health to quality of life  
11 to, it would be very important also to consider,  
12 the most low-income customers who are perhaps  
13 under-using energy right now because they simply  
14 can't afford it and who, if given increased  
15 access to efficiency programs, might actually  
16 increase their use and identifying the customers  
17 for whom that is actually a good thing and where  
18 that should be considered a benefit.

19           So our next steps in our process are to  
20 organize follow-up discussions with owners and  
21 developers and reform proponents to really  
22 identify detailed elements of a one-stop-shop  
23 solution, to try to hammer out what that might  
24 look like in California. And as Commissioner  
25 Scott mentioned earlier, trying to identify

1 things that have worked really well, and also  
2 things that have really not worked well, in order  
3 to produce a pretty robust idea of what that  
4 program might look like. And then by the end of  
5 this year, a public research report which will  
6 include all of these findings, as well as  
7 supporting research.

8           There's my contact information, if you  
9 have any questions. If the Commissioners have  
10 any questions, I'd be happy to take them.  
11 Otherwise, thank you very much.

12           COMMISSIONER MCALLISTER: Great. Yeah,  
13 thanks. I thought the convening was excellent.  
14 I really, really want to give CLEE (phonetic) and  
15 Nathan (phonetic) and you're team kudos for doing  
16 that. And I'm really optimistic that's going to  
17 produce a solid report that we can use.

18           And maybe if you could sort of highlight  
19 the opportunities to provide input going forward?  
20 You sort of did that, but maybe you could be a  
21 little bit more --

22           MR. LAMM: Sure.

23           COMMISSIONER MCALLISTER: -- sort of  
24 concrete for people who want to participate, who  
25 maybe weren't at the convening.

1           MR. LAMM: Absolutely. Yeah. So we're  
2 in the process right now of scoping out a follow-  
3 up convening which will roughly follow the format  
4 that I described to you for our prior convening.  
5 And what we're really looking to do is to bring  
6 in a group of low-income multifamily owners and  
7 developers who have implemented efficiency  
8 projects in the past that, as I said, either have  
9 been successful or unsuccessful and can present  
10 case studies, essentially, that we can use to  
11 inform the broader solutions that have been  
12 proposed by our group. We already have a couple  
13 of developers who have agreed to work with us on  
14 this project. And we'd love to get a couple more  
15 in the room so we can have a robust list.

16           So I encourage anyone who is interested  
17 in joining to contact me and we can talk about  
18 bringing together that event.

19           Thank you.

20           COMMISSIONER MCALLISTER: Great. Thanks  
21 very much, Ted.

22           MS. RAITT: So next is the third panel of  
23 the day to discuss Encouraging Investment and  
24 Market Adoption.

25           So if you're on the panel, please come up

1 to the front table. We have seats for you.

2 MR. LEE: Good afternoon. This is Eugene  
3 Lee back again. This is Panel III regarding  
4 Encouraging Investment in Market Adoption.

5 Next slide.

6 So the purpose of Panel III is to discuss  
7 the potential strategies to increase the  
8 financing opportunities to improve the energy  
9 performance in multifamily buildings and  
10 including ways to better utilize the incentives  
11 and attract additional capital.

12 We're joined today by several panelists,  
13 and I'll allow them to introduce their  
14 organizations and their respective roles.

15 MS. CARRILLO : Good afternoon. My name  
16 is Deana Carrillo and I'm the Executive Director  
17 of the Alternative Energy and Advanced  
18 Transportation Financing Authority. We're a  
19 State Treasurer -- or we're a financing authority  
20 under the State Treasurer's Office, currently  
21 collaborating with the Public Utilities  
22 Commission on an Energy Efficiency Financing Hub,  
23 so that's part of my role here today is we  
24 monitor multiple programs.

25 MS. WANG: Hi. I'm Steph Wang with

1 California Housing Partnership. And we are  
2 experts on how -- on affordable housing finance  
3 and technical assistance, with also a specialty  
4 in sustainable housing, focusing on energy and  
5 water improvements, working with our nonprofit  
6 affordable housing partners and housing  
7 authorities to help them access energy efficiency  
8 and clean energy incentives and financing  
9 opportunities.

10 MR. CIRAULO: Good afternoon. I'm Rich  
11 Ciraulo with Mercy Housing. I'm the director  
12 of -- Regional Director of Portfolio Syndication.  
13 And Mercy Housing is a local subsidiary, a  
14 California subsidiary of Mercy Housing,  
15 Incorporated, which is a national affordable  
16 housing developer, actually one of the largest  
17 affordable housing developers in the country.  
18 Mercy Housing California is a developer, owner,  
19 property manager and service provider of the  
20 housing that we provide. We have 132 properties  
21 in California consisting of 8,800 units, serving  
22 about 18,100 residents. And our portfolio is  
23 sort of broken down, about 49 percent family, 31  
24 percent senior housing, and 14 percent supportive  
25 housing.



1           MR. HODGINS: Good afternoon. My name is  
2 Dave Hodgins. My company is Sustento Group. We  
3 get hired by local governments, nonprofits,  
4 utilities to design and deliver efficiency  
5 programs at scale. L.A. Better Buildings  
6 Challenge is one that takes up a lot of my time  
7 these days, a lot of work on policy  
8 implementation development, standards  
9 development, as well, supporting that work. And  
10 ultimately it's about, you know, market  
11 engagement. We try to do the hub single point of  
12 contact thing in L.A. and happy to share our  
13 experience on that. Everything that we've  
14 experienced has been consistent with a lot of the  
15 research and experience that's been shared today.

16           MR. JORGENSEN: Hi. I'm Lane Jorgensen  
17 with MGG Properties Group in San Diego. We're a  
18 multifamily investment and management company.  
19 We're fully integrated from property management,  
20 asset management and construction management.  
21 I've had the ability to lead energy and water  
22 efficiency retrofit projects at several of our  
23 properties in California. We've done about over  
24 \$4 million worth of projects, both on affordable  
25 and market rate housing in California. And we've

1 implemented a number of strategies to finance  
2 that, and we're pleased to be able to talk about  
3 that experience here today.

4 MR. LEE: Thank you very much.

5 One of the discussions that we've been  
6 having relates to low-income housing tax credit  
7 properties.

8 Next slide.

9 And there are approximately 4,800  
10 properties in the state of California assisted by  
11 low-income housing tax credits. And of those  
12 properties, and this is all available through the  
13 state Tax Credit Allocation Committee, there are  
14 approximately 3,500 that are placed in service  
15 that are essentially occupied. They're running  
16 right now. And this bar chart actually  
17 identifies the growth of those tax credit  
18 properties in California.

19 Next slide.

20 If we're to take a profile of the  
21 construction type of those properties, you will  
22 see that a majority of them are new construction  
23 at this time. A sizeable portion does relate to  
24 that acquisition rehab wedge which is almost 40  
25 percent. And that translates to about 1,700

1 properties. And if we were to take those  
2 acquisition rehab projects and then look at  
3 another slice of them, of those that were  
4 actually placed in service in 2006 through 2008,  
5 it's important to understand where they lie with  
6 respect to their climate zones, and if they're  
7 located in disadvantaged communities, and maybe  
8 by their housing type.

9 We had parsed out just south of 200  
10 projects. And the reason why we had chosen this  
11 '06 to '08 is recognizing that a triggering event  
12 is that rescindication. And if developers were  
13 to actually contemplate rescinding at year  
14 13, let's say, what would it actually look like?

15 Next slide.

16 So this is an identification of those  
17 projects by their climate zones. So you will see  
18 in these extreme climate zones, most of them are  
19 in the Central Valley, 47. We have some in the  
20 central-Central Valley, also, and the inland  
21 valley is 71.

22 Next slide.

23 If we were to look at this portfolio  
24 through the lens of the CalEnviroScreen from the  
25 California Air Resources Board and those that are

1 in the highest percentile of those disadvantaged  
2 communities, they layout as follows. You will  
3 see that many of those disadvantaged communities  
4 are in Southern California, San Diego and  
5 Imperial, and a swath in the Bay Area, as mapped.

6 Next slide.

7 This slide relates to the actual number  
8 of rent restricted units of them. And you'll  
9 notice that according to these bars, they're very  
10 large developments, 50 added to nearly 500 units.  
11 That's a large swath.

12 Next slide.

13 And this is their profile. Because we're  
14 speaking of not only buildings but behavior,  
15 correct, and who actually lives in them? So this  
16 slide indicates they're composed by large  
17 families. We've got seniors. And within the  
18 other, we have single-room occupancy households  
19 and populations that are considered at risk. I  
20 hope this information has been helpful.

21 Next slide.

22 Proceeding to Panel III. So what I'd  
23 like to start, before we begin our discussion, is  
24 again to frame this because I'd rather not have a  
25 discussion only about money in a vacuum. But I

1 think it's really important that we recognize  
2 about beginning with the end in mind.

3 I recall a conversation I had with a very  
4 successful housing developer. And I was just  
5 impressed by the number of affordable housing  
6 that he has created and managed. And he said --  
7 and I asked him, where do you begin? What's your  
8 formula, your success formula? And he answered  
9 very plainly, he always imagined, where would my  
10 mother live? It's a very simple test. And so if  
11 it passed the mother test to him, it was good  
12 enough, it was the right development.

13 And I think that really sets us up for  
14 our discussion today, how do we begin with the  
15 end in mind? How do we move investment and  
16 market adoption with a specific type of vision.  
17 And our first question relates to when should  
18 building owners consider energy efficiency  
19 retrofits and financing?

20 And I'd like to ask Dave your thoughts on  
21 this question.

22 MR. HODGINS: Yeah, absolutely. I think  
23 that this is really the key to the efficiency  
24 conversation, whether we're talking about  
25 multifamily affordable housing or, really, any

1 type of retrofit project and trying to find out  
2 kind of how far are we from the recapitalization,  
3 rescindication, refinancing event, and getting  
4 ahead of it. Our experience -- and getting far  
5 enough ahead of it that you can actually make a  
6 difference. I think there's a small window where  
7 you have the focus, you know, that this is coming  
8 up, but decisions haven't yet been made about,  
9 you know, specifying equipment. You know, how  
10 deep are going to go with this? So trying to get  
11 the conversation within that window, and then  
12 trying to come into it with as much information  
13 as possible.

14           For buildings that are in the middle of  
15 that 13- to 15-year cycle, having a conversation  
16 about deep retrofits, financing, someone spoke  
17 earlier about the complexity of the capital stock  
18 on these types of properties, is not likely to be  
19 productive in our experience. It's more those  
20 types of properties that are mid-cycle, maybe you  
21 could have a conversation about direct install  
22 type opportunities, you know, really low or no  
23 cost opportunities.

24           But if you're talking about, you know,  
25 deeper retrofits, you have to catch that window

1 where a deeper renovation is on the horizon and  
2 you can talk about incremental opportunities for  
3 efficiencies, and then bring in programs like  
4 weatherization program or EUC or other. But the  
5 timing is really key there, and it's a small  
6 window, I think.

7           COMMISSIONER MCALLISTER: Mr. Hodgins,  
8 can I ask a question here?

9           So I think the analysis that Eugene and  
10 his team has done is great. And then just, you  
11 know, focusing on the 2006, you know, okay, well,  
12 they're 13 -- 12 years out. They'll soon be  
13 thinking about the rescindication process. Now  
14 is the kind of time to get in there. So there  
15 are 200 properties that are in that window. And  
16 maybe for 2006 it's, you know, 50 or 60  
17 properties. Not all of those properties, am I  
18 correct, are going to be sort of in that bad a  
19 shape where they really feel like, okay, I'm  
20 going to invest in a deep-deep retrofit, or I'm  
21 going to get all the tenants out of there and,  
22 you know, really do something important.

23           What's the process by which you would  
24 suggest, you know, how to sort of figure out  
25 which properties are the ones that ought to be

1 approached and that we ought to really worry  
2 about and end up with some subset of those ones  
3 that are up for rescindication as good candidates  
4 to do something important?

5 MR. HODGINS: Yeah. Absolutely.  
6 Something that we did in Los Angeles with some  
7 funding from Energy Efficiency for All and the  
8 support there was to try to get at that question  
9 and kind of combine datasets. So we were able to  
10 get some information from our Department of  
11 Housing and Community Development, they have a \$6  
12 billion loan portfolio in the city, looking at  
13 the -- get the name right -- the National Housing  
14 Preservation Database, try to get some  
15 information from there, as well as from TCAC, and  
16 try to get a sense for what those buildings are,  
17 and then what other datasets can we access and  
18 overlay with that?

19 So UCLA created something called the  
20 Energy Atlas, working with DWP. I think Nancy  
21 touched on that earlier. So we were able to work  
22 it out with them to get access to get access to  
23 the actual utility data, and then combine that  
24 with assessor data to get at year built, where  
25 possible, look at renovation history, and really



1 spend the time on the planning phase to figure  
2 out which buildings are they and who owns them?  
3 Who are we trying to talk to, when about what?  
4 But it was an over a year process putting that  
5 study together, combining those datasets and  
6 synthesizing that into a hit list.

7           But what that showed us what that,  
8 consistent with what Eugene was showing at the  
9 state level, was that there were concentrations  
10 of large buildings with high energy use  
11 intensities and where they are. And in L.A.,  
12 those in South L.A. and Watts, and in the Valley.  
13 And so now is the process of bringing together  
14 the relevant programs, trying to package those in  
15 a way so that when we do sit down, we have a  
16 sense for what the timing is and what's likely  
17 the nature of the opportunity before we walk in.

18           COMMISSIONER MCALLISTER: Great

19           MR. HODGINS: Yeah.

20           MR. LEE: Are there others who would like  
21 to chime on discussion?

22           Stephanie?

23           MS. CHEN: Yes. And I found this really  
24 helpful, Eugene, trying to like get into the  
25 data.

1           My team, also, at the California Housing  
2 Partnership tried to do a little analysis ahead  
3 of this, as well. And we tried to look more  
4 recently, you know, how many TCAC rehabs actually  
5 happened statewide in the last few years, found a  
6 low number of 22 in 2017, slightly higher, 57 in  
7 2016, 39 and 2015, and 37 in 2014. And we were  
8 looking at this not only for this workshop, but  
9 also thinking about, as we're ramping up, getting  
10 ready for the Solar and Multifamily Affordable  
11 Housing Program, how much would we be  
12 specifically focused and targeting these sorts of  
13 projects, versus how much are we going to have to  
14 look broader; right?

15           And those numbers were low enough that it  
16 was a reminder that while it is a really  
17 important time to be thinking in terms of, you  
18 know, their major recapitalization timeline, our  
19 team, you know, has good experience working in  
20 the Low-Income Weatherization Program outreach,  
21 also just trying to time things with other mid-  
22 cycle improvements. You know, are they going to  
23 be doing a major roof replacement? Did they  
24 think it was a good time to go solar? Did they  
25 really need to save some money on water bills?

1           And so we definitely think that that  
2 supports a lot of what the discussion's been --  
3 we've been having today, which has been about how  
4 do we make sure that we're combining our  
5 outreach; right? Because when they're looking at  
6 making another improvement is when they -- is the  
7 best time to reach them to make an energy  
8 efficiency improvement.

9           MR. LEE: Others?

10           COMMISSIONER MCALLISTER: Do you have --  
11 do you know when that's going to happen? I guess  
12 the advantage of the TCAC Database is that it's  
13 like, okay, hey there, you're 12, you know, we  
14 should engage with them.

15           And so I guess, what would be a similar  
16 analogous kind of trigger for outreach in the  
17 case where they're doing, you know, a new roof or  
18 something? I mean, you know, they're -- when  
19 they go out to get bids, you know, there's  
20 something. You know, when they want to get a  
21 permit from the city, like is it -- you know, I  
22 guess I'm wondering sort of what would be the in  
23 for a program to sort of engage with that  
24 property?

25           MS. CHEN: So instead of trying to reach

1 them at the trigger, as Dave was saying, we reach  
2 them ahead. We talk about their whole portfolio  
3 once. Every time, we develop a relationship with  
4 the affordable housers themselves and work  
5 through their longer-term timeline. The way they  
6 think about their entire portfolios anyway,  
7 they're not planning -- I shouldn't be speaking  
8 for Rich or anyone, but our experience is our  
9 partners are not just planning one project at a  
10 time, they're planning their whole portfolios.

11           And so it's really hard to catch people  
12 exactly at a trigger moment, so instead we have  
13 to do our outreach and keep our databases, our  
14 outreach and engagement databases, up to date on  
15 their longer-term plans and when to touch back  
16 with them.

17           COMMISSIONER HOCHSCHILD: Rich, do you  
18 have something to add about that, when you  
19 actually assess your portfolio?

20           MR. CIRAULO: It's definitely an ongoing  
21 process. And we've actually working with the HPC  
22 (phonetic) to sort of help kind of analyze some  
23 of the specifics. And, actually, when I get to  
24 my part, I'll talk a little bit about a program  
25 that we're actually implementing right now across

1 our portfolio that I think speaks to this, so  
2 I'll just kind of leave you in suspense for that.

3 MR. LEE: Well, you're up.

4 So the second question is: What are the  
5 cost consideration and amounts needed for  
6 meaningful energy improvements, and why,  
7 recognizing we had our discussion and we  
8 acknowledged that there isn't just one profile in  
9 this very large multifamily universe? So there  
10 isn't a magic number?

11 But, Rich, if you could get started on  
12 that?

13 MR. CIRAULO: Yeah. And I think sort of  
14 my response doesn't really have specific sort of  
15 numbers, but maybe that will kind of come out of  
16 the general conversation. But there were a  
17 couple of things that I thought would be helpful  
18 just to put out there. And sort of hearing some  
19 of the other conversations, I think you probably  
20 heard some of this before, but I wanted you to  
21 hear it from Mercy Housing, affordable housing  
22 developer.

23 So first off, I just want to say that we  
24 want to building sustainable housing. And  
25 implementing energy efficiency strategies is very

1 consistent with providing truly affordable  
2 housing and lowering the cost by reducing utility  
3 costs, and basically the overall housing costs.

4           And so, you know, often we are  
5 constrained by the funding availability and the  
6 escalating costs of construction. So projects  
7 are designed to cover operating costs and pay  
8 supported debt, but rents are highly regulated  
9 and constrained. Most projects do not generate  
10 excess cash flow, and so project reserves are  
11 used to pay for sizeable capital improvements,  
12 things like roofs, siding, windows, HVAC systems.  
13 And so there are really two instances where we're  
14 really kind of looking at the details of the cost  
15 considerations, and it's when a project is  
16 potentially undergoing significant rehab and  
17 we're seeking new funding.

18           And so as part of seeking that new  
19 funding, we're looking to meet the -- and usually  
20 when we're talking about that, we're talking  
21 about tax credits, and we're seeking to meet  
22 those program requirements. And the other one is  
23 when we're looking at portfolio upgrades and  
24 ongoing replacements.

25           And so when we're looking at projects

1 that are undergoing significant rehab and  
2 financial restructuring, there's usually a menu  
3 of options that we're looking through. And so  
4 that many options is what we're taking to our  
5 team and working through and sort of define, you  
6 know, our low-hanging fruit, those things that  
7 are, as we go through the Greenpoint (phonetic)  
8 checklist or the LEED checklist, those items that  
9 are easier to achieve without adding significant  
10 cost to the project. And so that's sort of the  
11 first focus and the first discussion that's being  
12 had.

13           And then we're looking to make smart  
14 choices that -- so then how does that come out as  
15 smart choices, like making LED lighting upgrades  
16 or looking at low-flow fixtures, again, not high  
17 cost but high impact items?

18           And then the conversations get a little  
19 more different when we're looking at those items  
20 that will cost the project but, you know, looking  
21 to have those fit within the overall budget, and  
22 will still provide long-term benefits. And in  
23 those instances, we're looking at like window  
24 efficiency, roof efficiency, adding additional  
25 insulation. And so that's kind of a point in

1 time that I think we've discussed a little bit  
2 where these items get brought up and sort of, you  
3 know, weighed into the overall project budget.

4           When we're looking at existing portfolio  
5 upgrades, we try to make the best replacement  
6 decisions based on the funds available, which is  
7 not always the easiest call. For older  
8 properties, it's often difficult to choose the  
9 more expensive energy efficient option. But some  
10 of the newer TCAC projects have requirements to  
11 make those replacements in line with the original  
12 efficiency goals, so that's kind of built into  
13 some of the reserve analysis and what we're  
14 thinking about, sort of for the future of those  
15 projects.

16           For the older properties in our  
17 portfolio, Mercy has been working on a program  
18 that does not have a significant capital outlay  
19 or increase operating costs. It's relatively new  
20 to us, but it's work that we're doing with the  
21 Affordable Community Energy Services Company, or  
22 ACE, and Bright Power. And so what that program  
23 is doing is allowing us to do energy efficiency  
24 upgrades that are being paid from savings. And  
25 so essentially, you know, we're achieving lower



1 energy usage, increased tenant comfort, and  
2 providing capital improvements with minimal  
3 impact to project reserves and operating  
4 expenses.

5           And essentially, one of the drawbacks,  
6 unfortunately, is if the project doesn't  
7 translate to reduction in energy costs and  
8 operating costs for the property, since it's a  
9 pay-from-savings, but, as I mentioned, we are  
10 able to reduce the property's carbon footprint,  
11 improving tenant comfort, and providing for some  
12 no-cost property upgrade.

13           So that's just a quick overview of some  
14 of the energy measures and costs that Mercy  
15 considers.

16           MR. LEE: Thank you, Rich.

17           Other who would like to contribute to  
18 this question?

19           COMMISSIONER MCALLISTER: Can I just  
20 chime in, or ask a question, actually, just  
21 digging in a little bit, Rich, on your answer  
22 there?

23           So you know, as you said, a lot of this  
24 is complicated and, you know, there's a lot of  
25 regulations, you know, and sort of the costs can

1 go up, and it's not clear how you sort of make  
2 that -- turn that into benefits while still  
3 complying with regulations and all that, and so,  
4 you know, not just energy regulations, but a  
5 broad swath of things you guys have to do, so I'm  
6 very sympathetic with that.

7           And so I guess my question would be,  
8 what -- what sort of collaboration or  
9 cooperation, whether it's some kind of, you know,  
10 easing of the regulatory burden or, you know,  
11 cash money or, you know, financing support, what  
12 are the sort of things that would get your  
13 attention as a developer in terms of  
14 collaboration from the state or from a state  
15 program or some kind of policy initiative to take  
16 on sort of a bigger lift, whether it's that  
17 rescindication or, you know, in mid-cycle or, you  
18 know, sort of a year-to-year upgrades of your  
19 properties? And sort of do that with, you know,  
20 feeling like it was really worth it, like you  
21 were really moving in the right direction and,  
22 you know, locking arms in a productive way.

23           I guess, you know, I don't want to be --  
24 I don't want to come to this with any illusions  
25 about how effective the state can be on this.

1 But if we're going to do an initiative or we're  
2 going to think about initiatives, we want to  
3 really make them work. We want to make them  
4 knock the ball out of the park. And so, you  
5 know, what does that look like to you?

6 MR. CIRAULO: So cash is always great,  
7 you know? But --

8 COMMISSIONER MCALLISTER: I have no  
9 doubt.

10 MR. CIRAULO: -- from a more pragmatic  
11 perspective, I think that one of the things that  
12 we're noticed is that there are many different  
13 efforts sometimes happening that we're sometimes  
14 pulling in to try to be the hub of, so in terms  
15 of identifying those potential incentive programs  
16 that are out there that really fit, you know,  
17 with the projects that we're working on,  
18 understanding the different requirements of the  
19 different programs and trying to sort of  
20 aggregate them into one place so that we can  
21 either feed it over to our architects to  
22 incorporate into the design, or to have those  
23 conversations, you know, with our contractors  
24 around what those things would cost.

25 And so one of the things that we're

1 talked about is almost like a one-stop-shop  
2 consultant, is how we've thought of it in some  
3 instances where, you know, we work with HERS  
4 raters, we work with energy consultants. But  
5 none of those folks that we've run into so far  
6 really have that broad perspective and really  
7 could sort of help us get that, you know, put all  
8 those different pieces together to be able to  
9 move forward and know that we're taking advantage  
10 of those programs that are already in existence  
11 and applying them to the projects that we're  
12 trying to move forward.

13           COMMISSIONER MCALLISTER: Is there kind  
14 of -- so I guess I'm imagining, you know,  
15 scenarios where you're sort of, okay, here's the  
16 minimum bar we have to get over to -- you know,  
17 we have to do some energy efficiency to get  
18 access to the tax credit allocation financing,  
19 but, you know, beyond that it's kind of a tough  
20 sell maybe. And, you know, what is the -- what  
21 would soften that blow or what would sort of  
22 motivate you guys to say, okay, you know,  
23 actually, this time around we're really going to  
24 do a deep retrofit, or we're going to go the  
25 distance and do more; right? Because, I mean,

1 long term, we've really got to -- every  
2 opportunity we've got to take advantage of. 2050  
3 is not that far away. You know, it's two  
4 rescindications or it's, you know, maybe one refi  
5 of a private sector building.

6           So I guess, you know, think. You don't  
7 have to answer now or, you know, in depth, but  
8 just I think those kind of bold initiatives, you  
9 know, are really what we need to consider, you  
10 know, all the incremental stuff, you know, along  
11 the way but also really deepening it when we have  
12 a chance.

13           MR. CIRAULO: The one thing I would say  
14 to that is that what we find ourselves often  
15 doing is, you know, figuring out how to get the  
16 minimums that, you know, we need to, and the  
17 funding, but with basically a direction to the  
18 team to look at like our contingency as we go  
19 through construction and try and identify those  
20 items that we can reincorporate into the project.

21           So I guess my real point is that you've  
22 got a very willing and sort of interested party  
23 in trying to get to those goals, and that we try  
24 to do it as best we can with the funding that we  
25 have available.

1           And so, an example of the rehab, you  
2 know, we go into it very conservatively because  
3 we don't know what we're going to find when we  
4 start pulling the walls off --

5           COMMISSIONER MCALLISTER: Right.

6           MR. CIRAULO: -- and things like that.  
7 But if we're lucky and things are not so bad,  
8 then we can then refocus and look at additional  
9 energy efficiency upgrades that we try to  
10 incorporate into the project if, you know, there  
11 were additional funding sources that allowed us  
12 to make those. And sometimes making those  
13 decisions in the middle of a rehab is not the  
14 best time to do it --

15          COMMISSIONER MCALLISTER: Yeah.

16          MR. CIRAULO: -- because you're incurring  
17 additional costs sometimes in rework or in kind  
18 of having to rethink certain strategies. And so  
19 if we knew that up front, then we could plan  
20 better and, you know, incorporate those  
21 efficiencies more definitively.

22          COMMISSIONER MCALLISTER: Okay. Thanks.

23          MR. JORGENSEN: I would add a little bit  
24 do that.

25          In our experience, we did some mid-

1 ownership cycle energy and water retrofits on  
2 multiple properties in the So Cal REN (phonetic)  
3 territory. And that opportunity was originated  
4 by a third-party group that was incentivized to  
5 try and go get construction work.

6           And so they had developed an expertise in  
7 aggregating the program -- different programs and  
8 the different incentives that were available to  
9 different programs through So Cal REN, primarily.  
10 And they said, okay, So Cal REN has a temporary  
11 allocation to go do energy audits, so we're going  
12 to go -- here's a list of your buildings, we're  
13 doing to go do no-cost energy audits on all those  
14 buildings and we're going to come back to you  
15 with the findings. And if we feel like there are  
16 good opportunities that provide a return on  
17 investment, we're going to recommend that you go  
18 forward with it.

19           And so it was in alignment in the sense  
20 that there was no out-of-pocket cost from us to  
21 evaluate what the options might be. I came from  
22 kind of a developer type of group that had  
23 integrated the energy analysis and tracking and  
24 incentive tracking to put a package together that  
25 they could then go out and execute on and, you

1 know, make money being a contractor to install  
2 those projects. And so, you know, we ended up  
3 going forward.

4           You know, one little hitch there that we  
5 were able to overcome uniquely is that, you know,  
6 there was substantial up-front costs to the  
7 retrofits prior to any rebate monies being  
8 received. We were able to basically use our  
9 company balance sheet to front that, but not  
10 affordable housing owners would have that  
11 vehicle.

12           But just as an example, you know, sort of  
13 free energy audits for everyone and, you know,  
14 maybe some temporary financing vehicle until  
15 rebates come in, based on our experience, would  
16 accelerate and illuminate what opportunities  
17 might be out there, both market rate and  
18 affordable housing.

19           MR. LEE: Okay, our third question  
20 relates to financing strategies and the  
21 combination of funding sources, and which ones  
22 are most successful, and why?

23           Lane?

24           MR. JORGENSEN: So just kind to add some  
25 context for people that maybe aren't completely



1 familiar with how we look at a multifamily  
2 property from an investment point of view is that  
3 there's the physical structure, the units, the  
4 improvements, and then there's the legal and  
5 financing structure that David, you know, called  
6 the capital stack, and that's what we call it,  
7 the capital stack. And so you have investor  
8 equity and you have mortgage financing as part of  
9 that capital stack. And those create obstacles,  
10 but that's also where I have found most of the  
11 opportunity to do retrofits is when there's a  
12 change in that capital stack.

13           And like we've talked about with LITAC  
14 (phonetic) deals, they're on kind of a 15-year  
15 cycle. And so if they're 100 percent restricted  
16 on their rents, too, you don't have a lot of  
17 value appreciation. So it's very difficult in  
18 100 percent of affordable properties to ever have  
19 an opportunity to adjust that capital stack.

20           Where we have found some initial success  
21 are on some of the older mixed-income properties,  
22 often times from the 1980s when there were bonds  
23 and credits issued that then resulted in a deed  
24 restriction on the property specifying, you know,  
25 20 percent of the units be made available to

1 affordable housing residents of a certain income  
2 threshold, or 40 percent.

3           And because of that existence of that  
4 deed restriction the property qualified for more  
5 aggressive incentives to do energy-efficient  
6 retrofits or water-efficient retrofits on the  
7 property. And the existence of the, you know, 60  
8 to 80 percent of the property being market rate  
9 allowed the property to appreciate in value. And  
10 so as a private capital investor, we were able  
11 to, you know, create transaction -- investment  
12 transaction events, whether it's a purchase or a  
13 sale or a refinance, to go after those projects.

14           And so, you know, one of our first  
15 projects was a solar-thermal project on a 300-  
16 plus-unit property where we refinanced with HUD.  
17 And that refinance event on an appreciated  
18 property allowed us to pay for all new roofs that  
19 was a prerequisite to being able to do the solar-  
20 thermal project. And, you know, again, we had  
21 the refinance proceeds to front the \$400,000 of  
22 cost of the solar-thermal project until the  
23 rebates came in. And so that was a very  
24 successful project.

25           Likewise, we did a solar PV system on a

1 400-plus-unit property that had an old regulatory  
2 agreement on it through the prior MESH (phonetic)  
3 program, and that was a PPA, a very difficult  
4 project. Implementation was very challenged with  
5 both the lender and, you know, the utility. And  
6 in that case, we ended up basically taking a  
7 separately metered property and turning it into a  
8 master metered property so that we could monetize  
9 the benefits of the solar production and pay for  
10 the PPA payments that are required.

11           COMMISSIONER MCALLISTER: Okay.  
12 Interesting. So let me, not being a finance guy,  
13 let me see if I can just state this in simplistic  
14 fashion.

15           So there actually is some benefit or some  
16 potential upside of having a mixed building where  
17 some is low-income and some is not low-income  
18 because you have the appreciation upside that you  
19 can then leverage when you refinance it?

20           MR. JORGENSEN: Yeah, absolutely. You  
21 know, I think that's a great model for a lot of  
22 reasons because it provides inclusive housing and  
23 brings people of different incomes together. And  
24 so I feel like, you know, some of the properties  
25 I'm most emotionally proud of are those that are

1 mixed income because, you know, rental housing is  
2 just a very natural place for people to, you  
3 know, be at different points in their life when  
4 they're trying to, you know, climb out of  
5 different economic situations, or if they need a  
6 respite. And so those mixed-income properties  
7 are really very powerful and they're financeable.  
8 And the transaction events occur more frequently  
9 on them. We're losing them because the  
10 regulatory agreements are expiring --

11 COMMISSIONER MCALLISTER: Yeah.

12 MR. JORGENSEN: -- and there's no  
13 mechanism to continue that or replace that  
14 financing that also replaces the deed  
15 restriction. So as a state, we've lost a lot and  
16 we continue to lose them. You know, we've lost a  
17 couple that way, too.

18 But from a private equity standpoint,  
19 we're indifferent. I mean, it's very difficult  
20 for us to invest in 100 percent affordable  
21 because those properties don't appreciate. But  
22 if it's a mixed income, it can be a very viable  
23 opportunity. And because of the deed  
24 restrictions the rebates have been more  
25 aggressive, which further helps support the

1 projects.

2 COMMISSIONER MCALLISTER: That's really  
3 interesting. Thank you.

4 MS. ADEYEYE: I had a question about the  
5 last piece that you mentioned, when you said you  
6 took the project that was separately metered and  
7 made it master metered. Do you have a sense of  
8 how that affected the tenants or what happened in  
9 terms of their build or in terms of their  
10 experience of that project moving forward?

11 MR. JORGENSEN: The tenant bills went  
12 down. Because of the nature of the PPA, they  
13 didn't go down as much as if the solar system had  
14 been fully paid for, separate from a power  
15 purchase agreement kind of financing mechanism.  
16 But basically what happens is because the meters  
17 exist, we can separately meter those tenants'  
18 usage directly on how much they actually use and  
19 then shift the net metering credits from the  
20 solar production to them according to their  
21 usage. And so they pay a lower rate on the solar  
22 production than they would to the investor-owned  
23 utility.

24 MS. ADEYEYE: So in the end, they still  
25 got the kind of net energy metering benefits?

1 MR. JORGENSEN: Yeah.

2 MS. ADEYEYE: Okay.

3 MR. JORGENSEN: And on the financing  
4 front, one thing I wanted to point out, too, in  
5 our multifamily space, Fannie Mae and Freddie Mac  
6 are huge lenders. And they have Green Financing  
7 Programs. And I think one of the more exciting  
8 things that has happened in the last few years in  
9 multifamily space is that there's been tremendous  
10 uptake and adoption of the green financing. And  
11 it's basically standard business operating  
12 procedures for us at this point in time. Some  
13 stats are that in 2012, Fannie Mae started their  
14 Green Financing Program.

15 It was not designed particularly well, so it  
16 was very slow out the gate, but in 2014, they did  
17 \$130 million. In 2017, they did \$27.6 billion of  
18 green financing around the country. Freddie Mac  
19 went from \$3.3 billion in 2016 to \$18.7 billion  
20 last year. And for Fannie Mae, it accounted for  
21 almost a third of their total multifamily loan  
22 production, and for Freddie Mac, about a quarter.  
23 These stats are just off their website. And so  
24 almost, you know, over \$46 billion in financing.  
25 And what that financing does is, for owners like

1 us, it says, okay, if you go in and you retrofit  
2 this property that you're acquiring or financing,  
3 reduce either water or energy use by 25 percent,  
4 we'll reduce your interest rate.

5           And so what's really brilliant about this  
6 solution is that it overcomes the split incentive  
7 problem because the owner, who is taking on the  
8 obligations of the financing, realizes the  
9 benefit of the lower costs of debt, but the  
10 engineering-based improvements required at the  
11 property are whole building, and so they accrue  
12 to the tenants where there is low-flow  
13 showerheads or LED bulb replacements. And so  
14 it's a very -- it's just, you know, a huge uptake  
15 by the industry to do this.

16           COMMISSIONER MCALLISTER: So I wanted to  
17 sort of build on something that Rich said, and  
18 then what you just said, and really pose the  
19 question: Is there opportunity for a state-level  
20 initiative to kind of piggyback on some of this?

21           Like as long as you're in a building and  
22 you're getting a bucket list, you know, you're  
23 getting sort of a punch list, here's all the  
24 things we could do on this building, and we're  
25 going to draw the line here because -- you know,

1 do all the stuff above that because we have  
2 capital constraints or because whatever, you  
3 know, hassle factor, you know, no low cost or  
4 whatever, you know, and so, you know, if it's 25  
5 percent savings.

6           So what -- you know, is there an  
7 opportunity to sort of go and get that next 10  
8 percent and the next 25 percent of something to,  
9 you know, go further, you know, based on some  
10 initiative that we could define as a state while  
11 you're at it, basically, you know, and put some  
12 more resources on it?

13           MR. JORGENSEN: I think there's the  
14 opportunity for that. You know, it's debt to us,  
15 but for Fannie and Freddie, it's equity. There  
16 are, you know, there are secure ties to  
17 mortgagers' obligations, and so they go out and  
18 sell them, and so there's certain complications  
19 to it.

20           But, you know, for a state the size of  
21 California with the amount of business that's  
22 available here for them, I would think that  
23 there's some capacity for the state to interact  
24 with them in a way to further the level of rehab.  
25 Because, you know, we're doing the easier, lower



1 cost things because those are the things that  
2 make sense. But to go for the deep rehab, you  
3 know, the models from days gone by that would  
4 seem to work would be more of the, you know, kind  
5 of bond financing deals where you bring in, you  
6 know, bond financing, with our without tax credit  
7 allocation --

8 COMMISSIONER MCALLISTER: Right.

9 MR. JORGENSEN: And, you know, add  
10 private equity or some other source of equity to  
11 a project to do a deep retrofit and that just  
12 becomes part of the bond obligation. But  
13 somehow --

14 COMMISSIONER MCALLISTER: Oh, I see.

15 MR. JORGENSEN: -- the financing on the  
16 bond has to be lower than a market rate to be  
17 appealing.

18 COMMISSIONER MCALLISTER: Yeah. Yes.  
19 I'm just -- I'm barely -- I'm just barely  
20 following you at this point. But I think if we  
21 could turn it into -- if we could something  
22 equity-based, you know, and sort of make it as  
23 similar as possible, then maybe everybody's  
24 better off anyway. I want to throw that out  
25 there. If anybody has any beautiful ideas and

1 has a business model for this, that would be  
2 great.

3           Anyway, I'll let Eugene take back --

4           MR. CIRAULO: If I just can add one quick  
5 to that, which is that when thinking about some  
6 of these programs, to maybe work with some of the  
7 existing agencies, because there are so many  
8 layers --

9           COMMISSIONER MCALLISTER: Yeah.

10          MR. CIRAULO: -- of financing and sort of  
11 different, you know, battling regulations and,  
12 you know, issues that we end up having to sort of  
13 untangle. It would be good to them sort of in  
14 concert with some of the programs that are in  
15 place.

16          COMMISSIONER MCALLISTER: Yeah.

17          MS. CARRILLO: And piggybacking off that  
18 a little bit, I think the other thing that we're  
19 hearing from folks on the financing side as we  
20 develop affordable multifamily pilots is that  
21 really something, an off-balance sheet, will  
22 really be effective with the TCAC projects and  
23 other really debt -- complicated debt stacks, so  
24 looking at those energy service agreements or the  
25 power purchase agreements, or even equipment

1 leases. I think there's some innovative things  
2 coming out on -- instead of energy performance  
3 guarantees, but actually looking at subscriptions  
4 of some other way to off -- it's the new term to  
5 offset that cost of services for energy.

6 COMMISSIONER MCALLISTER: So turn it  
7 into, basically, an operational cost, more or  
8 less?

9 MS. CARRILLO: In essence, not  
10 necessarily guaranteeing the performance, but  
11 having enough of some wiggle room on the  
12 performance to be able to have a regular revenue  
13 stream.

14 COMMISSIONER MCALLISTER: Yeah.

15 MS. WANG: I think another interesting  
16 thing that I was exposed to the other day was  
17 kind of crowd funding for solar, which isn't new,  
18 but this was for tenants and multifamily tenants  
19 where they created what they call kind of a  
20 syndicated on-bill repayment program for solar to  
21 offset some of the technical costs. So I think  
22 there's a lot of innovative strategies for both  
23 the developers themselves, and some new ones  
24 opening up for tenants directly.

25 COMMISSIONER MCALLISTER: Interesting.

1 MS. WANG: Adding to that, it's hard to  
2 figure out when do these questions end and the  
3 next ones start? But basically, I think I've  
4 also been hearing a lot around the need for  
5 flexibility, because you're talking about --  
6 nobody here has said, oh, I would like to finance  
7 that specific authorized energy efficiency  
8 measure; right? I mean, I think we're talking  
9 about, well, you're in -- you're doing the work.  
10 Maybe you can do something else where you can  
11 deepen your efficiency or water savings? And  
12 it's not -- it doesn't neatly fit into the  
13 program check boxes.

14 And I think that echoes a lot of what was  
15 said earlier today, which is it's really hard to  
16 build off the old -- a lot of the legacy  
17 programs. It's not, you know -- well, you know,  
18 I guess we can name names, but basically we're --  
19 basically, what we're trying to get at is anytime  
20 you say, well, you can include this type of  
21 measure but not that, that gets in the way.  
22 Every -- whereas, if you say whereas some of the  
23 other programs out of Cap and Trade, for  
24 instance, did not have to start with that because  
25 the agencies did not start with, you know, 30

1 years of building up lists of approved measures.  
2 Instead, they could just say any sort of energy  
3 or water savings, we're going to go by the  
4 metrics of what's saved instead of specific  
5 measures. And then you really open up the  
6 opportunity while you're in there.

7 MS. CARRILLO: I think the other point  
8 that you've made before, Stephanie, is not only  
9 just the specific measures but the arbitrary  
10 lines of eligibility. So, you know, you might  
11 have an affordable housing project, you know, on  
12 the other side of the street, but it doesn't  
13 cross over that one line to be able to provide  
14 that incentive, in other words.

15 MS. WANG: And I understand. We're a  
16 state that has to prioritize our dollars.

17 COMMISSIONER MCALLISTER: Yeah.

18 MS. CARRILLO: But I think some of these  
19 arbitrary silos that we create, you know, they're  
20 self-created, let's go change the world, and  
21 here's an obstacle course that your mother  
22 created for you, to go do it. You know, it's  
23 just one of those things that, to the extent that  
24 we can bust down those walls, it would definitely  
25 make projects easier.

1           MR. HODGINS: Yeah. To pick up on that,  
2 and I think one of the previous speakers  
3 mentioned it, too, was just the pebble in the  
4 shoe, to borrow Eugene's comment, the income  
5 verification piece. When tenants have already  
6 been income verified in order to live in certain  
7 types of properties, to have to then go do that  
8 again in order to actually qualify for certain  
9 programs, like direct install programs, I think  
10 in practical application becomes a really big  
11 barrier.

12           And so I'm sure there's a reason that  
13 rule is there, but if that's something that can  
14 be revisited and opened up, you know, would it be  
15 possible to just rely on the income verification  
16 that's done up front in order for a tenant to be  
17 in a building and just determine that, okay, this  
18 building is eligible for these programs.

19           And you can take some of those -- and  
20 those are more, you know, legacy programs that  
21 are more measure based and prescriptive, but take  
22 those projects out of the scope for the more  
23 flexible programs, like the Cap and Trade, you  
24 know, Low-Income Weatherization Program, or where  
25 you've got, you know, proceeds from a refinancing

1 or rescindication, take those measures off the  
2 table that can be done for free through a  
3 prescriptive measure-based program and make that  
4 process really simple, so that income  
5 verification piece just simplifies. Take those  
6 projects that you know make sense off and then  
7 let the flexible money be flexible.

8 MR. LEE: Thank you.

9 We have our final question, and that is:  
10 How can we improve and expand increased  
11 investment? So we've spoken about flexibility,  
12 looking for those opportunities, even if they're  
13 just incremental changes in programs.

14 But, Stephanie, do you have other ideas?

15 MS. WANG: Yes. And I'm only going to  
16 share two because it's getting late in the  
17 afternoon.

18 So one of them, many have noted, and  
19 thank you for whoever added it into the CLIMB  
20 Action Plan, the need for long-term stable  
21 funding for existing programs. You never -- you  
22 can't really have property owners and industry  
23 relying on programs when the funding is really  
24 unpredictable, but I think that's been covered a  
25 lot, so I'm going to keep moving.

1           The other one, we've started to get into  
2 some of the energy performance risk issues. And  
3 I think there are actually a lot of ways that,  
4 you know, that those of us who are in these rooms  
5 and get to give input on program design can help  
6 to address this. I mean, there are the  
7 tougher -- there are the tough questions to  
8 address around, you know, how do we improve  
9 projections of energy performance? And how do we  
10 encourage operations and maintenance, better  
11 operations and maintenance business models? And,  
12 you know, how do we change tenant behavior? And  
13 people often times go straight to the really  
14 harder pieces.

15           But there are models for, you know,  
16 requiring -- if you have an incentive program,  
17 think of it as -- I love that in the CLIMB Action  
18 Plan, it says -- it puts us in the Consumer  
19 Protection Category. I love that. This is not  
20 just some abstract problem, this is a consumer  
21 protection problem. And in which case, you can -  
22 - you know, we can say when this  
23 program -- when a program provides state  
24 incentive dollars, that, you know, that it can  
25 include consumer protection, whether it's, you



1 know, contractor guarantees that the product will  
2 perform as expected, or whether it's incentives  
3 covering some operations and maintenance  
4 services, or other.

5           There are a lot of opportunities that I  
6 think many of us are exploring. And I'm excited  
7 that we are getting, I feel like in California,  
8 we're getting a lot more, getting beyond just  
9 saying the energy performance risk is a problem  
10 quietly, and saying, hey, you know, there are  
11 ways that our programs can be designed to tackle  
12 that head on.

13           MR. LEE: Others?

14           MR. HODGINS: Well, to add to that, I  
15 mean, there are also -- I have a lot of  
16 experience with performance contracting. There's  
17 also insurance products on the market now that  
18 are pretty competitively priced, based off of  
19 either the project value or the amount of savings  
20 that are, you know, projected to occur.

21           And I'd be curious to hear, you know, the  
22 other panelists or others in the room, what their  
23 experience has been. But mine has been once we  
24 explain that and sort of how the equation works,  
25 which is basically just a regression analysis,

1 and most business people are familiar with what  
2 that is, they use that type of approach to  
3 project all kinds of things, different investment  
4 options, they're like, oh, I get it. Forget it,  
5 let's just do the project. You know, by the time  
6 we actually go about quantifying the risk and  
7 they say, okay, well, that's going to be another  
8 two percent of project value, I don't need it,  
9 so -- but it does exist.

10           And to the extent that -- I'm curious if  
11 other people have seen value in that or had a  
12 similar experience?

13           COMMISSIONER MCALLISTER: Well, I mean,  
14 I'm intrigued by that just because, I mean, we  
15 have been funding and working on and trying to  
16 sort of give some impulse to some of these  
17 analytical approaches in our world, you know, in  
18 the energy efficiency program world; right?  
19 Maybe we should be partnering more aggressively  
20 with kind of the actuarial community to sort of,  
21 you know, have them sort of bring their expertise  
22 to this because I think it's kind of a new and  
23 different thing for the energy efficiency, you  
24 know, business, but not for many other people.  
25 So maybe that's a good approach.

1           MR. JORGENSEN: Just one example with the  
2 Fannie-Freddie Green Financing Programs, they  
3 don't actually require performance, and so it  
4 makes it very simple. They require completion of  
5 the program based on the timeline agreed to, to  
6 complete the whole building retrofit project.  
7 But it's an engineering-based study, an estimate  
8 of projected savings, and so we typically don't  
9 run into that issue.

10           For the projects that we've done  
11 midstream, that maybe are just funded out of cash  
12 flow or reserves, that's definitely more of a  
13 concern in terms of are we actually going to  
14 receive the energy savings projected that were  
15 used to justify this expense from precious, you  
16 know, cash flow and operating reserves. And they  
17 haven't all worked out. Some of have worked out  
18 great, but not all have.

19           COMMISSIONER MCALLISTER: What do they  
20 qualify as a green project? So is there -- I  
21 mean, you just check the boxes, it's got this and  
22 that, and you're done?

23           MR. JORGENSEN: For their loan programs,  
24 they recently -- well, for 2018, they increased  
25 the energy reduction standard from 20 percent

1 whole building to 25 percent whole building, but  
2 it's energy or water. So the engineering study  
3 is part of the financing process, whether it's an  
4 acquisition or a refinance. It's a third-party  
5 study. And they actually pay for most or all of  
6 the report as part of, you know, what you -- I  
7 mean, ultimately, the borrower pays for it but,  
8 you know, they compensate you for the cost of  
9 that particular engineering study. And then  
10 that's what they use to make the determination.  
11 So you have Energy and Water Measures 1 through  
12 20, that's kind of your menu of options, and then  
13 you choose those that are most cost efficient to  
14 meet their thresholds to qualify for the  
15 incentivized financing.

16 COMMISSIONER MCALLISTER: Okay. Great.

17 MS. WANG: I will just quickly respond  
18 again to the insurance question. Our experience  
19 is that off-the-shelf, it's not affordable right  
20 now for this purpose and for this market sector.  
21 But, you know, I think we continue to be  
22 interested in whether, if this opportunity grows  
23 and is -- and is developed, whether this could  
24 work, because we really like the idea of not  
25 every individual property owner not having to be

1 the insurance themselves.

2 MR. LEE: Thank you.

3 Other questions?

4 COMMISSIONER MCALLISTER: I think we're  
5 good. Great. I would like to thank you -- go  
6 ahead. Do I have -- Jeanne, you have a question,  
7 A question about that? Yeah? Go for it.

8 MS. CLINTON: I have a question.

9 COMMISSIONER MCALLISTER: Jeanne, you  
10 might as well just come up and stay up.

11 MS. CLINTON: Jeanne Clinton. These are  
12 just four quick clarifying questions of points  
13 that people on the panel made that I think would  
14 be helpful to get answers to.

15 Let's see, for anybody, this whole  
16 discussion about the 15-year recap and refi  
17 period, does that apply in general to all of the  
18 low-income multifamily housing that we're talking  
19 about or only the deed-restricted rent-assisted  
20 housing?

21 MS. CARRILLO: (Off mike.) Just TCAC.

22 MS. CLINTON: Just TCAC? So we're  
23 talking about the 5 percent rather than the 26  
24 percent of -- the two wedges of -- it was like 5  
25 or 6 percent of this low-income multifamily was

1 rent assisted and 25 percent was market rate. So  
2 this 15-year thing is only for the smaller wedge;  
3 is that right?

4 MS. CARRILLO: So the deed-restricted  
5 issue is specific to the affordable -- the deed-  
6 restricted affordable (indiscernible).

7 MS. CLINTON: Which makes it rent  
8 assisted, doesn't it?

9 MS. CARRILLO: Right.

10 MS. CLINTON: Yeah. So I just want to  
11 point out, clarifying that we're only talking  
12 about 20 percent of the housing stock in which  
13 low-income multifamily residents live? Okay.  
14 Just that clarification.

15 Rich, you said that a hub of information  
16 was really helpful to the developer. You've had  
17 some experience with this, but it sounded like it  
18 wasn't perfect yet in terms of the hub or single  
19 point of contact assistance. What would make it  
20 more perfect?

21 MR. CIRAULO: So I described the hub as  
22 sort of what we would like to see. So the  
23 experience we've had so far is disjointed pieces  
24 that we might be, you know, achieving tax  
25 incentive rebates for a PV system. We might be

1 working with SMUD or PG&E, depending on the  
2 service area, for their incentive programs.  
3 There are other programs that are out there that  
4 we probably don't know about.

5           And so it's like kind of having  
6 someone -- and again, we refer to them sort of as  
7 someone we'd be happy to kind of bring in as part  
8 of our project team that could handle sort of  
9 doing that piece of the work for us, because we  
10 don't -- you know, we will sometimes delve in and  
11 try to find something that will fit and, you  
12 know, can work with the project that we're trying  
13 to develop. But that's a lot of energy and time  
14 that we don't necessarily have.

15           And so having sort of a clearinghouse or,  
16 you know, somebody that we can say here's our  
17 project, what are the different programs that  
18 would fit, that's really what we would prefer.

19           MS. CLINTON: Okay. Great. Thanks. Two  
20 more.

21           Mr. Jorgensen, you were talking about  
22 Fannie Mae and Freddie Mac. And what market  
23 segments or circumstances of the multifamily  
24 housing is eligible to take advantage of the  
25 Fannie Mae and Freddie Mac financing that you

1 were talking about. Is it everybody or is it  
2 only people who meet certain qualifications,  
3 besides the 25 percent energy and water  
4 reduction?

5 MR. JORGENSEN: Sure. Fannie Mae and  
6 Freddie Mac are government-sponsored entities,  
7 still, officially now since the Great Recession,  
8 part of the government and Treasury, actually  
9 being quite profitable for them. So really any  
10 property, any multifamily property, I mean, you  
11 know, they provide a lot of liquidity in the  
12 single-family home market. But they have a  
13 multifamily segment that's, you know, a thriving,  
14 productive, low-risk business right now where  
15 they issue loans through, you know, a broad  
16 network of originators called -- in Fannie Mae  
17 language, they're called delegated underwriters  
18 and servicers.

19 And so, you know, five-unit properties,  
20 you know, Freddie Mac has a small balance program  
21 in particular. They go after seniors. Both  
22 agencies have a lot of focus on trying to get  
23 financing out for affordable housing with a focus  
24 on incomes below 50 percent of AMI in any given  
25 jurisdiction around the country. So, you know,



1 they don't probably finance one- and two-unit  
2 properties, but they're broadly available for a  
3 large part of the market.

4           The one place where they probably are not  
5 active would be in the tax credit syndicated  
6 world where you have the 100 percent affordable,  
7 and maybe Rich can speak to this, you know, they  
8 might pursue that business. But in the past,  
9 those have typically been a bond and credit  
10 combination on the capital stack for the 100  
11 percent global projects. And so typically you're  
12 going to have some sort of governmental agency  
13 issuing the bonds, as opposed to Fannie and  
14 Freddie. In days gone by they used to provide  
15 some liquidity enhancements and some other things  
16 on those bonds, but they haven't been in the bond  
17 business in a meaningful way since the Great  
18 Recession.

19           MS. CLINTON: Okay. Thanks. The last  
20 clarifying question.

21           A couple of you folks talked about how  
22 you hate measure-based programs. And I got the  
23 sense that there was a preference for  
24 performance-based programs. So I'm wondering if  
25 anybody want so clarify in terms of what would

1 some kind of performance-based eligibility, in  
2 terms of the savings level, be a better approach?  
3 And if so, what kind of minimum?

4 MR. HODGINS: I mean, I think we need a  
5 combination because, you know, every owner, every  
6 situation is different. And so I'm a big fan of,  
7 you know, performance-based programs for projects  
8 and for owners where that makes sense and there's  
9 the capacity and the time to do that, but that's  
10 not everybody. And so having, you know, measure-  
11 based direct-install type of programs is also  
12 important if we're trying to catch a big slice of  
13 the market. Not everybody can do it. And when  
14 you get into smaller buildings, too, the  
15 engineering starts to get upside down relative to  
16 the savings. And so you need, you know, a  
17 simplified approach for simple, small buildings.

18 MS. CLINTON: Anybody else want to  
19 comment, add on? Okay. Thanks.

20 Thank you, Eugene, for letting me --

21 MR. LEE: Okay.

22 MS. CLINTON: -- seek a few  
23 clarifications.

24 MR. LEE: Absolutely. If there are any  
25 other questions?

1           Hearing none, thank you very much, Panel  
2 three.

3           COMMISSIONER MCALLISTER:   Thanks  
4 everybody.

5           Thanks, Eugene.

6           MS. RAITT:   So next we have Jeanne  
7 Clinton to give us a wrap up of the workshop.

8           MS. CLINTON:   So I was asked -- this is  
9 Jeanne Clinton still.   I was asked to give a  
10 recap on two kinds of things, one, themes things  
11 that we heard today, and separately, needs.   And  
12 I've given myself permission to think of needs in  
13 two ways from what I heard today, one, needs for  
14 additional work or innovative or progress, as  
15 well as needs for more comments.   So I'll go  
16 through this quickly and I'll do it in the order  
17 of the day.

18           So from Panel I, some of the themes that  
19 I was hearing, or number one -- so Panel I was  
20 data for anybody who's tuning in late in the day.  
21 One theme was it's hard to get consistent, as in  
22 consistently defined, clean data from multiple  
23 sources in order to use it in some meaningful  
24 way.

25           Another theme related to that was we need

1 relevant data that's disaggregated and targeted.  
2 And then the third aspect of conveying  
3 information, not just data but information, is to  
4 use trusted agents, such as health home-visit  
5 practitioners, community-based organizations,  
6 housing rental inspectors, where we start to see  
7 sort of communication collaboration at the  
8 grassroots level across what we've previous  
9 thought of as siloes.

10           And then two of the needs that were  
11 identified going forward is the need to give more  
12 attention to who and in what role of who gets  
13 what data in terms of owners, managers,  
14 accountants, occupants, contractors, that that  
15 needs some more thought. And also the need in  
16 the context of information data to capture all  
17 the benefits, not just the energy or the non-  
18 energy, but to capture all benefits and to get  
19 away from the siloing of energy and non-energy.

20           Then I'll move to Panel II which was  
21 focused on innovative technologies. And there, I  
22 have a few themes. One was that the stacks of  
23 different rules, definitions and time frames get  
24 in the way of innovative.

25           Secondly, that determining cost

1 effectiveness is a particular challenge for this  
2 market segment, or sometimes referred to as hard-  
3 to-reach market segments in general. And being  
4 cost effective is also difficult because of the  
5 constraints on the ability to deliver other co-  
6 benefits, unless there's an opportunity to get  
7 pooled funding from those other worlds, such as  
8 health or housing structure repairs.

9           A third theme that I heard on the  
10 technology side was the need for solutions to be  
11 easy to manage by the owners and managers of  
12 properties, as well as by the participants. And  
13 there was a lot of discussion on the single point  
14 of contact or a one-stop shop or concierge as a  
15 way to help with this ease of management on  
16 solutions.

17           Some of the needs that I heard identified  
18 commonly in this panel were the need for in-unit  
19 communication technology solutions, particularly  
20 if there's limited Wi-Fi. Would Bluetooth be an  
21 answer, or do we need common protocols, so sort  
22 of working on the technology side of  
23 communications? And also a cautious reminder  
24 that as we do onsite electrification upgrades --  
25 well, as we want to do electrification and/or add

1 EV charging, there is a challenge of doing onsite  
2 electrical system upgrades, that it's going to  
3 have a cost associated with it in order to absorb  
4 the capacity of the increased electrical demand.  
5 And obviously, that depends on time of day, as  
6 well.

7           Then moving to the CLEE presentation, to  
8 me, you know, Ted nicely had two slides with  
9 common bullets that culminated from 20 peoples'  
10 common themes from their convenings: one, the  
11 lack of program coordination complexity, that's  
12 been a general theme today; two, the lack of  
13 reliable long-term public funding; third, the  
14 lack of confidence in savings, which also, I  
15 would say, connects a little bit to performance  
16 issues and insurance product issues, we can start  
17 connecting the dots.

18           And then in terms of top solutions,  
19 again, Ted pointed out the one-stop shop, the  
20 need for metrics to get at measuring and valuing  
21 what, in that group, they call the non-monetary  
22 benefits, such as quality of life improvements.  
23 So that ties back to some of the metrics and data  
24 in health that we heard earlier.

25           And in Ted's presentation, he identified

1 a newish item that was the desire for some sort  
2 of utility tariff arrangement to fund or finance  
3 retrofits in which the customers or occupants  
4 would somehow share in the payments and benefits  
5 arrangements.

6           And then that brings us to the third  
7 panel where the common themes that I was writing  
8 about were in terms of timing, of when to go  
9 after major or deep investments, that at least in  
10 a certain market segment, one has to pay  
11 attention to the 15-year refi and recap recycles.  
12 And there are opportunities to talk about some  
13 serendipitous opportunities for upgrades if some  
14 sort of, you know, major system is going to be  
15 replaced, such as a new roof, that might happen  
16 outside of those 15-year cycles.

17           And then again, in terms of how to  
18 increase investments, three things emerged,  
19 again, the hub and single point of contact idea,  
20 the need to move to more performance-based sort  
21 of accountability rather than always having to go  
22 with measure-based systems, and the need for  
23 easier or proxy means of income verification, so  
24 as not to be an extra burden on the owner and  
25 manager.

1           And then finally, one of the themes that  
2 I kept hearing from the dais today was inviting  
3 people to, in their comments, to submit real  
4 examples of good solutions that are out there for  
5 some of these many themes that we had. Where is  
6 it being done, not necessarily on a large scale,  
7 but where is it being done successfully? What  
8 are good models? And inviting folks to put that  
9 information into their comments so that it can  
10 help these agencies further as they think about  
11 what kind of initiatives that they want to  
12 support.

13           So that's it. Thank you.

14           COMMISSIONER HOCHSCHILD: Great. Thank  
15 you, Jeanne.

16           It looks like we have one public comment,  
17 at least, from Nehemiah Stone, Stone Energy  
18 Associates.

19           MR. STONE: (Off mic.) I'm going to  
20 assume, since I'm the only public commenter, I  
21 can ignore the three minutes.

22           COMMISSIONER HOCHSCHILD: Brevity would  
23 be much appreciated.

24           MR. STONE: If I can't get through this  
25 in three minutes, I hope you'll give me some



1 room.

2 First, I want to thank --

3 COMMISSIONER MCALLISTER: You also  
4 have -- you have written comments that you can  
5 submit, as well, so --

6 MR. STONE: That --

7 COMMISSIONER MCALLISTER: -- yeah.

8 MR. STONE: -- that would take me a half  
9 an hour, so I won't go through all the comments.

10 A strong request from the TCAC executive  
11 director I want to ask you to please fund a  
12 validation study for CUAC (indiscernible)?

13 COMMISSIONER MCALLISTER: I'm sorry, what  
14 is COAC?

15 MR. STONE: The CUAC.

16 COMMISSIONER MCALLISTER: Oh, right.

17 MR. STONE: The CUAC is the California  
18 Utility Allowance Calculator, which you own. You  
19 paid for it and you maintain it at this point.  
20 And it's used -- it came up a number of times.  
21 And it gives a reasonably accurate of what  
22 tenants are going to pay for utilities.

23 Although it has been shown to be very  
24 accurate compared to billing data, for most  
25 affordable multifamily projects some data

1 indicates that it's significantly less so for  
2 older, existing buildings, and for new  
3 construction in very hot regions, Climate Zones  
4 13, 14 and 15, for example. The issue appears to  
5 be with the accuracy of the building performance  
6 software from which the heating and cooling data  
7 comes from not from the CUAC itself because it  
8 doesn't calculate those internally. So that's  
9 CBAC RES (phonetic), EnergyPro, et cetera.  
10 That's what would need to be validated for this.

11           My second comment was about something  
12 that Andy already covered, so I'm not going to  
13 get too far into it, but I want to make a couple  
14 comments on it.

15           Devices like the NEXI, and the only  
16 reason I'm using the name on that is I don't know  
17 the name of any of the other devices like it,  
18 they give the tenant information about their  
19 energy use in a way that is useful for low-income  
20 tenants. We can't expect them to be looking at  
21 tables of data on their iPads or computer screen,  
22 or even on their bill. This gives them colors,  
23 it tells them what's going on, and that also gets  
24 past any language barriers.

25           The third aspect is one of the reasons

1 there's a confidence gap is that software tools  
2 currently do not reflect reality in multifamily  
3 buildings, especially low-income multifamily  
4 buildings. Is it truly reasonable to expect that  
5 households struggling with finances will have the  
6 same thermostat set points as the quote average  
7 household? When expectations of savings are  
8 based on pre- and post-upgrade analyses that  
9 assume winter setting of 68, a summer setting of  
10 75 in both cases, and the tenants were only able  
11 to afford 62 in the winter and maybe 80 in the  
12 summer until the building was fixed, we're not  
13 going to see expected savings materialize. It's  
14 neither the contractors fault, nor the programs  
15 fault.

16           The CEC needs to commission a study to  
17 see what the typical set points are in  
18 multifamily housing and affordable housing and  
19 then make adjustments to the models. Performance  
20 guarantees came up a number of times today. This  
21 directly effects performance guarantees.

22           To really move the multifamily market,  
23 this is my fourth comment, to really move the  
24 multifamily market toward energy efficiency, we  
25 will need to give perspective renters information

1 about the energy use in similar apartments. All  
2 else being equal, a renter would prefer lower  
3 utility bills. Homebuyers get similar  
4 information from a HERS report. Potential buyers  
5 of multifamily buildings will soon be able to get  
6 that, you know, building performance data through  
7 the new benchmarking program. But renters are  
8 the ones that we're leaving out of the equation  
9 at this point.

10           The influence that will really motivate  
11 multifamily building owners to make upgrades is  
12 potential renters speaking with their feet. The  
13 CEC already has the basic tool that could be  
14 used, the CUAC. However, for it to be truly  
15 credible to potential renters, there will need to  
16 be a neutral third party, not the building owner,  
17 and preferably not the government, standing  
18 behind the accuracy of the numbers.

19           One final comment, in Panel II a question  
20 came up, what can we do to overcome barriers to  
21 scaling adoption of clean energy tech in low-  
22 income multifamily?

23           My strongest suggestion is to work much  
24 more closely with TCAC on their regulations.  
25 Their regulations used to be stronger in terms of

1 requirements for energy efficiency, both in terms  
2 of minimum construction standards and competitive  
3 points. And it seems odd to me that the  
4 collection of state agencies that are involved  
5 here does not include TCAC and SIDLAC (phonetic),  
6 who are the -- provide the largest amount of  
7 funds for both affordable and new construction  
8 and affordable renovations in the state.

9 COMMISSIONER MCALLISTER: I'm going to  
10 humor you.

11 Could you turn off the flashing red light  
12 please? Thank you.

13 So has tax reform in any way affected the  
14 availability of tax credit financing?

15 MR. STONE: Has what?

16 COMMISSIONER MCALLISTER: Has tax reform  
17 at the federal level impacted our state level  
18 availability of tax credit financing?

19 MR. STONE: It's too soon to see whether  
20 or not. But at the same time that some tax  
21 reductions went in place for corporations,  
22 California got a larger portion of low-income  
23 housing tax credits, so --

24 COMMISSIONER MCALLISTER: Actually, maybe  
25 I should have asked Lane that, but, oh well.

1 MR. STONE: So I think those things are  
2 offsetting.

3 COMMISSIONER MCALLISTER: Okay.

4 MR. STONE: At the times when it's the  
5 most difficult the tax credits go down to like  
6 \$.80 cents on the dollar. At times where things  
7 are looking really good for low-income, they're  
8 over \$1.00 per \$1.00.

9 COMMISSIONER MCALLISTER: Yeah.

10 MR. STONE: Right now it's at about \$.92  
11 to \$.94 a dollar, so --

12 COMMISSIONER MCALLISTER: Okay.

13 MR. STONE: -- and that's pretty average.

14 COMMISSIONER MCALLISTER: Okay. So you  
15 all set?

16 MR. STONE: Any other questions?

17 COMMISSIONER MCALLISTER: I think that's  
18 it.

19 COMMISSIONER HOCHSCHILD: Thank you, Mr.  
20 Stone.

21 Is there anyone else in the room who  
22 would like to make a comment? All right. Thank  
23 you. We're adjourned.

24 MS. RAITT: Oh, we do have one on  
25 WebEx --

1 COMMISSIONER HOCHSCHILD: Oh, on WebEx.

2 MS. RAITT: -- who's been waiting.

3 COMMISSIONER HOCHSCHILD: Oh, yeah.

4 COMMISSIONER MCALLISTER: Do you want to  
5 make any wrap-up comments or anything?

6 MS. RAITT: So --

7 COMMISSIONER HOCHSCHILD: Go ahead.

8 MS. RAITT: -- Tom Phillips.

9 And if anyone else on WebEx wanted to  
10 make comments, please raise your hand.

11 Go ahead, Tom.

12 MR. PHILLIPS: Hi. Yeah, thanks for the  
13 great discussions all day. I'll try to make a  
14 couple brief points and submit comments later.

15 And mainly, I guess, focusing on  
16 vulnerable populations from the health  
17 perspective, we know that our elderly population  
18 or aged or whatever you want to call them now is  
19 growing quite a bit, and as well as other  
20 populations, like those with diabetes and obesity  
21 and so on. So when you look at the statistics,  
22 about half of the population is going to be very  
23 sensitive to heat exposure, and they're going to  
24 be indoors more and more.

25 So when we look at the health co-benefits of

1 energy efficiency, they are becoming more and  
2 more important because of the demographic  
3 changes, and with climate change and overheating  
4 in California. And when you look at the coastal  
5 areas, what is it, 90-plus percent of the homes  
6 don't have air conditioning. So in terms of  
7 carbon, we can't afford to really air condition  
8 those homes without trying to reduce air --  
9 improve energy efficiency first.

10           So what I would highly recommend is  
11 trying to piggyback on other programs, such as  
12 weatherization or healthy homes programs, to add  
13 some mitigation and adaptation measures for  
14 handling extreme heat, you know, whether it's  
15 external shading or cooling booths or whatever.

16           And a few other quick comments. One  
17 growing co-benefit of energy efficiency and  
18 preventing overheating is liability. It's  
19 already been (indiscernible) for (indiscernible)  
20 up in San Francisco. It's a real big landmine, I  
21 guess, for any kind of building planning or  
22 retrofit where you're trying to prompt  
23 performance for not only energy, but thermal  
24 comfort and so on.

25           And so I think you can do a lot to



1 prevent those problems by thinking about it,  
2 applying the change and the increase  
3 (indiscernible).

4           And lastly, in terms of targeting any  
5 data, you need to look at vulnerable platforms,  
6 where they live, and then the conditions of the  
7 housing. And this is already being done in  
8 (indiscernible) where they can overlap that data  
9 to really target where they get the best bang for  
10 their buck in terms of carbon reduction and  
11 energy savings, as well as the public health of  
12 (indiscernible).

13           So thank you very much.

14           COMMISSIONER HOCHSCHILD: Thank you.

15           Is there anyone else in the room or on  
16 the phone who would like to make a comment?

17           MS. RAITT: So, yeah, so folks on the  
18 phone, if you're on the phone lines, if you'd  
19 like to make a comment, we'll open up the lines  
20 now. And if you didn't want to comment, please  
21 mute your line. Okay.

22           COMMISSIONER HOCHSCHILD: Okay.

23           MS. RAITT: So I don't think we're  
24 hearing any comments.

25           COMMISSIONER HOCHSCHILD: Okay. With

1 that, we'd like to thank all the stakeholders  
2 here and staff, and especially our colleagues and  
3 friends from the PUC for joining for a terrific  
4 and fruitful discussion, and we're adjourned.  
5 Thank you.

6 (The workshop adjourned at 4:18 p.m.)

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**REPORTER' S CERTIFICATE**

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

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

IN WITNESS WHEREOF, I have hereunto set my hand this 25th day of July, 2018.



---

Eduwiges Lastra  
CER-915

CALIFORNIA ENERGY COMMISSION

In the Matter of:

Clean Energy in Low-Income       )  
  )  
Multifamily Buildings               )  
\_\_\_\_\_

JOINT AGENCY WORKSHOP

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

FIRST FLOOR, ART ROSENFELD HEARING ROOM

SACRAMENTO, CALIFORNIA

WEDNESDAY, MAY 30, 2018

10:00 A.M.

Reported by:

Gigi Lastra

APPEARANCES

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David Hochschild, California Energy Commission

Andrew McAllister, California Energy Commission

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Karen Douglas, California Energy Commission

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on behalf of Commissioner Clifford Rechtshaffen

Adenike Adeyeye, California Public Utilities Commission,  
on behalf of Commissioner Guzman Aceves

ENERGY COMMISSION STAFF

Heather Raitt, IEPR Program Manager

PRESENTERS

Presentation of Context of SB 350 Low-Income  
Barriers and Implementation Effort

Michael Sokol, California Energy Commission

Presentation on the Current Landscape of  
Multifamily Sector

Isaac Sevier, Natural Resources Defense Council

Presentation on the Clean Energy in Low-Income  
Multifamily Building (CLIMB) Action plan

Eugene Lee, California Energy Commission

Presentation on Utilizing Data to Better  
Understand Multifamily Buildings

Erik Jensen, California Energy Commission

Renee Daigneault, Los Angeles Better Buildings Challenge

## APPEARANCES

### Panel I

Martha Brooks, Moderator, California Energy Commission,

Stephanie Chen, Greenlining Institute

Meredith Milet, California Department of Public Health

Nancy Sutley, Los Angeles Department of Water and Power

Mary Sutter, Grounded Research and Consulting

### Panel II

Mikhail Haramati, Moderator, California Energy Commission

Andrew Brooks, Association for Energy Affordability

Ram Narayanamurthy, Electric Power Research Institute

Dave Brenner, Fresno Housing Authority

Mauro Dresti, Southern California Edison

Alice Stover, MCE Clean Energy

### Presentation: Berkeley Convening on Finance

Ted Lamm, UC Berkeley Center for Law, Energy, and the  
Environment

### Panel III-Encouraging Investment and Market Adoption

Eugene Lee, California Energy Commission

Deana Carrillo, California Alternative Energy and  
Advanced Transportation

Stephanie Wang, California Housing Partnership  
Corporation

Rich Ciraulo, Mercy Housing

David Hodgins, Sustento Group

APPEARANCES

Panel III (continued)

Lane Jorgensen, MG Properties Group

Recap of Workshop Themes and Areas that  
Need Additional Feedback

Jeanne Clinton, Former Special Advisor for Energy  
Efficiency to the Governor's Office and CPUC

PUBLIC COMMENT

Rachel Golden, Sierra Club

Deborah Little (via WebEx written comment)

Nehemiah Stone, Stone Energy Associates

Tom Phillips

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P R O C E E D I N G S

10:03 A.M.

SACRAMENTO, CALIFORNIA, WEDNESDAY, MAY 30, 2018

MS. RAITT: Good morning. Let's go ahead and get started. Welcome to today's 2018 IEPR Joint Agency Workshop on Clean Energy in Low-Income Multifamily Buildings. I'm Heather Raitt, the Program Manager for the IEPR.

I'll go over just a few of our normal housekeeping items.

If there's an emergency and we need to evacuate the building, please follow staff to exit the building, out the doors, and go diagonally across the street to Roosevelt Park.

Please also note that this workshop is being broadcast through our WebEx recording system, WebEx broadcasting system, so it is being recorded, and so we'll have an audio recording posted in about a week, and a written transcript in about a month.

We do have a very full agenda, so I ask our presenters to please stay within your allotted time limits.

There will be an opportunity at the end of the day for public comment, and we'll allow

1 three minutes per person for comments, and first  
2 take comments from folks in the room, and then  
3 from WebEx participants and folks on the phone  
4 lines. If you do -- would like to make a  
5 comment, go ahead and fill out a blue card. And  
6 you can give it to me or our Public Adviser,  
7 who's in the back of the room. And if you're on  
8 WebEx, just use your chat function, and just for  
9 comments at the very end of the day.

10 Materials for the meeting are at the  
11 entrance to the hearing room, and they're posted  
12 on our website. And written comments are welcome  
13 and due June 13th. And the notice provides all  
14 the information for submitting comments.

15 And with that, I'll turn it over to  
16 Commissioners for opening remarks. Thanks.

17 COMMISSIONER HOCHSCHILD: Well, thank  
18 you, Heather. And thank you all to the  
19 stakeholders who are here this morning.

20 The IEPR is a little bit like the Golden  
21 Gate Bridge; as soon as you finish, you start  
22 painting it again, and that's kind of how it's  
23 been. And I really want to thank Heather and her  
24 team.

25 For those of you in the room today, I do

1 want to note that we're doing the IEPR  
2 differently this year. We're doing it in two  
3 volumes. Volume 1 was just posted yesterday  
4 afternoon. And I would really welcome all of you  
5 to take a look at that and provide comments  
6 during our two-week public comment period. And  
7 that, we're going to get done by September, in  
8 time for the International Climate Summit. It  
9 tells the story at large of California's clean  
10 energy efficiency, clean transportation  
11 innovation, and equity policies and what's  
12 happening. And then Volume 2 will get done on  
13 the normal cycle.

14           With respect to multifamily, just it's  
15 worth noting, you know, we're now in a place  
16 where the multifamily is the majority of the new  
17 construction happening in the state. It's a  
18 really critical sector, particularly with low-  
19 income. And both Commissioner McAllister and I  
20 had the opportunity in the last few weeks to  
21 visit a really impressive multifamily low-income  
22 project. I want to thank Isaac Sevier, who is  
23 here today, who helped lead that tour.

24           But with that, we'll get into it.

25           Commissioner McAllister?

1                   COMMISSIONER MCALLISTER: Well, great.  
2 We have a really substantive solid day, so I  
3 don't want to take away from all the great  
4 presentations and conversation we're going to  
5 have. I just want to highlight the importance of  
6 multifamily and build on what Commissioner  
7 Hochschild just said.

8                   Multifamily housing is really the future  
9 of California and our urban areas depend on it.  
10 We depend on it to meet our climate and energy  
11 goals, but for many, many reasons that really  
12 have nothing to do with energy at all. And so  
13 it's really a quality of life issue. It's an  
14 equity issue. It touches many, many points of  
15 policy and just equity and, I would just say,  
16 social importance beyond energy and environment.  
17 Of course, we're here because of the energy  
18 environment angles.

19                   But as a platform for innovation and  
20 technology, as well, multifamily is really  
21 surging to the fore, so it's just a perfect  
22 moment to have this conversation. I think  
23 there's so much substance along many, many  
24 different axes and many different policy  
25 directions that my hope is that we can develop

1 ideas. You know, there's a lot of great thinking  
2 going on already and we're going to unify that  
3 and sort of bring that together in this room and  
4 in the IEPR, but that we can build on it to  
5 really create something that becomes obvious that  
6 it needs more extensive policy treatment over the  
7 next year or two or more.

8           The code update that you all probably  
9 heard about that was adopted a few weeks ago at  
10 this Commission focused on single-family for the  
11 most part, and low-rise multifamily. And for the  
12 next code update, again, this is very timely  
13 conversation, for the next code update in 2022,  
14 we are going to focus on multifamily, as well as  
15 commercial, but we're really going to make a good  
16 focus of multifamily. It's overdue.

17           And so, again, you know, all the  
18 technologies that we want, if it's efficiency, if  
19 it's renewables, you know, if it's clean  
20 transportation, demand response, all of those  
21 sort of key pieces of getting to our clean energy  
22 future are there, present in earnest, in  
23 multifamily housing.

24           And so I think it's just a really good  
25 moment to have this conversation. And I really

1 appreciate everybody being here and contributing  
2 your expertise. It's a diverse area. It has all  
3 sorts of issues that I -- as I mentioned before.  
4 So I think, you know, we'll need all of your --  
5 all of your sleeves rolled up and helping us sort  
6 of navigating a good policy path, trying to  
7 identify the highest needs and then putting some,  
8 really, some resource requirements and some  
9 directions going forward on that. So thanks  
10 again for being here.

11 Commissioner Scott?

12 COMMISSIONER SCOTT: Good morning  
13 everyone. And I'm also just delighted to be here  
14 and to have the conversations that we have  
15 planned for today. We have a really amazing set  
16 of panels and panelists to hear from.

17 I'll just really echo what you heard from  
18 Commissioner McAllister in terms of our  
19 multifamily buildings here in the state really do  
20 sort of have all of the components, especially on  
21 clean energy, that we're looking at together,  
22 renewables for community solar, those types of  
23 things, energy efficiency and how do we really  
24 make all of that work together? But then we want  
25 to plug in a bunch of electric vehicles into

1 these, as well. And so how do we make sure that  
2 as we are trying to make the buildings more  
3 efficient, we aren't undercutting or balancing  
4 away from wanting to add some plug load by adding  
5 in plug-in electric vehicles to those  
6 communities?

7           And then as we're designing them and as  
8 we put them together it is, as Commissioner  
9 McAllister and Hochschild have mentioned, so much  
10 broader than really just the energy component. I  
11 mean, we're looking at how  
12 do you build smart communities? How are they  
13 walkable? How are they bikeable? How are -- is  
14 it accessible, making sure people can easily get  
15 to where they need to be in a smart way? And  
16 some of that, I believe we've got some folks,  
17 potentially later today, coming from the  
18 Strategic Growth Council, and the Transformative  
19 Climate Communities, as well. But when we think  
20 about all of this, just a smart design of  
21 communities and making sure that our low-income  
22 multifamily buildings are really a component of  
23 this in terms of the renewables, the energy  
24 efficiency, the clean transportation, all of that  
25 together.

1           So I'm very much looking forward to the  
2 dialogue today. Thank you.

3           I'll turn it to Commissioner Douglas.

4           COMMISSIONER DOUGLAS: Hi. Good morning,  
5 everybody. I think we've heard a lot from those  
6 on the dais. I agree with the comments.

7 Multifamily really needs to have this level of  
8 focus, and I'm really delighted to be here today.

9           Thank you.

10          MS. GOLDBERG: Hi. I'm Sandy Goldberg  
11 from the California Public Utilities Commission  
12 on behalf of Commissioner Cliff Rechtschaffen,  
13 who could not be here today.

14          And the Public Utilities Commission has  
15 recently approved new budgets for its multifamily  
16 low-income building energy efficiency retrofit  
17 program that is called Energy Savings Assistance  
18 Program, ESAP. And a major new component of this  
19 program is for energy efficiency measures in  
20 multifamily building common areas. So we're very  
21 hopeful that over the next few years that the new  
22 multifamily common area program will be fruitful.  
23 And we'll have a lot of lessons that we can learn  
24 on what improvements are needed going forward for  
25 this activity.



1 Thank you.

2 MS. ADEYEYE: Hi everyone. My name is  
3 Adenike Adeyeye. I'm an Adviser to Commissioner  
4 Guzman Aceves at the California Public Utilities  
5 Commissioner, and she's sorry she couldn't be  
6 here today, but this is a really important issue  
7 to her, to our office, because it's so important  
8 to make sure that California's clean energy  
9 transformation actually benefits everyone. And  
10 it's very important to get to the people who are  
11 living in multifamily buildings which, as  
12 everyone already discussed, is a lot of people in  
13 California. Making sure that it gets to low-  
14 income multifamily buildings is especially  
15 important.

16 And I just wanted to highlight that  
17 Commissioner Guzman Aceves is the assigned  
18 Commissioner for the net energy metering  
19 proceeding which is mentioned in the Climate  
20 Action Plan. And part of that scope includes a  
21 Multifamily Affordable Housing Solar Roofs  
22 Program. So we're very excited to see how we can  
23 work with other agencies, also work with all the  
24 stakeholders who are here, to try to figure out  
25 ways to make sure that this transition does

1 actually benefit everyone and does include low-  
2 income multifamily housing.

3           And thank you so much to Heather, to  
4 everyone who worked on the Climate Action Plan.  
5 It seems like it was a ton of work to do all of  
6 this and to put this together, so we appreciate  
7 it. I'm looking forward to hearing from everyone  
8 today.

9           MS. RAITT: Great. Okay, so thanks.

10           So our first speaker is Michael Sokol  
11 from the Energy Commission.

12           MR. SOKOL: All right, good morning  
13 everyone. My name is Michael Sokol and I've been  
14 serving as the coordinator role for Senate Bill  
15 350 implementation for the Energy Commission. So  
16 what I'm going to do is just give a brief recap  
17 on sort of the genesis of this Low-income  
18 Multifamily Building Action Plan, the Low-Income  
19 Barrier Study, and some broader context of SB  
20 350. I will also keep it pretty brief, just so  
21 we can jump into the, really, meat of the content  
22 today and allow the experts to get into the panel  
23 discussions.

24           So just a quick overview of SB 350.  
25 Everyone is likely very familiar with the major

1 goals, the 50 percent renewable energy by 2030,  
2 requiring a doubling of energy efficiency savings  
3 by 2030, looking at encouraging widespread  
4 transportation electrification, you know,  
5 wherever possible, all of this with a shift  
6 towards reducing greenhouse gas emissions across  
7 the energy sector. And then really a key theme  
8 throughout all of these requirements and the  
9 programs that have been developed in response to  
10 those is the need to prioritize benefits for low-  
11 income residents and those that live in  
12 disadvantaged communities, to make sure that,  
13 really, there is an inclusive clean energy  
14 economy and that we're addressing those barriers  
15 that have historically limited participation.

16           And so specifically, one of the  
17 requirements from SB 350 was the Low-Income  
18 Barrier Study. This is something that the Energy  
19 Commission was tasked with, looking at the  
20 barriers on the energy efficiency and renewable  
21 energy side. And the Air Resources Board was  
22 tasked with looking at transportation-focused  
23 low-income barriers.

24           Where the Energy Commission published our  
25 report in December of 2016, and shortly

1 thereafter the Air Resources Board has put out  
2 their report. And I'll get into a little bit of  
3 detail about some of the barriers identified  
4 throughout this process and some of the  
5 recommendations that have taken shape as a result  
6 of publication of the study. But the link is  
7 there for both reports at the bottom of this page  
8 for those that may not be familiar.

9           Just a high-level flavor of the barriers  
10 that were identified in this process, and we'll  
11 get into a lot more depth in some of these later  
12 today, but you'll notice there's a lot of  
13 parallels through the broader Barrier Study, and  
14 then the specific Multifamily Action Plan, as  
15 well. So looking at the fact that a lot of low-  
16 income residents are renters and there's not a  
17 high home ownership rate.

18           Specifically, a lot of the complexity  
19 around the multifamily building discussion, which  
20 the Barrier Study sort of scratched the surface  
21 on, and this Multifamily Building Action Plan  
22 really dives in a lot more depth, looking at, you  
23 know, not a lot of access to capital and the  
24 inability to take on significant new debts to  
25 install clean energy measures, often times older

1 buildings that are in need of upgrades, just for  
2 structural issues or other issues that may limit  
3 the ability to go in and install clean energy.  
4 And then also some unique needs for remote or  
5 under-served communities that are different than  
6 maybe the urban environment where you have some  
7 issues with different heating fuels that result  
8 in higher costs, or limited access to some of the  
9 efficiency programs that are offered.

10           And so that's kind of the structural  
11 barrier category.

12           There's also some program and policy  
13 barriers that were identified that really look on  
14 the market delivery side, inconsistent  
15 definitions was identified as a key issue,  
16 inability to sort of integrate across some of the  
17 programs. Really what we're looking at is some  
18 siloing issues, and along with those, some data  
19 limitations around inconsistent data collected or  
20 that hasn't been shared historically or isn't  
21 always on the same consistent measures. And then  
22 looking at unrecognized non-energy benefits where  
23 you look at, often times, some of these energy  
24 upgrades result in benefits that are far beyond  
25 energy savings or cost savings and can result in

1 quality of life or health and safety  
2 improvements.

3           So that's, again, just the high-level.  
4 Please refer to the Barrier Study for more detail  
5 on the specific barriers, and we'll hear a lot  
6 more about those later today.

7           But ultimately, as a conclusion, the  
8 Barrier Study recommended 12 different high-level  
9 actions that could be taken by different actors.  
10 And with each of those, there's a number of sub-  
11 recommendations, so I'm just going to touch upon  
12 a few that are very relevant today.

13           We have five principle recommendations.  
14 And really to address some of those program  
15 alignment and coordination-type of issues, the  
16 first recommendation was to get a Task Force of  
17 state agency representatives up and running.  
18 This is something that has now -- there's been  
19 lots of coordination behind the scenes for all of  
20 the agencies, with one of the deliverables being  
21 this Action Plan you see today. And so this has  
22 been such a huge collaborative effort. There's  
23 probably too many to list here that have  
24 contributed, but refer to the Action Plan itself  
25 and it has a good list of all those that have

1 chimed in and given good feedback.

2           One of the sub-recommendations for this  
3 Task Force was actually to focus issues specific  
4 to multifamily buildings. And so that's really  
5 the genesis of where this Action Plan has come  
6 from is through this Task Force and the  
7 interagency coordination effort.

8           There's a number of other recommendations  
9 that you'll hear echoed throughout the narrative  
10 today.

11           Looking at ways to include low-income  
12 customers and different solar offerings  
13 including, potentially, community solar programs.

14           Making sure that we're considering the  
15 full range of benefits of sort of clean energy  
16 upgrades that include workforce development and  
17 education goals and having a comprehensive  
18 strategy across the agencies that focuses on  
19 that.

20           Looking at ways to unlock addition access  
21 to capital and new financing opportunities that  
22 take consideration of the inability to take on  
23 new debt or things like, potentially, low credit  
24 scores or lack of access to capital.

25           Looking at ways that across the agencies,

1 we can develop a consistent set of metrics and  
2 share data and track things systematically across  
3 the whole state and across the various programs  
4 that are offered.

5           And so this is kind of the core set of  
6 principle recommendations from the Barriers  
7 Study. There were seven additional  
8 recommendations. And really, again, there's a  
9 lot of meat to these, so I would refer you to the  
10 Study to dig into them.

11           But at a high level, we already talked  
12 about expanding opportunities for renewable  
13 energy for low-income customers, looking at ways  
14 to align tax credits and use some of the  
15 information from tax events to align clean energy  
16 upgrade opportunities.

17           Thinking across the programs from more of  
18 a customer-oriented approach to a one-stop shop  
19 kind of a mechanism. This is relevant, also in  
20 the multifamily side, as well, where we heard a  
21 lot of feedback on the need for a one-stop shop  
22 on the multifamily side, particularly for  
23 building owners that often times struggle, not  
24 knowing where to go for all these various program  
25 offerings.



1           We want to consider consumer protection,  
2 of course. As there's more opportunities, you  
3 want to make sure that low-income folks are safe  
4 and protected and that there's trust built into  
5 the system. So along that same line, working  
6 with qualified community-based organizations that  
7 know the local communities, know the residents,  
8 and sort of have a local trusted voice in the  
9 community that can serve as liaison in between  
10 some of the state-administered programs and the  
11 local needs.

12           And then, lastly, just a couple of items  
13 of looking at ways to align some of our research  
14 program offerings to target benefits for low-  
15 income and disadvantaged communities. And then  
16 looking -- and this was sort of a third  
17 requirement of the Barrier Study, is looking at  
18 ways to increase small business contracting  
19 opportunities in disadvantaged communities.

20           And so that rounds out the whole list of  
21 our 12 recommendations. And I just wanted to  
22 mention, too, that this is from the Energy  
23 Commission study that released 12  
24 recommendations. The transportation-focused  
25 study on the Air Resources Board side also has a

1 range of recommendations, as well. And so both  
2 agencies, along with the PUC, along with the  
3 whole range of other state agencies have been  
4 working closely together to actually implement  
5 these recommendations. And so that's -- we'll  
6 hear a lot more about some of those steps that  
7 have been taken today.

8           There's a couple I do just want to  
9 highlight for folks that may not already be  
10 aware. This relates to the Recommendation 5 from  
11 our study which is looking at better ways to  
12 utilize data and track performance over time.  
13 There's an energy equity indicator tracking  
14 progress report that the Energy Commission has  
15 taken the lead on developing, in coordination  
16 with all the others, as well, and lots of public  
17 feedback, that looks at tracking progress of four  
18 different clean energy programs over time as they  
19 are performing in low-income and disadvantaged  
20 communities. And this is also serving as a  
21 tracking mechanism for implementation of the  
22 Barrier Study recommendations.

23           There is a draft Track Progress Report  
24 that's posted right now on the Energy  
25 Commission's website. There's the second link

1 you see here, where we had an initial sort of  
2 framework paper published last year. There's the  
3 draft Tracking Progress itself available now. And  
4 we're working towards a final, which should be  
5 coming next month.

6           As we publish this final Tracking  
7 Progress Report the idea is to move towards more  
8 of an interactive mapping tool that will allow  
9 stakeholders to go on it, conduct their own  
10 analysis, focus in on different regions, and  
11 then, you know, sort of build the picture of what  
12 story that they're trying to tell. And then on  
13 the static Tracking Progress Report, there will  
14 be an annual update, as consistent with our other  
15 Tracking Progress Reports that are done here.

16           I would encourage everyone to go check  
17 out the links here and go, you know, familiarize  
18 yourself with the system. I think it's a very  
19 good start, but there's still additional work to  
20 be done to build out the picture, specifically on  
21 the multifamily side as we move forward. And  
22 we'll hear some about the data limitations and  
23 potential actions to move that forward later  
24 today.

25           Another effort that I just wanted to

1 point folks to that's related to SB 350  
2 implementation is the Joint Agency Public  
3 Utilities Commission and Energy Commission  
4 Disadvantaged Community Advisory Group. This was  
5 a requirement of SB 350. There was a kickoff  
6 meeting that was held earlier this year, just a  
7 couple of months ago, here in Sacramento. And  
8 then going forward, there will be quarterly  
9 meetings. But really the intent of this body is  
10 to review and provide advice to the agencies on  
11 proposed programs and sort of how they are  
12 impacting disadvantaged communities to make  
13 improvements moving forward.

14           And so there's, as you can tell, a number  
15 of key coordinating bodies and mechanisms to try  
16 and really make sure that the Energy Commission,  
17 the PUC and other agencies are being responsive  
18 to the needs of low-income customers and  
19 disadvantaged communities.

20           Just at a quick high level, the next  
21 steps are, you know, we'll continue to coordinate  
22 amongst the agencies through this Task Force  
23 mechanism, but through, also, meetings like this,  
24 key workshops and roundtable discussions, et  
25 cetera.

1           Outside of the interagency coordination,  
2 making sure that we're going back out, engaging  
3 with communities, understanding what the local  
4 needs are, even doing regional outreach, as  
5 needed, to make sure that we're, you know, coming  
6 to folks, where we realize it's not always  
7 possible for everyone to come here in Sacramento  
8 and join a workshop like this.

9           And then like I mentioned, tracking  
10 process on the energy equity goals, and also the  
11 larger SB 350 goals, many of which are relevant  
12 today. So where we have energy equity in the  
13 Barrier Study as kind of the genesis of this  
14 Action Plan, there's implications for things like  
15 the energy efficiency doubling, the renewable  
16 energy goal that's here in California, and  
17 ultimately towards the decarbonization push that  
18 is really a key focus moving forward.

19           So with that, I will leave it here. And  
20 I'm happy to take any questions from  
21 Commissioners, or otherwise we'll kind of  
22 continue moving through the agenda.

23           MS. RAITT: Thanks, Mike.

24           Next is Isaac Sevier from Natural  
25 Resources Defense Council.

1           MR. SEVIER: Hi everyone. Good morning.  
2 I want to thank the Commission staff for inviting  
3 me to come and speak with you today and share  
4 what I believe are some of the most important  
5 highlights for us in the room to understand about  
6 the state of clean energy and low-income  
7 multifamily housing as we kick off the rest of  
8 our discussion today.

9           My name is Isaac Sevier and I work at the  
10 Natural Resources Defense Council, which is an  
11 international environmental nonprofit group. And  
12 specifically, I spend my time building the  
13 California network of Energy Efficiency for All,  
14 which is a national partnership advancing healthy  
15 and affordable energy solutions for under-served  
16 renters.

17           Before I dive in, I want to just note  
18 that it would pretty much be impossible for me to  
19 really cover the breadth and depth of every clean  
20 energy technology with the attention that it  
21 deserves. Rather than do a disservice to  
22 renewables, energy efficiency, distributed  
23 storage and electric vehicles, I chose to keep my  
24 remarks at a pretty high level about the state of  
25 clean energy in low-income multifamily.

1           Over the next 15 minutes, I'm going to  
2 attempt to do three things. I want to describe  
3 what I think is an emergency in motion, as we  
4 talk about the widening gap for Californians in  
5 terms of clean energy access. While we're on our  
6 way to cleaning up our grid and decarbonizing the  
7 fifth largest economy in the world, the poorest  
8 people among us simply can't access the same  
9 benefits that we have. Secondly, I'm going to  
10 try to characterize the fundamentals of the  
11 multifamily properties that house nearly 18  
12 percent of California households. And last, I'll  
13 cover briefly some barriers that are really  
14 specific to the building sector and the benefits  
15 to be had in overcoming them if we really tackle  
16 this effectively.

17           Today, 40 percent of households in  
18 California are low-income. Low-income is defined  
19 often for program eligibility as 200 percent of  
20 the federal poverty level, which in 2018 for a  
21 family of four is \$50,000. If you qualify as  
22 low-income, you're likely to be also someone who  
23 rents your home. You're likely, as we've talked  
24 about already, to be living in multifamily  
25 housing. And you're also likely to be non-White.

1 You're likely to be elderly or being -- taking  
2 care of someone who is elderly.

3           And for the purposes of this  
4 conversation, it's important to note that you're  
5 very likely to face high levels of energy  
6 insecurity, which means that you're not just  
7 struggling to pay your energy bills but, in fact,  
8 you're making tradeoffs between food, housing,  
9 medicine and energy. And if not -- if we don't  
10 come up with interventions on this, it really  
11 produces long-term health outcomes, and I've  
12 listed a few here, some of the most serious of  
13 which are higher rates of respiratory problems,  
14 heart disease. And some of our health friends  
15 are even telling us it has severe implications  
16 for life expectancy.

17           Meeting an energy burden in low-income  
18 households in California is two times as high as  
19 for all households. And I'm showing you a graph  
20 that points out what this looks like across six  
21 of the largest metropolitan statistical areas  
22 here in the state.

23           So in San Diego, what you're seeing is if  
24 you're living in a low-income multifamily  
25 household, you're paying four percent of your



1 income for energy, compared to two percent that  
2 everybody else pays.

3 I want to note that this graph doesn't  
4 include any information about our communities in  
5 the Central Valley because they weren't included  
6 in the source study, and this is because they're  
7 not part of a metropolitan statistical area. So  
8 I think this sort of further highlights the fact  
9 that if we rely on some of the known data, we're  
10 going to miss out on a large part of our  
11 population who are living in even hotter climate  
12 zones than our coastal population. And  
13 comprehensive approaches and solutions really  
14 need to take them into account.

15 So let's -- that's kind of the human  
16 implication of this emergency that described.

17 I want to talk a little bit about where  
18 these folks are living. And remember that we  
19 just saw this, 40 percent of Californians have  
20 low-incomes, and 44 percent of those households  
21 are living in rented multifamily housing,  
22 accounting for more than six-and-a-half million  
23 people.

24 So from the chart on the right we can see  
25 that it's divided up into -- the classifications

1 are divided up into how many units are in each  
2 building. So when we talk about multifamily  
3 programs, you'll often see programs that are  
4 designed to target buildings with five or more  
5 units. Then there are other programs that might  
6 address buildings with just two to four units.  
7 Together, these make up that 44 percent.

8           Next, I want to talk about just the  
9 vintage of housing that we're talking about. The  
10 majority of low-income multifamily housing was  
11 built prior to 1980, and these represent the most  
12 significant opportunity for envelope (phonetic)  
13 and equipment measure upgrade.

14           So if you're looking at this graph with  
15 me, you'll see that five-plus unit buildings, 45  
16 percent were built before 1970, and another 14  
17 percent were built between 1970 and 1974. And  
18 you can kind of add up the numbers yourself to  
19 see that 80 percent of the five-plus unit  
20 properties were built before 1980, and 70 percent  
21 of those two- to four-unit properties.

22           So even, if we look up the scale, we even  
23 see that properties that were built around 1990,  
24 if we think about where we are today in 2018,  
25 we're talking about buildings that are

1 approaching 30 years old. And technologies, as  
2 far as energy efficiency and renewables, has  
3 changed a lot in that time. And we'll have to  
4 make significant investments in a much older  
5 stock.

6           So the ownership of multifamily housing  
7 is where it starts to be really complex. And  
8 I'll kind of recall for you guys that six percent  
9 of multifamily housing is what's called rent  
10 assisted, meaning that it's subject to really  
11 complex federal requirements. This housing is  
12 often owned by either large corporations or by  
13 nonprofit groups.

14           And in contrast, the bulk of market rate  
15 low-income housing is owned by individuals. And  
16 I want to make a note that this is not market  
17 rate in the sense that you can go on Craigslist  
18 and see that the rents are kind of comparable to  
19 everybody around them, but that they're  
20 specifically market rate low-income, which is a  
21 term of art that often hides the fact that this  
22 housing would be unacceptable if you could just  
23 pay more to get out of it.

24           Well, the main takeaway here is that the  
25 ownership structures are very different depending

1 on whether or not you're talking about rent  
2 assisted properties or whether you're talking  
3 about market rate. And as a result, it's really  
4 hard to just paint with one broad brush and say  
5 this solution will fit everybody when we talk  
6 about the low-income multifamily space.  
7 Especially for corporate ownerships in this  
8 space, it presents a number of financial barriers  
9 that I'll kind of address a little bit later.

10 I was asked to kind of include this  
11 statistic for you that highlights the geographic  
12 location of low-income multifamily buildings.  
13 Sixty-eight percent of all low-income multifamily  
14 housing is in just six counties.

15 This is just one example of how the state  
16 agencies who are tasked with, you know, meeting  
17 the goals of SB 350 could think about  
18 prioritizing their efforts. But I did a little  
19 bit of work and thought, if I waited at all on  
20 disadvantaged communities in this, you would  
21 actually see the last two counties fall off of  
22 this graph, and you would add a lot of our  
23 Central Valley communities, including San  
24 Bernardino, Kern County, Fresno County,  
25 Sacramento and San Joaquin Counties.

1           But I say this to highlight the fact that  
2 it might be easy to say, where are the  
3 multifamily buildings? But that doesn't  
4 necessarily correspond to where are the energy  
5 savings and the energy gains to be had in low-  
6 income and multifamily housing.

7           So, so far I've shown a lot of  
8 information just about the building stock,  
9 without covering the actual energy efficiency or  
10 renewable energy potential that's here. And some  
11 of that is just because we don't have as robust  
12 studies as we'd like to really evaluate the  
13 potential that exists.

14           But we do know from practice that  
15 existing programs are realizing those savings.  
16 So the Community Services and Develop Low-Income  
17 Weatherization Program has been able to achieve  
18 44 percent energy savings in its low-income  
19 multifamily treatments.

20           Some of that tremendous success is  
21 focused -- is because the program is focused on  
22 achieving greenhouse gas reductions rather  
23 than -- and, thus, can kind of like holistically  
24 treat a building rather than splitting up its  
25 attention between what's going on in the tenant

1 unit versus in the common area spaces of the  
2 building.

3 Another really promising program that was  
4 alluded to earlier on the dais is the Solar on  
5 Multifamily Affordable Housing Program, which is  
6 going to install 300 megawatts of solar over the  
7 next ten years and has been specifically designed  
8 to figure out how to deliver benefits, not only  
9 to the building owners, but to the tenants first.

10 I think everyone in the room is probably  
11 really familiar with the split incentive problem,  
12 which is also described like at length in the SB  
13 350 Barriers Report. And if you're not familiar,  
14 the barrier really represents the building owners  
15 lack of incentive to invest in housing if they're  
16 not seeing a direct benefit. So a question you  
17 might hear is why should I, a building owner, try  
18 to save my tenants money when I'm not paying  
19 their bill and when I don't accrue the benefit of  
20 that investment?

21 Programs like LIWP and SOMAH, which I've  
22 already mentioned, are really creatively  
23 addressing this problem through providing really  
24 robust technical assistance and deliberate  
25 design, a design that emphasizes the benefits

1 that are delivered to the whole building and to  
2 the tenants.

3           The utility programs that exist aren't  
4 able to address the building holistically because  
5 of how they've been designed. So they are tasked  
6 with delivering benefits to folks in their units  
7 and then, separately, the common areas of those  
8 buildings. And this gets into -- or this brings  
9 up a problem of metering and how we are able to  
10 aggregate the metering data for a building. So  
11 if you're a building owner, you might not have  
12 access to see just how much energy your residents  
13 are consuming. And I believe that the next  
14 presentation will get more into this problem for  
15 us.

16           Apart from the split incentive problem,  
17 another really significant issue in implementing  
18 programs here is addressing the financial -- is  
19 addressing the knowledge around programs that are  
20 available and incentives available for building  
21 owners. And this graph that I'm showing you from  
22 the CADMUS study in 2013 shows that a majority of  
23 market rate owners and rent assisted owners  
24 aren't aware of state programs or utility rebates  
25 that are available to them.

1           And one of the reason, I believe, for  
2 this is that there's actually a source of good  
3 financing options for them. So it's not that  
4 they have just ignored completely the incentives  
5 that are available, but that when asked -- when  
6 answering this question, they're saying there  
7 aren't programs that I can actually take  
8 advantage of that I know of.

9           So the problem can be overcome with good  
10 models. And we're seeing that in real-time with  
11 the implementation of WYWTH, with the  
12 implementation of SOMAH. But it's a problem  
13 that's compounded by the fact that these  
14 financial barriers are complex.

15           So earlier I alluded to the fact that the  
16 ownership structures for these properties have  
17 many different players. And with these several  
18 groups of stakeholders, they each hold veto power  
19 over financial decisions, and they each have  
20 different priorities that they might be trying to  
21 accomplish in different ways.

22           The current knowledge about how to sort  
23 of address this is to provide incentives and to  
24 provide larger incentives that allow them to skip  
25 past the multi-stage approval process. For



1 building owners, the ability to implement some of  
2 these programs really comes up front in the  
3 planning. If they can't navigate these programs  
4 easily and see that the savings are going to be  
5 worth even the time that they're investing in  
6 walking through them, they might skip them in  
7 favor of an easier way to raise revenue, which  
8 would be by just raising the rent, instead of  
9 focusing on reducing costs.

10           So I'm really gratified to see everyone  
11 in the room today and for the attention from the  
12 Commission on this issue because the challenges  
13 before us in addressing the expansion of clean  
14 energy really get to long-term health benefits.  
15 And I think that this is a piece that gets lost  
16 sometimes when we talk solely about energy  
17 efficiency savings or we talk about access to  
18 more solar megawatts.

19           And I think it's -- what I want to point  
20 out here is that there are a lot of experts  
21 across different state agencies that are thinking  
22 about the built environment and are thinking  
23 about the energy savings in a more holistic  
24 sense.

25           So the Oak Ridge National Lab did a study

1 of some of the federal energy efficiency programs  
2 and found that when we improve clean energy  
3 access, we actually achieve a large number of  
4 non-energy benefits. And the majority of those  
5 benefits came in the form of health benefits.

6           So earlier I talked about how folks who  
7 are living in low-income and multifamily housing  
8 could really benefit from sort of reduced thermal  
9 stress, both in heat and cold. They would see  
10 massive improvements in quality of life by being  
11 more comfortable in their homes. And you see  
12 those through improvement in prescription drug  
13 adherence, and also a reduced economic need for  
14 food assistance.

15           So today as we continue to hear from  
16 terrific experts across the board, I really want  
17 to encourage everyone to think about how we can  
18 move the status quo forward when we talk about  
19 treating low-income families here in California.

20           The question for me today is not how do  
21 we just address the entire multifamily sector,  
22 but how do we improve the lives of Californians  
23 that are living without adequate incomes that are  
24 making those tradeoffs that I mentioned before,  
25 the tradeoffs between energy, between housing,

1 food and medicine. And I think that we need to  
2 have the courage to commit to putting our best  
3 practices to work and drawing across all the  
4 knowledge that we have in the room already to set  
5 really significant targets in the next IEPR.

6 We already know that today the sector is  
7 vastly under served. And I hope that this Action  
8 Plan will take a bold stance on how to change the  
9 picture that I've shared with you today.

10 And now I'll take some questions, if you  
11 have them.

12 COMMISSIONER SCOTT: I had a question for  
13 you back on -- oh, my slides don't have -- this  
14 one doesn't have a number. It was the ownership  
15 of multifamily housing is complex. And you  
16 mention the difference between kind of market  
17 rate low-income and low-income. Could you tell  
18 us just a little bit more about that? It was a  
19 definition that you gave and it went by really  
20 fast, so I just want to make sure it's clear.

21 MR. SEVIER: Sure. I think the  
22 distinction I was trying to make was between what  
23 we often -- that the graph is labeled rent  
24 assisted and market rate. And I just didn't want  
25 anyone to think that this is market rate in the

1 same way that you might go out and find an  
2 apartment on Craigslist, say in the Bay Area, and  
3 you'll notice that rent is, you know, \$3,000 a  
4 month for a shoebox.

5           We're talking about market rate low-  
6 income, which is often really poor conditioned  
7 housing, so it's housing that might not be  
8 showing up in real estate listings. It's your,  
9 you know, friend's cousin's apartment in his back  
10 yard that's really his garage; right? It's stuff  
11 that is really uninhabitable, but because of the  
12 income levels that these folks are at, that's  
13 what they're left with.

14           COMMISSIONER SCOTT: Thank you.

15           COMMISSIONER HOCHSCHILD: I just wanted  
16 you to talk a little bit more about the sub-  
17 metering and how significant a challenge that is  
18 and what the benefits would be of getting that  
19 right.

20           MR. SEVIER: So I don't want to harp on  
21 kind of like the difference between sub-metering  
22 and master metering in these buildings, but  
23 really note that program design, when meant to  
24 address buildings holistically, are able to look  
25 at the energy use, both in tenant spaces and in

1 non-tenant spaces, like hallways, water heating,  
2 pools or otherwise; right? And that in the way  
3 that industrial and utility programs are set up  
4 today, they're required to treat them separately.  
5 So through better program design, we can achieve  
6 the savings that we know are out there because we  
7 see them in the Low-Income Weatherization  
8 Program. But the issue of that data collection  
9 in the current program structure is a big  
10 roadblock.

11 COMMISSIONER HOCHSCHILD: Thank you,  
12 Isaac.

13 All right, should we move on to Eugene  
14 Lee?

15 MS. RAITT: Thanks. So our next speaker  
16 is Eugene Lee from the Energy Commission.

17 MR. LEE: Good morning. My name is  
18 Eugene Lee and I'm the Residential Supervisor in  
19 Existing Buildings. I currently manage a small  
20 but brilliant team of energy avengers, I call  
21 them, in the Existing Buildings Office. This is  
22 a fabulous piece of work. I'm very proud of this  
23 76-page document. And bear with me as I try to  
24 fast forward very quickly of what the contents  
25 are.

1           Today, we'll be walking through the  
2 characteristics of the multifamily sector. I'll  
3 just breeze through it very quickly because we've  
4 already received some excellent information  
5 before, as well as the SB 350 implementation.

6           What is the CLIMB? And what are our  
7 goals today, and our next steps?

8           As we learned, there are three principle  
9 segments in the multifamily housing world. We're  
10 speaking of the deed restricted, serving low-  
11 income households, but we also have a market rate  
12 component that is actually two subsets, where  
13 they are inhabited by low- and moderate-income  
14 households, but also household incomes that are  
15 sufficient to meet the rent levels. But  
16 nonetheless, it should be recognized that within  
17 this housing stock there's probably an  
18 overburden, as we all know. And there's probably  
19 an overcrowding problem, also, within this  
20 segment.

21           These are some statistics, and  
22 recognizing about the energy burden, as well as  
23 the households and the age these points were  
24 previously made. We'll be talking about  
25 coordination quite a bit.

1           So although the multifamily housing is  
2 often deed restricted, I think we need to  
3 recognize that, also, you cannot actually deed  
4 restrict an energy burden. These households are  
5 very challenged.

6           As Mike explained, the guardrails of this  
7 study are fully contained within the SB 350  
8 implementation. It comes out of the  
9 Recommendation 1D (phonetic), to actually develop  
10 a comprehensive plan focusing on these improving  
11 clean energy opportunities.

12           So what is CLIMB? It's a great acronym.  
13 And I wanted to begin with just a quote of a very  
14 famous mountain climber, Muhammad Ali, who said  
15 this, "It isn't the mountains ahead to climb that  
16 wear you out, it's the pebble in your shoe."

17           Today our discussion is about talking  
18 about those pebbles, those obstacles, those  
19 things, those irritants that are really  
20 preventing us to succeed. You'll see in this  
21 slide that multi agencies must collaborate. And  
22 this slide recognizes the principle partner  
23 agencies that my staff and myself have partnered  
24 with and met one on one. This Action Plan the  
25 content of participating state departments. And

1 for that reason, that must be recognized.

2           The trail on this multifamily summit,  
3 it's old. It's been traveled by many smart  
4 professionals in this room. And it's been  
5 evidenced by other research and analysis efforts.  
6 This does not dismiss those efforts at all, but  
7 in these one-on-one meetings, we have seen  
8 renewed enthusiasm for a holistic approach to  
9 improving state programs. So instead of siloing  
10 programs by agencies, we seek to coordinate and  
11 ease that administrative and technical burden for  
12 the applicants.

13           We join together because we have a  
14 collective vision of these kind of benefits that,  
15 yes, clean energy resources for owners and  
16 residents of multifamily buildings needs to be  
17 improved, and there are benefits to distributed  
18 energy resources. Essentially, CLIMB is a  
19 collaborative and a collective vision of these  
20 benefits.

21           Today's purpose of the Climate Action  
22 Plan is to identify those early actions to  
23 improve those existing programs and lay out those  
24 data gathering and collaboration building that we  
25 have started to develop those long-term



1 solutions. Our aim is to be adept and very  
2 forward-thinking in this Action Plan and to keep  
3 climbing.

4           These are our five trail markers, so to  
5 speak, as we climb this, and they're reflected  
6 here. We're expanding coordination, recognizing  
7 the existing programs that are among us. Do we  
8 have a cohesive understanding of the multifamily  
9 market? And what are those lessons learned, so  
10 that we can recalibrate those existing programs  
11 and help us jettison to a future program design,  
12 examining very closely about identifying  
13 additional resources and the gaps and increasing  
14 the outreach awareness and access as previously  
15 stated. Allow me to walk through each of these  
16 individually.

17           Expanding the coordination. Our goal is  
18 to harmonize the professional voices and to make  
19 sense to the implementors and the beneficiaries,  
20 so that we understand that there's this  
21 coordination barrier. How do we actually  
22 qualify? What are the definitions and the  
23 language that we use for multifamily, or even  
24 low-income? So we leverage our current efforts  
25 and we align.

1           Number two, we're seeking to understand  
2 the multifamily market. We're developing, I  
3 emphasize, a cohesive understanding of the  
4 multifamily market, so that now we're framing  
5 ourselves into and statements and no longer  
6 either/ors. We're thinking of buildings and  
7 behavior, not buildings of behavior. We're  
8 connecting the dots. We're gathering data on  
9 understanding this multifamily sector.

10           I spoke of program design. And we're  
11 seeking to improve the existing and future  
12 program design, understanding that there are  
13 statutes and regs and guidelines and policies  
14 that bind programs. That's fine. However, our  
15 goal is how do we actually make these programs  
16 locally impactful, getting to the ground level of  
17 effectuating that change? How are these programs  
18 limited by geography? How are we examining the  
19 respective territories and how they serve  
20 disadvantaged communities in extreme climate  
21 zones, and those people who are living in those  
22 communities and rural areas?

23           It is a resource problem, so it's  
24 identifying the additional resources and the  
25 deployment opportunities. And it isn't just a

1 question of whether there's sufficient resources,  
2 but also understanding that we apply resources  
3 intelligently to fill the gap. What exactly is  
4 the unmet need? Again, we're designing with the  
5 and in mind, the  
6 A-N-D. We're looking at triggering events at the  
7 time of rescindication of low-income housing tax  
8 credit projects. How are we prioritizing the  
9 leverage of matched funding where sources are  
10 launched and available, but aren't necessarily  
11 connected together and woven together? And moving  
12 beyond an incremental approach to retrofits.

13           But education is critical. And our goal  
14 is to remove and correct the misunderstandings,  
15 the perceptions and biases by providing that  
16 education. This is what I call the human element  
17 of the Action Plan. And this recognizes and  
18 seeks to understand the low-income households and  
19 the disadvantaged communities. We understand  
20 that 54 percent of the low-income people use a  
21 primary language other than English. This is  
22 stated in our Barriers Study. How do we train  
23 and make a workforce accessible, and that also  
24 achieves the goal of consumer protection?

25           We understand there are challenges. I

1 think we can all agree in this room about that.  
2 We're onboard about coordination. But allow me  
3 to emphasize that and ask the question: Exactly  
4 what is our vision of what could be in the  
5 future? What can be improved? What would it  
6 look like?

7 Today, we are seeking feedback. We have  
8 the Action Plan available, but have we considered  
9 additional barriers? We have identified strategy  
10 timelines. Are they appropriate? Are they  
11 aggressive? Are they too relaxed? And allow me  
12 to emphasize, how are we -- are we doing enough  
13 working with local governments? We understand  
14 that state and local leadership, and we need to  
15 think statewide but act locally. And engaging in  
16 local governments and the local level is  
17 necessary in order for us to be successful.

18 Public comments are due this month on the  
19 13th. Our aim is to finalize the CLIMB Action  
20 Plan in August with a results workshop at the end  
21 of August, preparing ourselves for September 12th  
22 through 14th, the Global Climate Action Summit.

23 Thank you.

24 COMMISSIONER MCALLISTER: Thanks very  
25 much, Eugene. I wanted, first of all, to thank

1 you and your team. I know this plan is of  
2 interest to the Governor's Office and really  
3 across the board, and certainly is one of the  
4 sort of, I think, visible and important  
5 recommendations from the Barriers Study. And,  
6 you know, you and your team just jumped to this  
7 with full energy and open minds and really a lot  
8 of willingness to collaborate and listen, and I  
9 think it's reflected in the draft.

10           Having said that, you know, this is a  
11 tough nut to crack, as you've made repeatedly  
12 clear. And, you know, we need creativity, we  
13 need commitment, and we need long-term energy,  
14 really, effort to get there.

15           Let's see, I wanted to also just bring  
16 up, you know, the fact that -- really to exhort  
17 everyone here to think about how to prioritize,  
18 really focus on concrete steps and help us make  
19 this thing better. I mean, your comments are  
20 really going to go into a very willing process  
21 that, you know, we really want to make this plan  
22 better and as concrete and implementable as  
23 possible, be able to argue persuasively for the  
24 resources that it needs, and so I think that's a  
25 team effort. It's not just the Energy Commission

1 sort of putting that on our back and going  
2 forward, although that's a big part of it. It's  
3 also, you know, whoever we're trying to influence  
4 on this needs to hear from multiple parties that  
5 have some gravitas and are well informed. And so  
6 I think we -- it's, in that sense, also it's a  
7 team effort.

8           I want to point out, just from my own  
9 silo here, you all probably know that AB 802  
10 produced a regulatory process that ended up with  
11 a benchmarking program for multifamily and  
12 commercial buildings above 50,000 square feet.  
13 We have regs in place. That program is live and  
14 it will require multifamily, medium and large  
15 multifamily buildings to do a benchmarking as of  
16 June 1 of 2019, okay? 2018 is the commercial  
17 requirement, and then a year later, 2019 on June  
18 1, the multifamily requirement. So that's going  
19 to produce a beautiful stream of information  
20 about our multifamily household stock through  
21 Energy Star Portfolio Manager, which many of you  
22 may be familiar with.

23           So, for example, it would be wonderful if  
24 stakeholders, you know, you all here and others  
25 could put on your thinking caps and say, okay,

1 well, gosh, what could we do with that data? You  
2 know, what -- you know, how can we use that data  
3 to produce program ideas, to produce good policy,  
4 to inform the legislature, to inform us here at  
5 the Energy Commission and the Public Utilities  
6 Commission, really sort of use it for good. And,  
7 you know, the disclosure piece of this comes a  
8 year later

9           So, you know, in 2020 on January 1, all  
10 the multifamily building owners that have been  
11 subject to the requirement for benchmarking will  
12 see their buildings -- you know, essentially look  
13 at the map of all these buildings and you'll have  
14 a number floating over your building. Well,  
15 that's, you know, that's potentially a motivation  
16 for some investment in those buildings. Well,  
17 how do we leverage that disclosure moment? You  
18 know, what does that come along with in terms of  
19 outreach and education? What levers can we sort  
20 of pull alongside both the disclosure  
21 requirement -- or the benchmarking requirement  
22 and the subsequent disclosure?

23           So we want to be impactful. And you all  
24 know this market better than we do, and so how  
25 can we make sure that we're just pushing in the

1 right ways and in the directions and with the  
2 right level of force, you know, carrots and  
3 sticks and all that good stuff, so we can get  
4 some real results? You know, the econ policy  
5 demands it, and also our justice concerns.

6 So anyway, I wanted to just mostly thank  
7 Eugene and the team, but also say that this is a  
8 first important step and we really need a better  
9 collaboration to make it better, so thanks.

10 COMMISSIONER HOCHSCHILD: Any other  
11 questions of comments for Eugene?

12 I just want to say, great acronym, CLIMB.  
13 We have some terrible acronyms in state  
14 governments, and this is -- CLIMB is really well  
15 done, so, yeah, I know. All right, thank you,  
16 Eugene.

17 MR. LEE: You're welcome.

18 MS. RAITT: Thanks. So good segue.

19 The next presentation is on using data to  
20 better understand multifamily buildings, and it's  
21 a joint presentation with Erik Jensen of the  
22 Energy Commission and Renee Daigneault from Los  
23 Angeles Better Buildings Challenge.

24 MR. JENSEN: Good morning everyone. My  
25 name is Erik Jensen. I work here in the Existing



1 Buildings Unit. I led the development of our  
2 benchmarking regulations which went into law on  
3 March 1st and I'm working on the implementation  
4 of those regulations now. I'm going to talk  
5 briefly about Assembly Bill 802, what that did  
6 for whole building data access in the state. And  
7 I'll talk a little bit about the requirements of  
8 the benchmarking regulations. And then  
9 someone -- Renee is going to talk specifically  
10 about the local benchmarking program that  
11 happened at City of Los Angeles.

12           So Assembly Bill 802 had two -- had a  
13 variety of provisions related to energy. There  
14 are only two that are relevant in this context.  
15 First of all, it required utilities to provide  
16 whole building energy use data upon request of a  
17 building owner or owner's agent. And we'll get  
18 into the specific buildings to which this applies  
19 a little later, but this is a big deal. So with  
20 a few caveats regarding customer permission,  
21 which I can get into later, it definitively says  
22 that utilities need to provide energy use data  
23 upon request to a building owner, in most cases  
24 without requiring individual customer permission.  
25 So that's an important step in getting building

1 owners' information about how their buildings are  
2 operating.

3           Secondly, it directed the Energy  
4 Commission to create a program for benchmarking  
5 and reporting large buildings and publicly  
6 disclosing information about those buildings.  
7 And so these are two distinct but related  
8 provisions.

9           So covered buildings are the buildings  
10 for which utilities are required to provide  
11 energy use data upon request. There's no square  
12 footage threshold for these buildings, so they  
13 can be of any size. And this applies to  
14 buildings with no residential utility accounts or  
15 five or more residential utility accounts. So  
16 again, no square footage threshold. This is the  
17 entire set of buildings for which energy use data  
18 is required. And again, the building owner,  
19 whether it's for participating in the  
20 benchmarking program, or for any other reason,  
21 the building owner has access to the energy use  
22 data.

23           A subset of covered buildings are  
24 disclosable buildings. Those are the buildings  
25 for which building owners are required to report

1 to the Energy Commission and for which we will,  
2 again, beginning next year start publicly  
3 disclosing the data, and those are buildings  
4 larger than 50,000 square feet with either no  
5 residential utility accounts or 17 or more  
6 residential utility accounts.

7           And let's see, I think I -- there we go.  
8 So here are the dates for the reporting and the  
9 public disclosure. Commercial reporting began  
10 this year. June 1st is the regulatory deadline  
11 for that, and that's an annual reporting  
12 requirement to the Energy Commission. And public  
13 disclosure will begin next year. Residential  
14 buildings begin one year later for both. So  
15 reporting will start next year and public  
16 disclosure will begin in 2020 for the residential  
17 buildings.

18           So this provides sort of two separate  
19 levels of information. The first is for the  
20 covered buildings, building owners can get their  
21 information, participate in efficiency programs  
22 or, again, use that information for whatever they  
23 want to. For the disclosable buildings, which is  
24 the subset of the covered buildings, there will  
25 be public disclosure. And so that provides this

1 information to prospective owners, prospective  
2 tenants. They can get -- have better information  
3 about buildings they're considering purchasing or  
4 moving into. It provides -- and so we're really  
5 hoping that will sort of motivate the market to  
6 improve buildings voluntarily. There are no  
7 requirements in this benchmarking program beyond  
8 reporting to the Energy Commission.

9           So some of the local programs often  
10 require audits, retrocommissioning, and then even  
11 improving the building coming up in New York  
12 City, as an example, but this one stops at  
13 reporting to the Energy Commission. And so  
14 that's -- the data access provision for the  
15 covered buildings is what local programs can  
16 build upon when they -- if they want to have a  
17 local benchmarking program that exceeds the  
18 requirements of the state program, and Renee is  
19 going to talk about that next.

20           Here is contact information for me and  
21 our program in general. If you've got questions  
22 about compliance, what's required, please use the  
23 bottom email address there. That's for our  
24 hotline. If you've got more sort of policy-type  
25 questions or questions about the background of

1 the program, please contact me at the information  
2 up above.

3 And with that, I will hand it over to  
4 Renee.

5 MS. DAIGNEAULT: Okay, good morning.  
6 First, I'd like to thank the Commission for the  
7 opportunity to share this information. I'm going  
8 to be providing some background on the  
9 benchmarking ordinance in Los Angeles, which is  
10 now in its second year.

11 So my name is Renee Daigneault. I'm the  
12 Program Operations Manager for the L.A. Better  
13 Buildings Challenge. And we staff the L.A.  
14 Energy and Water Efficiency Resource Center,  
15 which is a utility-funded effort to help building  
16 owners comply with our ordinance.

17 So the L.A. ordinance has three main  
18 components. It requires annual benchmarking of  
19 whole building data. There's also a performance  
20 component which starts in 2019. And then there's  
21 a public disclosure element, and we've already  
22 begun to publicly disclose data from 2016, which  
23 was the first year of compliance.

24 So buildings located in the City of Los  
25 Angeles and the LADWP service territory are

1 subject to the L.A. ordinance. There are a few  
2 exemptions by building type, and also exemptions  
3 by calendar compliance year based on the building  
4 status, which are listed on that slide.

5           When it comes to benchmarking for the  
6 L.A. ordinance, there are some specifics that  
7 apply. So the benchmarking results will impact  
8 the performance requirement that starts, as I  
9 said, in 2019. And our ordinance requires that  
10 building owners include whole building energy and  
11 water data.

12           And then lastly, our ordinance includes  
13 structured, as well as subterranean parking.

14           So this chart here outlines the  
15 performance phase. As you can see, that's sort  
16 of a presentation in itself. But essentially,  
17 buildings need to either demonstrate that they  
18 are already efficient or that they're on a path  
19 to efficiency. And if they achieve Energy Star  
20 certification, then they are exempt from the  
21 energy component of the performance requirements.

22           The City of L.A. has applied for an  
23 exemption from AB 802. So if that is granted,  
24 then building owners in L.A. will be just  
25 reporting to the city. The city will report onto

1 the state. The City of L.A. is also working with  
2 the state to coordinate on a few items I've  
3 listed here, the definition of a building  
4 exemption, as well as the data transfer process.

5           So as I mentioned, we already have some  
6 data that's available. It's published on Mayor  
7 Garcetti's open data platform at the link there.  
8 And if you search for EDEWE (phonetic) you'll be  
9 able to locate that data set.

10           This example of displaying benchmarking  
11 data comes from Denver. We're looking at all  
12 different types of ways to make this data easier  
13 for the public to access as we move through  
14 future years. And this map actually gives the  
15 user the ability to click on a specific dot, each  
16 dot is a building, and see more characteristics  
17 about that building. So we're looking down the  
18 road, as well, to make sure that this data is as  
19 easy as possible for people to access and make  
20 decisions from.

21           So next I'm going to cover the resources  
22 that we've developed to help owners comply with  
23 the ordinance. They're listed here on this slide,  
24 and then I'm going to go through a few of them in  
25 greater detail.

1           The main -- the largest resource that  
2 we've developed is a benchmarking guide. We  
3 worked closely with the utilities, as well as the  
4 city, to put this together. So this guide  
5 includes screenshots of the entire compliance  
6 process. We found Energy Star is not intuitive  
7 to people who have not used it before, and so the  
8 screenshots are really necessary to get people to  
9 a place where they can sit down and complete  
10 their compliance themselves.

11           This is the table of contents from the  
12 guide. So just to give you sort of a general  
13 outline of what's contained in there, the most  
14 sort of critical component for building owners to  
15 read through when they read through this is to  
16 determine whether or not they have access to  
17 whole building data. If they have access to  
18 data, they can manually upload it. If they  
19 don't, they need to go through the utility  
20 request process. So we have specific  
21 instructions for each of those scenarios. This  
22 is particularly significant for multifamily  
23 buildings as the tenants are nearly always billed  
24 directly, so the owner does have to go through  
25 the data request process in order to report whole



1 building data.

2           So to help owners comply that don't want  
3 to do the benchmarking themselves, we've created  
4 a service provider directory. So this includes  
5 local vetted third-party vendors that are  
6 available to assist owners. Many owners are  
7 interested in having a third party provide this  
8 service, and so this has been -- this has worked  
9 really well in terms of providing that resource  
10 to owners that don't have the internal resources  
11 to complete the work.

12           For owners that do want to complete the  
13 benchmarking themselves, they refer to -- we  
14 refer them to the benchmarking guide. And then  
15 after they've uploaded all of their data, we  
16 offer a complimentary confidential data review.  
17 So what we do during that review is we ensure  
18 that the minimum data requirements have been met  
19 to comply with the ordinance. We also verify  
20 that issues that were identified by the data  
21 quality checker were properly resolved. And then  
22 lastly, we look at some of the data points in  
23 Energy Star that are required to pursue Energy  
24 Star certification. That will help the customer  
25 in forecasting the performance phase compliance

1 options. So we want to prepare them for Energy  
2 Star certification, so they can accurately see  
3 where their building is performing.

4           So for customers that go through the  
5 benchmarking guide, maybe decide not to call a  
6 service provider and still have questions for us,  
7 we have two ways that they can contact us, either  
8 by phone or through email. And this is an  
9 example -- this is an example of the data flow  
10 when customers select the contact us form. So  
11 through our website, they complete the form,  
12 provide some basic information about the  
13 building, and then they select the reason they're  
14 requesting assistance.

15           When they complete that form, they get a  
16 custom auto response based on the reason that  
17 they've contacted us. So if they're just looking  
18 for the reporting link or another piece of --  
19 administrative piece of information, they receive  
20 that immediately. And then our staff follows up  
21 with them within one business day. The system  
22 also generates a case in Salesforce so that we  
23 can track each inquiry and make sure that we  
24 respond to it and the issue is resolved.

25           Customers can also contact us by phone.

1 When they contact us by phone, they get an  
2 automated voice response system first, so they'll  
3 enter some information about why they're  
4 contacting us. We'll direct them to resources.  
5 If their resources don't answer the question,  
6 then they're able to leave a voicemail which  
7 generates a case in Salesforce, and then our  
8 staff follows up with them within one business  
9 day. We track the outcome of these calls, so  
10 that we can see what types of questions and use  
11 that information to inform the resources where we  
12 want to invest time and effort.

13           So this slide is intended to outline the  
14 importance of determining which stakeholder  
15 answers which type of question. Between the  
16 utilities, the city, and then our organization,  
17 there's a few places that the customers have to  
18 go for certain types of inquiries. So it's  
19 really important to send the customer to the  
20 right place so that they get a response in an  
21 efficient time frame.

22           So to summarize, we're working towards  
23 June 1st, 2018. This is our second year of  
24 collecting this data, so we have lots of reports  
25 coming in this Friday for buildings that are over

1 50,000 square feet. The performance phase of our  
2 ordinance begins in 2019. And really our next  
3 phase is to focus on converting the benchmarking  
4 interactions that we've had into project  
5 discussions, so that we can move further towards  
6 the goal of saving energy and water.

7 So that is the conclusion of my  
8 presentation. Our website is located there.  
9 Happy to answer any questions. And you can also  
10 find all of the resources that I mentioned on our  
11 website.

12 COMMISSIONER MCALLISTER: Oh, yeah. Go  
13 ahead.

14 COMMISSIONER SCOTT: Thank you, Renee.  
15 This is great. I had a question for you.

16 You talked about the benchmarking guide  
17 overview and it kind of lists the different  
18 things that a person or the building owner needs  
19 to do, and also that there's a service provider  
20 directory.

21 Do you have a sense of, if you're a  
22 building owner and you get on the page and you're  
23 trying to get all this information on your own,  
24 how long does that take? Is that like a really  
25 big effort for a building owner, or is it

1 something they've mostly got and can just get on  
2 there? And then for the third-party vendors, is  
3 that something that is a relatively small cost  
4 for building owners, or is that something that's  
5 a surprisingly large fee? I'd just love to get a  
6 sense of that.

7 MS. DAIGNEAULT: Sure. Sure. And  
8 this -- yes, we've got lots of datapoints on this  
9 one.

10 Building owners that are already using  
11 Energy Star Portfolio Manager or are familiar  
12 with data tracking are able to get in there  
13 pretty easily. For the first round of the  
14 ordinance, which effected buildings 100,000  
15 square feet or greater, it was relatively easy.  
16 Many of those buildings were already being  
17 benchmarked.

18 For buildings that are not -- have never  
19 done any benchmarking, what is Energy Star, it is  
20 pretty time consuming for people. Many, many  
21 times it's because Energy Star has so many  
22 options. So they go in and if they're not  
23 following the guide closely, they think they have  
24 to fill out all of the information  
25 comprehensively, which is not required by the

1 ordinance. So we're always referring people back  
2 to the guide, saying this is the only information  
3 that's required.

4 So, you know, for people that aren't  
5 familiar with this system, it can be time  
6 consuming. And a lot of it, is the vocabulary.  
7 They're not sure where to look on their bill.  
8 It's just sort of a different set of -- different  
9 set of guidelines than they've seen before.

10 And then to answer your questions  
11 regarding the service providers, always hard to  
12 give any sort of number but, you know, we see  
13 around \$1,000 per building. Some are a little  
14 lower, some are a little greater. Sometimes  
15 their packaging that with other types of  
16 services. But, you know, it's not \$10,000, and  
17 it's generally not \$300. It's usually about a  
18 \$1,000, in that range.

19 COMMISSIONER SCOTT: Thank you.

20 COMMISSIONER MCALLISTER: I had a comment  
21 and a question.

22 So I guess my question first, really  
23 building on what Commissioner Scott said, you  
24 know, how much -- so this is a statewide program;  
25 right? And I want to give you guys kudos for

1 getting ahead of it. And I think, you know,  
2 cities have always been at the forefront of  
3 benchmarking, and it really is sort of,  
4 naturally, a city-scale thing, certainly, to  
5 begin. And we've been able to build on that to  
6 make it a statewide effort. And I think -- and  
7 that's the first one in the country and that's --  
8 it's, I think, the next natural step.

9           We definitely don't want to, you know,  
10 get in the way of the cities. And then,  
11 certainly, you have the ability to go further  
12 than say a statewide kind of minimum requirement  
13 and can build on it, learn from it and do new and  
14 innovative things, which we'll then be able to  
15 learn from. So I think that ecosystem is really  
16 healthy, just, you know, like we do with building  
17 codes and other efforts like that.

18           So any lessons that you have in sort of  
19 the outreach and kind of the education and how  
20 many resources you had to dedicate to this as the  
21 city, versus kind of counting on, you know,  
22 partners out there in the world to help educate  
23 the population of building owners that are  
24 subject to the requirement. Any sort of learning  
25 that might be instructive for us here?

1 MS. DAIGNEAULT: Sure. Well, the City of  
2 L.A. developed a covered buildings list based on  
3 data from the County Assessor's Office. So they  
4 provided notification to those owners six months  
5 in advance. And during the first year, they  
6 provided multiple notifications to let people  
7 know. So because it's a new program, we did find  
8 that the compliance rate is highly correlated to  
9 the number of reminders that go out. Sometimes  
10 the reminder goes to accounting. Sometimes they  
11 say it's something from the city. They don't  
12 understand what it is.

13 So, you know, notifications to covered  
14 buildings was really critical, as well as we  
15 worked with a lot of partner agencies, so  
16 building ownership association, you know, any  
17 place where owners congregate, getting the word  
18 out there. The official notification is  
19 generally where they find out about it, but we  
20 also relied on sort of industry partners to  
21 spread the word.

22 And then, you know, working, we created  
23 the service provider directory, so working with  
24 the consulting community to make sure that they  
25 were up to speed and they could provide the



1 service in a meaningful way and actually -- you  
2 know, when someone pays a firm to help them be in  
3 compliance, we want them to be in compliance, we  
4 want them to give accurate information.

5           So it's certainly an ongoing process.  
6 You know, in year two, we're still -- there are  
7 some owners that are just complying now, and so  
8 they're a year late. So I would say as many  
9 communication channels and partners as you can  
10 reach out to, and then making sure that  
11 notifications to a list of covered buildings was  
12 helpful for the City of L.A.

13           COMMISSIONER HOCHSCHILD: Any other  
14 questions? Okay.

15           Thank you so much.

16           MS. DAIGNEAULT: Thank you.

17           MS. RAITT: Thanks, Renee and Erik.

18           And so next, I'd like to invite our next  
19 panel, Program Evaluation and Data on the  
20 Multifamily Market to come to the front places  
21 where we have places for you.

22           So just an announcement that,  
23 unfortunately, Tami Rasmussen from Evergreen  
24 Economics wasn't able to join us today. So the  
25 moderator for us is Martha Brooks from the Energy

1 Commission.

2           So go ahead, Martha.

3           MS. BROOK: Good morning, Commissioners  
4 and guests from the Public Utilities Commission.  
5 My name is Martha Brook. I'm an Adviser to  
6 Commissioner McAllister, and I'm moderating this  
7 session.

8           I'm going to ask the panelists to  
9 introduce themselves after I introduce the  
10 session. And then we're going to ask the  
11 panelists a small set of questions that hopefully  
12 you'll discuss amongst yourselves with some input  
13 from the Commissioners and guests. And then for  
14 the remaining part of our panel, we'll ask the  
15 workshop attendees to come and ask additional  
16 questions or provide information that you have  
17 that is relevant to our panel.

18           So our first panel is on Program  
19 Evaluation and Data in the Multifamily Market.  
20 And the concept for this panel is that better  
21 collection, sharing and aggregation of data are  
22 needed to track multifamily buildings, associated  
23 GHG emission reductions and other benefits. This  
24 includes incorporating building data-driven  
25 metrics in the program design, some of the things

1 we heard about this morning, considering non-  
2 energy benefits into analysis and cost  
3 effectiveness requirements, and just, you know,  
4 data needed to plan projects and to identify  
5 savings opportunities.

6 So why don't we just go start with you,  
7 Stephanie?

8 And then I'm going to actually introduce  
9 Tami at the end. She did provide slides and  
10 talking points, so at least we'll know who Tami  
11 is. And she can, hopefully, you know, add her  
12 comments into the docket, you know, once she's  
13 off of jury duty.

14 MS. CHEN: Thank you. Thanks, Martha.

15 Good morning everyone. Okay, slide  
16 three. Thank you.

17 Thanks so much. Thanks, everyone, for  
18 joining us today. My name is Stephanie Chen and  
19 I direct the energy equity work at the  
20 Greenlining Institute. We are a racial justice  
21 advocacy organization focused on creating better  
22 economic opportunities for communities of color.  
23 And, of course, energy efficiency is critical for  
24 that, and distributed energy resources overall  
25 are critical for achieving economic equity, not

1 just for monthly bill savings, but also for the  
2 more intangible, less direct aspects of quality  
3 of life that then turn around and lead to either  
4 economic success or lack thereof.

5 (Colloquy between panelists.)

6 MS. BROOK: Oh, yeah, opening comments  
7 would be great.

8 MS. CHEN: Great. Thanks. So a couple  
9 of points that I want us to think about on this  
10 topic, one just generally, thinking about how  
11 these programs are rolling out in the long term,  
12 and thinking about how -- the way that we  
13 evaluate programs and the way that we design the  
14 metrics by which we're evaluating programs will  
15 lead to better program design moving forward.  
16 This isn't just a sort of once around the block  
17 circle. This is a we're going lap after lap kind  
18 of circle.

19 So I think one of the things that's  
20 really important to think about is not -- Eugene  
21 talked about buildings and behaviors. And we  
22 need not only to track the building metrics, but  
23 also the qualitative metrics around behaviors,  
24 around straight up customer satisfaction, around  
25 how do folks feel about the investments that

1 they've made, that have been made on their  
2 behalf? Does it make them more likely to change  
3 behaviors, to make additional investments?

4           As we're thinking about adoption, what's  
5 really going to move the needle for low-income  
6 folks who are spending disproportionate amounts  
7 of their time thinking about all of the different  
8 stressors that Isaac was talking about this  
9 morning, we really need to make sure that clean  
10 energy is a good experience for folks in the  
11 things that matter most to them every day, not  
12 just in the things that matter most to us every  
13 day, which is clean energy. And that's really  
14 critically important for low-income folks,  
15 particularly in environmental justice  
16 communities. But when you're thinking every day  
17 about can I afford to pay the bills, can I afford  
18 to feed my kids, we've got to meet folks where  
19 they're at. And I think that having the right  
20 metrics around qualitative customer experiences  
21 will help us get there.

22           And I think the second thing that we  
23 really need to consider lies outside of the scope  
24 of energy burden and really gets into concerns  
25 about rent, and particularly in this housing

1 market, concerns about displacement.

2           There was a conversation earlier from  
3 Isaac's presentation about the difference between  
4 rent restricted or rent assisted low-income  
5 properties, and then the market rate low-income  
6 properties. And not only are those really, quite  
7 frankly, often times substandard housing at  
8 cheaper rates, but tenants that are in those  
9 properties are constantly at risk of being  
10 displaced from those properties when their  
11 landlord thinks I could make some more money off  
12 of this unit.

13           So I think that consideration is one that  
14 we really need to -- it's a very narrow needle to  
15 thread, but we need to make sure that the  
16 benefits that we are delivering are going to low-  
17 income tenants, not just to low-income buildings.  
18 And those are not going to happen automatically,  
19 particularly in this rental climate. So I think  
20 that's one thing that I really want to call on,  
21 on the Commissioners, as well as everyone in the  
22 room, to think about.

23           MS. MILET: Hi. Thanks for having me  
24 here today. My name is Meredith Milet. I'm an  
25 epidemiologist at the California Department of

1 Public Health. I'm in the Climate Change and  
2 Health Equity Program which is in our Office of  
3 Health Equity. And I'm coming more from the  
4 perspective of co-benefits, specifically health  
5 and how we might be able to track those or add  
6 that into the data and evaluation component.

7           So I think that health is being affected  
8 by these energy issues in four ways that I see.  
9 One is the one that everyone thinks of the most,  
10 which is if you switch to clean energy, you  
11 improve air quality and that affects health, and  
12 that's really important and we should talk about  
13 tracking that. But as Isaac brought up, there's  
14 one that doesn't get as much play, and that is  
15 that there are health benefits from energy  
16 efficiency upgrades and programs.

17           There's a couple national systematic  
18 reviews that have shown this, shown the data on  
19 that, have shown improved overall health,  
20 improved respiratory health, allergies, decreased  
21 headaches, improved blood pressure, and better  
22 mental health after these types of energy  
23 efficiency programs. And the benefits are the  
24 greatest among people with preexisting health  
25 conditions. And people with low incomes are the

1 most likely to have those preexisting health  
2 conditions.

3           And another way, which was already talked  
4 about, is energy insecurity. Like people said a  
5 few times, if you're choosing between paying for  
6 your energy or for your prescriptions or your  
7 healthy food, that is an issue for health.

8           And lastly, I think there's also, in  
9 terms of evaluation of the program in general, if  
10 there's an element of workforce development,  
11 people being employed, and who might not even be  
12 receiving the clean energy, that is still a  
13 benefit. If people have employment and have  
14 higher incomes and maybe change their poverty  
15 status, that has a big benefit for health, as  
16 well.

17           I wanted to spend just a few seconds  
18 talking about how Contra Costa County has a pilot  
19 program where they're connecting home visiting  
20 nurses who are there for health reasons with  
21 energy efficiency programs. That seems simple,  
22 but it takes effort, you know, to teach those  
23 home visiting nurses about the energy efficiency  
24 programs and then put a system in place for the  
25 people that most need to be referred to programs



1 like LIWP and LIHEAP. And the county is actually  
2 giving assistance for that. And Department of  
3 Public Health is about to put out a guideline  
4 document to help other jurisdictions put together  
5 similar programs.

6 And lastly, I just wanted to say that in  
7 terms of data and evaluation, there are a lot of  
8 health data out there. There's a lot of  
9 limitations to them, but I see that it's really  
10 worth exploring.

11 And there are a few opportunities, and  
12 one of those is tracking, and like I said,  
13 evaluation, like what can we quantify what have  
14 been the health outcomes of these programs? But  
15 also, I think there's an ability to try to use  
16 these programs as a way to fill a gap in the  
17 data. You know, can we try to figure out who are  
18 being served and what kind of chronic conditions  
19 they have or what are some of the barriers that  
20 are getting in the way of doing some of the  
21 energy efficiency upgrades that are related to  
22 health? Like do they have asbestos or lead paint  
23 or mold and they can't get the energy efficiency  
24 upgrades? And so those things are addressed.

25 And that's really the health view.

1 Nancy?

2 MS. SUTLEY: Good morning. Nancy Sutley.  
3 I'm the Chief Sustainability Officer at the L.A.  
4 Department of Water and Power. And I had a  
5 couple of slides. I wanted to talk a little bit  
6 about our Equity Metrics Data Initiative, which  
7 was approved by our board in 2016.

8 Go to the next slide.

9 The Equity Metrics is really trying to  
10 bring together data that we have, both about our  
11 demographics-geographic information and where our  
12 programs are to try to understand how everyone  
13 across Los Angeles is experiencing our programs.  
14 And so we look over a number of different  
15 categories of reporting, including some of our  
16 customer rebate and customer incentive programs.

17 And the purpose of this is really to --  
18 not just to report on goals, but also to let us  
19 look at, you know, a kind of granular level at  
20 how we're doing and help the department to  
21 prioritize our efforts and the distribution of  
22 our programs across our customer base in a more  
23 equitable way, and help us also to understand the  
24 effectiveness of our programs, about outreach,  
25 qualifications for program participation,

1 customer ease of use, and a whole bunch of other  
2 things that we're looking at, and trying to make  
3 sure that we understand both the current state of  
4 our programs and how we can improve them to make  
5 sure that they're more equitable.

6           So if you go to the next slide, this is  
7 just an example of how this data has been  
8 reported. This is looking across our customer  
9 rebate programs, so a number of different  
10 programs overlaid over CalEnviroScreen and at a  
11 zip code level. And so you can see program  
12 participation across the city, so it's the sense  
13 of kind of a heat map to help us understand who  
14 is benefitting from our programs and how so that  
15 we can better refine our programs and make sure  
16 that they're reaching everyone across the city.

17           So we're continuously updating the data  
18 and over a number of measures that we continue to  
19 refine that reporting, monitor and measure  
20 overall performance, you know, aligned with our  
21 metrics targets, and to identify, you know, any  
22 places that we can add or modify, establish  
23 metrics and make sure that they are tracking what  
24 we would like them to track. And then finally,  
25 really to, sort of at a policy level, to make

1 adjustments and changes to our programs to ensure  
2 that they're reaching everyone across the city in  
3 an equitable way.

4           So, for example, we have funded for a  
5 number of years community-based organizations to  
6 help us do outreach around our Energy Efficiency  
7 and Water Conservation Program. And this year's  
8 results of the -- what we've understood is a  
9 result of the Equity Metrics Initiative, we've  
10 added money in there to ensure that we're  
11 targeting underserved communities. So we're  
12 looking again across all of our programs to see  
13 if we can improve them and to deliver them in a  
14 more equitable manner.

15           MS. SUTTER: Good morning. My name is  
16 Mary Sutter. I'm with Grounded Research and  
17 Consulting. I was brought in. I think I'm very  
18 happy to be here. I have 25 years experience in  
19 evaluating energy efficiency programs in  
20 California and around the nation.

21           And so I was sitting here trying to  
22 figure out, what is it that I could actually, you  
23 know, help folks understand? And I kind of  
24 reverted back to this metrics. I think  
25 everybody's talked about, you know, what they

1 evaluate, what metrics that they look at. And  
2 this may be something that you guys have heard of  
3 before, but for me, and the way that when I've  
4 thought about evaluation, and especially metrics,  
5 there seem to be kind of two flavors. And  
6 there's a metric that is perhaps more oversight  
7 of a program. It is kind of what I would call  
8 the output of a program. It's tracking things,  
9 like the number of buildings treated within ESA,  
10 or even the percent of disadvantaged community  
11 participation. That is something that's saying  
12 this program is going in here and causing these  
13 changes. These are kind of the touches.

14           The second kind of metric that I've seen  
15 and had people use are outcome metrics. And  
16 these are the ones that I've also seen --  
17 policymakers are much more interested in  
18 outcomes. They want to know if the things that  
19 are happening are making the changes that they  
20 expect to see. Those are things like the  
21 savings, the energy savings. You know, health  
22 changes in this treated population, is it making  
23 a difference? If you get treated, are you really  
24 going to be seeing some of these changes? It  
25 sounds like Meredith is saying, you know, these

1 things are known. And is the energy cost burden  
2 that these multifamily homes have being reduced?  
3 You know, those are outcome metrics.

4 I will say, also, when people say  
5 metrics, it's not necessarily a single thing. I  
6 tend to break these into kind of four different  
7 areas. One is a statement of where is that  
8 you're looking at? We're looking at buildings  
9 treated for this metric. But really, to have a  
10 good metric, you have to have a known baseline.  
11 You have to say, okay, we are starting here.  
12 This is kind of where we're at. And you also  
13 have to have kind of specific targets for change.  
14 And those targets have to have a timeline  
15 associated with them.

16 So if you have a metric that doesn't have  
17 a known baseline that doesn't necessarily have  
18 specific targets or have an associated timeline,  
19 you may have a metric that's not going to be as  
20 useful for you as you may want.

21 The other things I would say about  
22 metrics is they are best if they have the ability  
23 to put their data in context. And I will say  
24 that kind of one of the things that Nancy was  
25 showing is that it had -- this is where our low-

1 income family reside. And so it allows you to  
2 understand whether or not what you're looking at  
3 and what is happening is good or bad. An example  
4 being if you have as a metric the number of  
5 buildings treated, which is sometimes, you know,  
6 it is definitely a good metric to understand if a  
7 program is doing what it's doing, but you don't  
8 know 10,000 buildings is good. Is it good? Is  
9 it bad? Is it -- you know, how many are they  
10 supposed to be putting in place?

11           So if you can put that metric in context  
12 by having, perhaps, a percent of the population  
13 that is being covered. And especially with  
14 something like this, to me anyway, if you can do  
15 accumulative percent over time, that really helps  
16 to understand that we are reaching 40 percent of  
17 our buildings, we are reaching 60 percent of our  
18 buildings.

19           And then the last thing I will say as an  
20 evaluator, as a person who's been involved with  
21 some of these metrics, it's not costless.  
22 Really, to put in place a metric and understand  
23 and be able to track that over time takes effort.  
24 It takes costs. And because of that, I often  
25 suggest that you come up with a few metrics that

1 are really important, and they can be proxy for  
2 what, you know, types of choices and decisions  
3 that you need to make and really put the effort  
4 behind those, but not necessarily -- more is not  
5 necessarily better.

6           That's my point.

7           MS. BROOK: Great, so thank you. That  
8 was a great, great introduction to the four of  
9 you ladies.

10           And I'm going to -- I am not going to try  
11 to introduce Tami, but she did leave me some  
12 slides.

13           And are you able to pull those up,  
14 Heather?

15           MS. RAITT: Sure.

16           MS. BROOK: So I just want to introduce  
17 this into the panel so that everybody in the room  
18 can think about it, just like they've thought  
19 about the last few minutes of the introductions.  
20 And then, also, there might be some really good  
21 reference materials that will follow-up with our  
22 comments.

23           So here's what Tami was going to talk  
24 about in her first introduction. It's basically  
25 two different studies that Evergreen Economics



1 has been involved in, in like the 2014 to 2016  
2 period. One was an income needs -- Low-Income  
3 Needs Assessment, and another one was a  
4 Multifamily Processes Evaluation.

5           This slide here is from the Low-Income  
6 Needs Assessment. And I think the takeaway from  
7 this slide is low-income is not exclusive to  
8 multifamily. There's low-income in single-family  
9 rental communities, and there's low-income folks  
10 who own single-family buildings. And their  
11 energy burden is all -- they're all -- they all  
12 have significant energy burden. And, in fact,  
13 when you adjust for housing subsidies, medical  
14 assistance and things like food stamps,  
15 multifamily renters actually look a little bit  
16 better than low-income populations that own their  
17 own single-family residences.

18           Those numbers in my like engineering  
19 brain all look the same to me. You know, they're  
20 3.9 percent and 4.4 percent, so it's not like  
21 huge differences. But I think the point is that  
22 we have to be careful when we're thinking about  
23 low-income, that we're not just sort of having  
24 this silo about multifamily buildings.

25           So I guess to your point that you already

1 made, we have to talk and think about the people  
2 living in these dwellings and their situations,  
3 and that's not really siloed into one specific  
4 building type.

5           One of the reasons that these metrics  
6 look a little bit differently is that multifamily  
7 buildings are different than older, single-family  
8 dwellings. They typically use less energy.  
9 They're smaller and they're built differently.  
10 They don't have attics that have -- you know,  
11 that really, basically, generate a lot of cooling  
12 load, like the single-family dwellings we've been  
13 focused on in the code for the last 20 years.  
14 But they still have, you know, significant energy  
15 burdens, but there's some variety across this  
16 low-income sector.

17           The next slide please.

18           Other takeaways from these two studies,  
19 the Low-Income Needs Assessment, the needs vary  
20 by climate region. So, you know, the low-income  
21 in the mountain communities is different than the  
22 desert, or to the extent that they can still live  
23 along the coast in California, the coastal low-  
24 income communities and population groups have  
25 unique circumstances. They have -- the focus of

1 these households are broad. They first have to  
2 deal with paying their bills, but they are  
3 interested in what they can do. And some  
4 evidence is out there that says they're very  
5 receptive to alerts about usage periods or high  
6 rate periods, that they're receptive with energy  
7 and education, and that the efficiency of their  
8 rental space needs to be put in context of their  
9 other housing conditions, which I think a few of  
10 you ladies also mentioned.

11           The multifamily profits evaluation  
12 takeaways are -- and I think we're heard this  
13 already, at least, you know, my kind of cursory  
14 listening skills this morning kind of have tuned  
15 into the many programs, many players. And we  
16 have to be -- you know, we actually think one of  
17 the barrier study requirements was that central  
18 clearing house; right? It was just like this  
19 dream that you can go to one place and find all  
20 your solutions. But especially for this sector,  
21 it seems like it's really hard to figure out what  
22 the landscape is because of all the different  
23 actors.

24           The data issue we mentioned in terms of  
25 accounts versus buildings and trying to

1 understand that sort of whole building, you know,  
2 opportunity versus what's appropriate within a  
3 dwelling unit.

4           And then another profits evaluation  
5 takeaway is that as the, at least, the investor-  
6 owned utility programs move to more and more  
7 third-party implementation, there could be  
8 opportunities for the multifamily low-income  
9 sector that we haven't yet been able to realize.

10           So I'm going to leave it at that for Tami  
11 and Evergreen Economics and hope that they can  
12 chime in after their jury duty responsibilities  
13 have concluded, and we thank you for your  
14 service, Tami.

15           Let's get to the questions.

16           So the first question is really general.  
17 And when I first read it, I was like, oh boy, I  
18 don't think I could answer this question, so I  
19 appreciate you guys trying to. And I just want  
20 to say that, basically, the question is: What  
21 are the best existing sources of multifamily  
22 building data and energy saving opportunities  
23 that you know of?

24           And I guess I would ask you to think --  
25 consider a little bit broader than just data. So

1 we've already heard about metrics. We've heard,  
2 I think, about information, insights, ideas, all  
3 sort of falling into this sort of data bucket.  
4 And also to sort of thing more broadly about not  
5 just that data fits in a database, and so we're  
6 not asking you, where's the database, but also  
7 potentially asking you, are there public sources  
8 of information? Are there publications you rely  
9 on? Are there professionals that you rely on or  
10 institutions that you rely on to get some of this  
11 sort of foundational data, as you think about  
12 opportunities for saving energy and doing clean  
13 energy projects in the multifamily sector?

14           So I'll give you a prize to anyone who  
15 wants to start, but I don't actually have a  
16 prize. How about a glass of water? I would  
17 gladly get it.

18           MS. SUTLEY: I'll just make a couple of  
19 comments.

20           One, I think, you know, this is an area  
21 where we're data rich and information poor. And  
22 I think what at least we've tried to do with our  
23 equity metrics initiative is really tried to be  
24 more deliberate about gathering that data. So,  
25 you know, we live in the world of, you know, lots

1 and lots of data about energy and water usage.  
2 And also, you know, a lot of expectation, I  
3 think, about how we're approaching challenges.

4           So I think for us it was really having to  
5 be sort of very intentional about what we're  
6 looking for. And we went through sort of a long,  
7 long process of trying to refine the kinds of  
8 things that we would track regularly. But we also  
9 report lots of different data sets. And you saw  
10 earlier about the city's Open Data Initiative, so  
11 we also do track a number of different data sets  
12 and measures on the Open Data Initiative. So  
13 we're a public agency, so really anything that's  
14 not sort of customer identifiable is really  
15 available to anyone. It's just what you -- what  
16 you do with that, and I think it's sort of what  
17 the questions you're asking and how you use that  
18 information that's really critical.

19           MS. BROOK: So do you think that -- do  
20 you think that's City of L.A. and LADWP territory  
21 is unique in its ability to access government  
22 data that has probably the sort of baseline data  
23 or the, you know, the tracking mechanisms in  
24 place already because of its Open Data  
25 Initiative? Or do you think that it's pretty

1 general that if you ask if you ask you can find  
2 the data you're looking for? The better question  
3 is what you should do with the data once you have  
4 it?

5 MS. SUTLEY: Well, I wouldn't want people  
6 to have the impression that that was easy to get  
7 that data out there. And even, you know, when  
8 we've -- we, for example, have provided a lot of  
9 customer -- well, a lot of usage data to  
10 researchers at UCLA to help compile and energy  
11 and sort of water atlas for L.A. County. That  
12 took a lot of work. And I think when you start  
13 to try to, you know, try to use the data, you  
14 find out how hard it is to actually get into a  
15 useful form.

16 So even on the existing Building and  
17 Water Efficiency Ordinance, the benchmarking  
18 ordinance, it turned out that the City of L.A.  
19 doesn't have a standard address protocol that all  
20 the departments use. So different departments in  
21 the city identified addresses slightly  
22 differently, which made some of the data  
23 collection challenging, and then trying to match  
24 it up with the county's property records.

25 So there is a lot of work that has to go

1 into making the data useable. And that also, I  
2 think, has to be intentional.

3 MS. BROOK: Any of the other panelists  
4 want to chime in on this one?

5 MS. SUTTER: I'll just say real quick  
6 that as a state agency, I see the CEC has to  
7 serve, you know, the entire state. And there's a  
8 lot of information that might be available in  
9 local government. But if you have these  
10 multifamily buildings in unincorporated areas in  
11 a county, it may be not as available.

12 The one thing that I -- I was looking  
13 into this awhile back. And there is at least one  
14 company that I'm aware of that actually takes the  
15 property assessment information from all 58  
16 counties and puts it in place so you can just  
17 access that data from the player, as opposed to  
18 having to go to each individual county to get  
19 that information. I actually did not use that  
20 person's data, but I have heard that you can  
21 separate out single-family from multifamily, but  
22 you can't do a very good job of -- you can infer  
23 owner versus renter, but it also has the same  
24 difficulties that -- you're all nodding up there,  
25 so my guess is you've probably heard of this.



1 But they -- you can't really separate a building  
2 which is kind of what you might want to look for,  
3 versus all of the various small -- you know, the  
4 units within it.

5 MS. BROOK: Okay. Well, let's move on to  
6 the next question, if that's okay. It's sort of  
7 more of a targeted, like assuming that you have  
8 the information that you need about multifamily  
9 buildings and energy saving opportunities, how do  
10 you give designers and retrofitters access to the  
11 data and information that they need to develop  
12 clean energy solutions for apartment buildings?

13 And a follow-up question on that same  
14 topic: How can tenants use the data available to  
15 them, like consumption data, to make informed  
16 choices about how to save energy, reduce their  
17 bills and, you know, do what we want them to do  
18 in terms of reducing their consumption? That's  
19 the question.

20 MS. CHEN: I can jump in on the tenant's  
21 piece of things. And I think that the key here  
22 really is to pair the information about your  
23 usage and what's going on today with available  
24 solutions; right? And what are the immediate  
25 behavioral changes that can be made? What are

1 the free widget that X or Y will send you that  
2 you can use to reduce this or that or the other  
3 thing. I think making it really as easy as  
4 possible, again, going back to all of the  
5 different stressors that are present in the  
6 everyday lives of low-income folks, let's not add  
7 one more. Let's make it as easy as possible.

8           And I think about this a lot in my own  
9 context; right? I am now, thankfully, a  
10 homeowner. But when I was a renter, even if I  
11 had access to that information about my usage,  
12 the tips that were available from my utility  
13 company were this kind of general list of top ten  
14 things, and maybe one of them was turn the lights  
15 off when you leave the room. Okay, I have a  
16 studio apartment, I never leave the room. But  
17 then it was like invest in solar-thermal, and  
18 that doesn't apply to me.

19           And so I think that the one-size-fits-all  
20 kind of approach to how to be an energy savvy  
21 consumer really needs to get disaggregated quite  
22 a bit. And we need to really think about what  
23 are the ways to really get folks to change their  
24 behaviors? It's not just about awareness. It's  
25 not just if we hear the clean energy sermon

1 enough times, we will -- we will make change.  
2 That will happen for some folks. But  
3 realistically, pairing the solution with the  
4 information needed to prompt folks to take that  
5 step is what's really going to get us there.

6 COMMISSIONER MCALLISTER: Can I ask a  
7 quick question?

8 So are there -- is there anyone doing  
9 that well in your estimation? Like are there  
10 models that are actually, you know, just in a  
11 very pragmatic way that you described, getting  
12 the right solutions in front of the right people  
13 at the right time?

14 MS. CHEN: I think that some of the  
15 programs that are coming out that do address  
16 whole buildings have a lot of promise for that.  
17 And I think that a lot of times the things that  
18 we see from Greenlining's perspective is from  
19 community-based organizations who get this and  
20 who are -- who go in that door prepared to bring  
21 both sets of information.

22 I think that some of the companies out  
23 there, like OhmConnect, for example, are starting  
24 to think about ways to motivate folks to act and  
25 providing the enabling tools, as well as thinking

1 about the motivation. But I think that,  
2 especially for a lot of these companies that are  
3 starting up, their natural like first market  
4 segment is not going to be low-income folks  
5 because those are the harder-to-reach customers.  
6 I do see them kind of starting to move in those  
7 directions for sure, but I think that I haven't  
8 seen anything yet that is specifically tailored  
9 to the population we're talking about today. But  
10 if anybody out there has something, we'd love to  
11 hear about it.

12 COMMISSIONER MCALLISTER: Yeah. I want  
13 to sort of flip -- get the flip side of that,  
14 too, so -- and maybe, well, I don't want to get  
15 in the flow -- in the way of flow here, so maybe  
16 there's a subsequent question whether it's  
17 better. But just keep this in mind.

18 Is there -- so how can data be utilized  
19 to get building owners engaged and motivated? I  
20 guess, you know, we're doing a lot of work on  
21 data at the Energy Commission. And the eventual  
22 goal is to push a lot of that out to the world  
23 and local governments and other stakeholders, and  
24 that could include, you know, a population of  
25 building owners that we could identify and

1 convene and do something important with them.  
2 But making it -- how do we show it's worth their  
3 while; right? What kind of data do they want to  
4 see? What kind of information, knowledge, you  
5 know, sort of vision that's informed do they want  
6 to see that will bring them to the table and help  
7 them invest?

8           Because a lot of -- you know, we're  
9 talking about, for the most part, we're talking  
10 about privately-owned buildings that have renters  
11 in them. So we've got to -- they're kind of a key  
12 stakeholder and we've got to figure out ways to  
13 work with them. And how can we use our  
14 informational landscape to make that happen?

15           MS. CHEN: And I think that the need to  
16 connect the information with the solution is  
17 present there, as well. I think Isaac was  
18 talking about the financing cycles that,  
19 particularly, the rent-assisted properties are  
20 subject to. And really, everything operates  
21 around that. If you're not able to get onto the  
22 natural cycle that those buildings are on, no  
23 matter how committed that owner is going to be,  
24 their hands are going to be tied by just  
25 financial and practical concerns.

1 MS. SUTLEY: I think also, you know, you  
2 need to -- I'm sorry -- you need to make these  
3 programs easy for whoever. So, for example, we  
4 have a Commercial Direct Install Program that we  
5 work, you know, with third-party providers, which  
6 is just kind of a menu of measures. And they go  
7 in and work with the customer and just do them,  
8 and they don't -- we don't charge our customers.  
9 You know, it's free. So that gets you -- at  
10 least gets you in the door.

11 And so we have found other ways to sort  
12 of get you in the door. For example, we were  
13 just about to finish our second annual LED  
14 distribution to all of our 1.4 million electric  
15 customers. So we've delivered to every household  
16 in Los Angeles, two LED lightbulbs with a bunch  
17 of information about other programs that people  
18 can take advantage of, and in a nice bag. And I  
19 think the bag has been the most popular part. I  
20 see them all over the place, a reusable bag.

21 And then finally, we, as I mentioned, we  
22 have been funding community-based organizations  
23 to help us with outreach to communities that they  
24 are much better communicating with than we are.

25 MS. BROOK: I wondered, Meredith, you

1 could just maybe just reemphasize what you talked  
2 about in your opening statements about using the  
3 health professional to introduce energy  
4 efficiency? At least that's what I thought you  
5 said, and that sounds like it would really, I  
6 think, be appropriate to speak of here in terms  
7 of getting the information, you know?

8 MS. MILET: Yeah. Sure. I mean, I think  
9 there are a lot of home visiting programs for  
10 health. And those are -- usually, people who  
11 have established trust are very trusted by the  
12 tenants. And so that's a way to the other  
13 direction, maybe not, you know, to get the owners  
14 to want to step in, but to get the tenants  
15 interested, is having those people who are there  
16 for another reason that is maybe higher on their  
17 priority list right now, and how are often, if  
18 they're (indiscernible) or community health  
19 workers, they're often really trusted by the  
20 families and let into the home already.

21 And I know, also, that people don't want  
22 a lot of people coming to their home a lot of  
23 times. And so to have them have this extra  
24 expertise and be able to try to connect them that  
25 way --

1 MS. BROOK: Fantastic.

2 MS. MILET: -- I think is helpful.

3 MS. BROOK: So has that program been  
4 evaluated or publicized in any way?

5 MS. MILET: Not yet. It's starting to  
6 be. I mean, I think that Contra Costa County,  
7 and they've been working a lot with RAMP,  
8 Regional Asset Management Prevention, they've  
9 given presentations on it and stuff, but  
10 they're -- it's still pretty new. It's been  
11 about a year, I think, and so they're still  
12 trying to evaluate it. They're kind of like on a  
13 shoestring little operation, so like you said,  
14 evaluation isn't costless, but it's been  
15 difficult. But they're trying to collect a  
16 little bit of data around that too.

17 The other thing along those lines that I  
18 can't help but think about when you're talking  
19 about getting the building owners motivated, and  
20 I know this sounds really Pollyannaish because,  
21 obviously, the money is going to be the most  
22 important thing but, you know, health is a  
23 motivator for people in ways that other things  
24 aren't.

25 And I know, it reminds me of, there are



1 these medical programs for asthma where if there  
2 are patients who are renters who have asthma  
3 symptoms, and some of the household problems like  
4 leaks or things causing moisture or pests and  
5 they aren't -- their landlords are not responding  
6 to wanting to get things fixed, there's a  
7 program, basically, it sounds so simple, but  
8 where there are doctors who write a letter to the  
9 landlord. And they've had a lot of success  
10 because I think people just getting that letter  
11 from a doctor who, you know, who seems more of  
12 like an authority figure, sometimes they don't  
13 have to go through legal recourse because once  
14 they get the letter from the doctor, they make  
15 the changes.

16 MS. BROOK: Well, that's fantastic. It's  
17 sort of like getting a letter for an emotional  
18 support dog.

19 COMMISSIONER MCALLISTER: You don't think  
20 an energy engineer has that level of credibility?  
21 I don't know.

22 So I want to just highlight that about  
23 Contra Costa County, because I've heard the same  
24 thing, that they're trying -- they maybe have  
25 filled or their trying to fill a position to do

1 that coordination directly between their health  
2 services department, you know, I'm going not get  
3 the names wrong, and their energy and sustainable  
4 side of the shop, and so those have been siloed.  
5 And so they're trying to actively make sure that  
6 those programs coordinate, and I think that's a  
7 great example. And I think it's front end, you  
8 know, on the front end, but that has a lot of  
9 promise, I think, too.

10 MS. SUTLEY: If I could add just one  
11 quick other example? The L.A. City Housing  
12 Department, you know, routinely inspects  
13 multifamily housing. And so they have a program  
14 called Gateway to Green where, when they are  
15 inspecting rental properties, they are able to  
16 provide information to the properties about our  
17 energy and water programs. And so that's been,  
18 you know, an effective way to communicate, at  
19 least with the building owners.

20 MS. BROOK: Great. Those are really  
21 great answers to that -- those -- that set of  
22 questions.

23 Moving on, there's a little bit of  
24 overlap here, but let's just touch on it. And if  
25 there's anything new that you can add and any

1 other questions from the dais, that would be  
2 great.

3           Benefits to customers. How can we  
4 maximize benefits to customers in low-income and  
5 disadvantaged communities? What tools and data  
6 are available to target deployment and what tools  
7 are still needed?

8           So we've touched on some of this, but if  
9 there's anything that any of you would like to  
10 add before we move on to non-energy benefits, let  
11 me know. Any other questions? Does anybody want  
12 to touch on that?

13           MS. CHEN: I would actually suggest that  
14 we think about benefits, not as energy benefits  
15 and non-energy benefits, but just as benefits.  
16 And there are, of course, there are those kinds  
17 of benefits.

18           But I think one of the things  
19 particularly that I'm seeing in the IOU program  
20 that's starting to create some problems around --  
21 well, not starting to, that has been and  
22 continues to create problems around effectively  
23 reaching low-income folks, which are the higher-  
24 hanging fruit in this challenge, is that we are  
25 looking at stuff that's on the bill, and then

1 we're kind of trying to secondarily work our way  
2 into the non-energy benefits around some of the  
3 health outcomes, around quality of life outcomes  
4 and whatnot. And then we end up in this, oh,  
5 this isn't cost effective, so maybe we shouldn't  
6 do this, or maybe we should do less of it.

7           Well, okay, hold on a second. If someone  
8 is living in Bakersfield and they're not using  
9 air conditioning during the summertime, they're  
10 not using any kind of cooling during the  
11 summertime because they don't have a way to do it  
12 without it costing hundreds of dollars, they're  
13 not going to do that. You get them energy  
14 efficiency climate control, and guess what?  
15 They're going to use it. And we want them to use  
16 it. And that should be a benefit that doesn't  
17 compete with energy benefits.

18           And I think that the way that our systems  
19 are set up now, and the Commission is working its  
20 way through breaking down some of these barriers,  
21 but one of the real keys is going to be stop  
22 thinking about energy benefits and cost  
23 effectiveness and then, also, non-energy  
24 benefits. We've got to think about it more  
25 holistically.

1 MS. ADEYEYE: I have a question that kind  
2 of dovetails on what you just said, Stephanie,  
3 and I think what Isaac said earlier in his  
4 presentation.

5 So when you're thinking about benefits to  
6 disadvantaged communities, how are you thinking  
7 about the way that those benefits might differ,  
8 for example, someone in Bakersfield versus  
9 someone in San Francisco, and are there things  
10 that should be considered in this process around  
11 the locational differences for disadvantaged  
12 communities?

13 MS. CHEN: Yeah, absolutely. That's a  
14 really good question. And I think that I would  
15 actually look to Meredith to talk about this,  
16 because the first things that come to mind for me  
17 are some of those environmental health issues.  
18 Environmental health outcomes are going to be  
19 radically different between the two families that  
20 you just described. And quite frankly, I'm not  
21 so worried about the environmental health  
22 outcomes for most of the neighborhoods in San  
23 Francisco, not all, but most. I am extremely  
24 concerned about the ones in Bakersfield. I think  
25 that's the one that really jumps to mind for me,

1 the top of mind.

2 COMMISSIONER MCALLISTER: And why is  
3 that, because of indoor air quality issues or  
4 just air quality issues?

5 MS. CHEN: Yeah. I mean,  
6 (indiscernible), I don't have a lot to add but,  
7 yeah, I think there will a lot of differences.  
8 And the heat examples are really -- it's a really  
9 important one, especially with the change, the  
10 fact that things are going to get hotter.

11 MS. BROOK: Well, we're moving into non-  
12 energy benefits, so let's just keep going.

13 So the question is: Which non-energy  
14 benefits are most valuable to customers and  
15 building owners in this multifamily low-income  
16 sector? And which ones are program  
17 administrators looking to track and analyze? So  
18 that's kind of to the point that maybe they're  
19 not the same, so any discussion on this with this  
20 panel would be great.

21 Meredith?

22 MS. MILET: I can start and probably  
23 reiterate, but I think that one of the things I  
24 want to emphasize is that I think when you say  
25 what's most important, energy cost burden comes

1 up, even from a health perspective. So I just  
2 don't want to forget that we have actually now,  
3 through this health equity, a list of healthy  
4 community indicators. And they are sort of our  
5 list of indicators of what we call social  
6 determinants of health. And so -- and energy  
7 cost burden is one of them, so we think of that  
8 as a health indicator, even though it's not a  
9 direct health outcome. Although, like you said,  
10 it is different, like in terms of our program  
11 administrators or our staff, we'd also like to be  
12 able to track the actual changes in health  
13 outcomes when that's possible.

14           And in terms of health outcomes, if  
15 you're thinking about which ones are important,  
16 we touched on them, asthma, cardiovascular  
17 disease. But it could also be done as general  
18 hospitalizations and emergency department visits,  
19 if that's an easier thing to get. And, also, the  
20 indicator of asking people how they rate their  
21 own overall health has been shown to be really  
22 well correlated with health. And so that's one  
23 of the things I think that we added to the Contra  
24 Costa County pilot because it was just too much  
25 work to try to get a lot of really in-depth

1 health outcomes. So can we ask these people this  
2 one question, you know, how do you rate your  
3 health before and after?

4           And then the other thing I want to  
5 emphasize is to not forget mental health and  
6 stress, because those are really important and  
7 maybe even more sensitive to these changes in  
8 savings than other health outcomes.

9           MS. BROOK: Nancy or Mary?

10           MS. SUTTER: I'll just really quickly say  
11 I find it fascinating that Meredith was talking  
12 about, you know, you figured out one question  
13 just to ask that really can take the place of  
14 what maybe other folks might consider a much more  
15 rigorous and, therefore, a much more expensive  
16 type of approach to actually determine, you know,  
17 some of these health outcomes. And to me, it may  
18 be considered a proxy, but it's a direct proxy in  
19 terms of what you have and much less expensive to  
20 get, and yet it's something that you can use to  
21 help make decisions.

22           MS. SUTLEY: The thing I would add is  
23 just, you know, for us, one of the things we're  
24 able to do somewhat easily is to work with other  
25 city departments, so we look across, you know,



1 different emphasis.

2           So, for example, we've had a program for  
3 a number of years with our Department of Aging  
4 where we give out fans every summer for elderly  
5 people in L.A. And, obviously, that's a huge --  
6 there's a huge health issue associated with heat.  
7 And we can get sort of the most energy efficient  
8 fans into people's homes.

9           So I think that, you know, thinking, and  
10 to the health example, I think thinking beyond  
11 just the utility or the, you know, sort of the  
12 energy questions narrowly can start to target  
13 programs that provide multiple benefits. And  
14 we've had a program for a number of years where  
15 we actually give our low-income customers a new  
16 refrigerator. And I think that there are  
17 benefits beyond the fact that, you know, old  
18 refrigerators are very -- use a lot of energy, to  
19 get a new refrigerator into somebody's home, it  
20 also means somebody shows up and knocks on the  
21 door and is with the person getting the new  
22 refrigerator.

23           MS. BROOK: Great. Super. Okay.

24           So the last question we have is metrics  
25 for progress. Are data -- do you have any

1 follow-up questions?

2 COMMISSIONER MCALLISTER: Yeah.

3 Actually, I wanted to -- so nobody has mentioned  
4 jobs. And I guess, I mean, you can consider that  
5 a non-energy benefit; right? I mean, we're in  
6 these communities. I want to deepen, in the  
7 afternoon, the question of -- or get everybody's  
8 thoughts and encourage people in their comments  
9 to talk kind of about how best we can move  
10 forward interacting, how best we can interact  
11 with local communities, nonprofits and, you know,  
12 all the sort of stakeholders that really are in  
13 the know and can help us -- help get success  
14 locally. I think it's our obligation to kind of  
15 figure out how best to reach out to them, not  
16 only in this context but in the 758 Action Plan  
17 update and in the doubling work that we're going  
18 to do, we have a lot of parallel work that we  
19 really need to get out there into the world and  
20 hear from people about.

21 And I guess it's -- so economic  
22 development is a goal that is really bound up  
23 with everything we're talking about here. And I  
24 guess I want to -- you know, I personally, you  
25 know, I think, and maybe I'm wrong here, but I

1 think that the most effective approach is going  
2 to have somebody that sort of talks your language  
3 and is from your place, coming and knocking on  
4 your door to do work in your apartment or your  
5 dwelling. And it seems like keeping money local  
6 and sort of injecting money into the local  
7 community is one of the best ways we can have a  
8 positive impact in those places.

9           So I guess in terms -- how do we -- how  
10 might we think about that as a non-energy  
11 benefit, just the local ecosystem of projects  
12 that's the actual work that's going to be done in  
13 these facilities, these buildings?

14           MS. CHEN: I've got some thoughts about  
15 that. Yes to all of what you just said. And I  
16 think that the way to really operationalize all  
17 of these good intentions that we have around  
18 creating a clean energy economy from both the  
19 supply contractors and job side, as well as the  
20 demand customer side of things, is to approach  
21 the job creation question in the same way that we  
22 are approaching all of these other questions that  
23 we're focused on.

24           If we want to save kilowatts and therms,  
25 we set a goal. We figure out what the product or

1 program is that's going to look like it, that's  
2 going to look at addressing that concern. We  
3 resource it with dollars. And then we evaluate  
4 it on the backend. We're really not doing those  
5 things comprehensively or effectively when it  
6 comes to the jobs that are associated with these  
7 programs. Tracking data about who's getting the  
8 jobs is kind of here and there. And a lot of the  
9 programs are not resourced to support workforce  
10 development and the pipeline from training  
11 opportunities into on-the-job, earning money,  
12 career advancement opportunities because those  
13 are, again, considered one of these nice to do  
14 non-energy benefits that's not cost effective to  
15 do it with folks who are trainees.

16           But to your point, if we're really  
17 talking about not just creating like market  
18 transformation, but we're talking about creating  
19 social transformation, we have to think about  
20 that and we have to resource those efforts in the  
21 same way that we would resource efforts to save  
22 kilowatts and therms.

23           MS. SUTLEY: And we -- so LADWP has -- in  
24 fact, they've had a long history of working with  
25 community-based organizations on retrofits. And,

1 for example, in the '80s and '90s, you had a  
2 toilet replacement program that was entirely  
3 carried out by community-based organizations who  
4 literally drove door to door, knocking on  
5 peoples' doors and asking if they wanted a low-  
6 flow toilet. It was a very successful program.  
7 And there's a coalition of community-based  
8 organizations in Los Angeles that the city has  
9 been working with around retrofits of public  
10 buildings.

11           And finally, I want to mention, we also  
12 have within LADWP a program called the Utility  
13 Pre-Craft Trainee, which is trying to get people  
14 into careers at LADWP. We, like other utilities,  
15 are facing a wave of retirements, and so this is  
16 a way to get folks interested. And, you know,  
17 it's a program that allows them to see what a  
18 utility actually does. And one of the programs  
19 that they work on specifically is our Home Energy  
20 Improvement Program, which is a home retrofit  
21 program that's available to both single-family  
22 homes and multifamily homes.

23           MS. BROOK: Great. Our last question,  
24 and again, I think we've touched on this some,  
25 but if there's any final input the panelists

1 would like to provide, that would be fantastic.  
2 Then we're going to open it up to the workshop  
3 participants.

4 Are data-driven metrics currently  
5 incorporated into multifamily program design? If  
6 so, are these the best metrics to track progress?  
7 If not, what else should be tracked?

8 We've heard that we can't silo these  
9 different metrics, that we have to sort of, you  
10 know, think about it holistically. Is there  
11 anything else the panelists would like to  
12 contribute to this?

13 COMMISSIONER SCOTT: Martha, can I add a  
14 little overlay to the metrics question? And I  
15 think it kind of captures much of the  
16 conversation from this morning.

17 And I think that maybe the goals that we  
18 have in the low-income multifamily building space  
19 actually pull the metrics in opposite direction;  
20 right? So if we're talking about a family in the  
21 Central Valley who doesn't have energy  
22 efficiency, may or may not have air conditioning,  
23 and we want to make that house a livable space,  
24 get some energy efficient air conditioning in  
25 there, that's likely to have the energy use go

1 up. But that's a good thing because now the  
2 family has a livable space; right? And so our  
3 metrics in these areas really do pull in  
4 different directions.

5           You know, another example is as we move  
6 towards more transportation electrification,  
7 again, we want to have the building energy use go  
8 down, but we're getting ready to plug in  
9 something that's going to pull the energy use  
10 back up. And so as we're looking at metrics, I  
11 think I'd love your all's thoughts on how do we  
12 not have it one-size-fits-all, but also not kind  
13 of get wrapped around the axle because everything  
14 starts to get very complicated if you're looking  
15 at kind of the push and pull.

16           MS. BROOK: Very good. Thank you.

17           MS. SUTTER: Well, I have two things.  
18 Directly to your kind of thought, to me, if you  
19 have a set of metrics that you look at  
20 holistically, and sometimes some go up and some  
21 go down, but overall they're moving in the  
22 direction that you want, and, Meredith, it  
23 sounded like there were multiple things that  
24 Contra Costa County looks at in terms of thinking  
25 about the health and welfare of their residents

1 and their community, and that's one way to do it.  
2 So you might say, yes, energy is going up, but  
3 this other metric that we have that talks about  
4 quality of life is also going up, and so that's  
5 going to fit for us.

6           So to me, you need to think of these in a  
7 group and kind of put it together.

8           The other thing I will say to kind of the  
9 question that Martha posed to us is at least  
10 within the energy efficiency and the ESSA, the  
11 common area of metrics that I'm familiar with --  
12 and I will premise this by saying, you know, I am  
13 not the person who's been involved in a lot of  
14 this. I think that there are people here who  
15 have already been thinking about this more. But  
16 I will say that many of these metrics are what I  
17 would call output metrics and not the outcome  
18 metrics. And yet, it is much more cost effective  
19 to embed some of the output metrics in data  
20 collection as you go within a program tracking  
21 database. Often, some of the outcome metrics  
22 require a bit more effort to ask maybe that one  
23 question when you're already onsite, or having to  
24 go back and get some of these people, so --

25           MS. SUTLEY: The other thing that's



1 (indiscernible) is just, you know, sometimes I  
2 think we try to shoehorn too many things into the  
3 utility programs. So as we look at our programs,  
4 I mean, we really, we have significant  
5 constraints. We have constraints on what we can  
6 spend money on. And so I think focusing on sort  
7 of -- it helps our customers but it also helps us  
8 if we use less energy, if our customers use less  
9 energy, certainly justified from a cost  
10 perspective.

11           And so, you know, we go through a process  
12 of evaluating, you know, different energy  
13 efficiency programs around cost effectiveness and  
14 other things. And we can choose to, you know, to  
15 consider other things, as well, but it's a pretty  
16 constrained universe, and particularly for public  
17 agencies where we're constrained by Prop 26 to  
18 ensure that our programs are all cost based, and  
19 that has made things more challenging to reach  
20 low-income customers specifically.

21           So I think looking for those  
22 opportunities to partner with other, whether  
23 other city departments, other state agencies,  
24 other programs where we can help to leverage what  
25 the utility can do with what other actors can do.

1           MS. CHEN: Commissioner Scott, I think  
2 what came to mind with your question, which I  
3 think is pretty spot on, is some of the stuff  
4 that Eugene was talking about in the CLIMB Action  
5 Plan in particular, talking about needing to  
6 align programs so that we don't have competing  
7 transportation electrification and energy  
8 efficiency; right?

9           And then also just a lot of these  
10 programs need a little bit of a dust off. You  
11 know, they need a little bit of -- we can call it  
12 spring cleaning, whatever we want. But like, I  
13 mean, this is one of the -- this is one of the  
14 maybe down sides of California being able to move  
15 as quickly as it has on a lot of clean energy  
16 advancements all at the same time is that our  
17 programs, in particular our legacy programs that  
18 were kind of the first and second ones through  
19 the gate, haven't kept up and haven't evolved  
20 along with all the newer programs that are  
21 stacking alongside of it.

22           So I actually think that the process of  
23 taking a look at some of those legacy programs  
24 with a fresh set of eyes and with a set of eyes  
25 that's informed by everything that's going on

1 right now will help to identify some of those  
2 areas that need some tune-ups, and hopefully some  
3 solutions, as well.

4           COMMISSIONER MCALLISTER: It would be  
5 really helpful if you could just sort of feel  
6 free to name names in your comments. I mean, you  
7 know, I mean, we're all friends here. We're all  
8 rowing in the same direction in the same boat.  
9 So, you know, let's just call a spade a spade if  
10 we feel like we need to. And, you know, we're  
11 all -- we have big bureaucracies to negotiate and  
12 navigate and, you know, it's okay; right? So I  
13 feel like, you know, productive conversation kind  
14 of needs us all to be clear about what we're  
15 trying to say, and so I just want to make that  
16 general comment.

17           MS. BROOK: Okay. Does the audience have  
18 any questions for this panel? We have about ten  
19 minutes before we break for lunch.

20           If not, then thank you, and my stomach  
21 thanks you.

22           MS. GOLDEN: Hi, this is Rachel Golden.  
23 I'm with the Sierra Club. And I had a question  
24 about indoor air quality and health.

25           And my understanding is that combustion

1 appliances, especially gas appliances, are a  
2 large source of indoor air pollution, like carbon  
3 monoxide, criteria pollutants and formaldehydes.  
4 And I'm wondering if -- and I know that indoor  
5 air quality is a very hard thing to measure  
6 across the state. And I'm wondering if an  
7 appropriate metric would be sort of appliance  
8 replacement from combustion appliances to zero-  
9 emission appliances, if that would be a good  
10 proxy for improving indoor air quality and also  
11 support media fuel switching policies?

12 MS. MILET: I won't pretend to be an  
13 expert on indoor air quality. We have a whole  
14 section on that. So in any case, I can refer you  
15 to them. But that does sound like it is one of  
16 those more win-win data solutions; right? If  
17 you're switching and you're reducing that  
18 exposure, and then also reducing the energy  
19 efficiency.

20 That does bring up an interesting  
21 question. If you -- there is also the opposite  
22 direction health issue that we have to guard  
23 against which is when you make buildings tighter,  
24 you have worse indoor air quality. And I think  
25 that a lot of times what we're talking about

1 are -- those are different things. When you make  
2 some changes to a building that already is kind  
3 of old but it's just changing some of the sources  
4 of energy or the -- it's not changing the whole  
5 envelope of the building, then you don't have to  
6 worry about that. But in terms of newer  
7 buildings, yes, that is an issue.

8 MS. BROOK: Does anybody else have any  
9 questions for the panel before we conclude?

10 MS. RAITT: So sorry, I'll just jump in,  
11 Martha. We did, I think, get one on WebEx.

12 MS. BROOK: Oh, good.

13 MS. RAITT: So we weren't planning to  
14 necessarily open up before public comments, but  
15 it looks like we got a comment from Deborah  
16 Little (phonetic).

17 "Aside from consumption data, how can  
18 project details data be useful to policy,  
19 building owners and builders to understand what  
20 measures were installed and the results?"

21 I don't know if someone wants to address  
22 that.

23 MS. BROOK: Well, it sort of sounds like  
24 an evaluation question to me, like I would  
25 expect, I mean, if there was a program that was

1 evaluated, it would talk about what measures were  
2 installed and how effective they were, so unless  
3 I'm missing something and you guys see a  
4 different question that was asked.

5           Yeah, I think that's like the typical --  
6 I think the typical answer is we evaluate the  
7 program. That's I think historically what we've  
8 done to understand measure effectiveness. And  
9 like Tami was going to introduce, they have both  
10 profits evaluations and impact evaluations that  
11 are typically done. And the impact evaluation  
12 would go more to the measure effectiveness, and  
13 then the profits evaluation would be more about  
14 did the -- was the program overall effective in  
15 meeting its objectives? So I guess that's how I  
16 would answer that question.

17           MS. SUTTER: I'll add one thing on  
18 specifically with low-income families. And it is  
19 more difficult to get billing data. And they  
20 move more often, so you're unable to necessarily  
21 get what you can often use in energy impact  
22 assessments, which is a year post -- or a year  
23 pre and a year post. It's more difficult with  
24 that particular population.

25           I am unsure how often, especially with

1 this type of population, the evaluation is really  
2 more using what I would call ex-ante values, you  
3 know, values that everybody agrees are you put  
4 this in, you're going to get this much savings,  
5 whether or not there is the money available to  
6 actually go and do a true impact assessment of  
7 energy and demand using billing data, which can  
8 often then show or not, you know, that there  
9 really is this savings. Now the ex-ante values  
10 are typically pretty good, so I don't want to,  
11 you know, say that they're awful. But I'm just  
12 not clear how much some of the assessments are  
13 able to do it, just simply because of the  
14 population type.

15 MS. BROOK: Okay. That's a very good  
16 point. Thank you.

17 MS. SUTLEY: Yeah. Just a couple of  
18 things. When -- do a potentials study every few  
19 years to just, you know, kind of assess what  
20 opportunities are out there and base our programs  
21 sort of on that.

22 And I also wanted to just mention one  
23 other study we were doing which actually was a  
24 response to Commissioner McAllister's question  
25 about economic development. And we've actually

1 done a job creations study, actually, UCLA has  
2 done a job creation study for us on our energy  
3 efficiency programs, and it's in the process of  
4 being updated right now.

5 MS. BROOK: Great. Okay. So thank you  
6 so much. You guys were fantastic for our first  
7 panel. It was really informative and I really  
8 appreciate your participation.

9 And I'm going to turn it back over to  
10 Heather.

11 MS. RAITT: All right, so we'll take a  
12 break and come back at 1:30. Thank you.

13 (Off the record at 12:25 p.m.)

14 (On the record at 1:33 p.m.)

15 MS. RAITT: All right, so we'll go ahead  
16 and get started again. Whoops. Excuse me.

17 So for this afternoon, we're going to  
18 open up a panel on Innovative Technologies and  
19 Multifamily Building Programs. And the moderator  
20 is Mikhail Haramati from the Energy Commission.

21 So go ahead. Thanks.

22 MS. HARAMATI: (Off mike.) So the folks  
23 on this panel are really trying to understand how  
24 to get innovative technologies into multifamily  
25 low-income buildings. And so the panelists that



1 are going to be speaking shortly represent folks  
2 that are either managing or doing retrofits in  
3 apartment buildings. We also have an owner of  
4 housing authorities that own a number of  
5 different types of buildings and manages those  
6 buildings (indiscernible). And they'll be able  
7 to speak a little bit about what it takes  
8 (indiscernible) buildings and operators who want  
9 to do these types of retrofits. And we'll also  
10 talk a little bit about some of the solutions  
11 with overcoming some areas (indiscernible).

12           So similar to the morning panel, I've  
13 asked the panelists to just kind of give a brief  
14 bio and then a couple of talking points, and a  
15 number of them have slides. And then we'll go  
16 into the prepared questions. And then we'll end  
17 up on a broader Q and A.

18           MR. BROOKS: (Off mike.) Okay. Hi  
19 everybody. My name is Andy Brooks. I'm  
20 (indiscernible) for the Association of Energy  
21 Affordability. And we're a nonprofit technical  
22 services organization dedicated to bringing  
23 energy efficiency and renewables to multifamily  
24 buildings in order to foster and maintain our  
25 goal in helping housing communities, particularly

1 those of low-income. And we're pretty much an  
2 on-the-ground organization. We spend most of our  
3 time out in buildings, doing assessments,  
4 troubleshooting, developing specifications for  
5 retrofit projects, getting stakeholders engaged,  
6 working with contractors, and basically doing  
7 everything that's necessary to actually get  
8 retrofit projects through from beginning to  
9 completion.

10           So a lot of that work that we do is  
11 through our role as program implementors, so we  
12 implement a number of multifamily programs  
13 throughout the state for a variety of different  
14 administrative agencies and utilities. And they  
15 all tend to be whole-building comprehensive, both  
16 energy efficiency and solar programs, so the  
17 largest being the Low-Income Weatherization  
18 Program that we implement for CSD, Community  
19 Services and Development, which is a greenhouse  
20 gas reduction program funded through Cap and  
21 Trade GGRF funds that does both efficiency and  
22 solar.

23           And then a new program that's going to be  
24 coming online later this week that was mentioned  
25 earlier, the SOMAH program, we are on the

1 administration, the nonprofit administration team  
2 for that billion dollar over ten year solar  
3 program.

4           Then the other area that we do a lot of  
5 work in is on the research and demonstration  
6 project side. We have a number of CUT-funded  
7 EPIC research and PEER (phonetic) research funded  
8 grants that are all focused on multifamily in  
9 some way, shape or form. Most of them are more  
10 specifically targeting zero-net energy, you know,  
11 pathways towards zero-net energy. And then we  
12 have some that are more focused on indoor air  
13 quality, which was mentioned quite a few times  
14 earlier today.

15           So kind of all of the work that we do is  
16 in multifamily in some way, shape or form, and  
17 most of it is in the low-income affordable  
18 housing space. So hopefully some of the  
19 experiences we've had can help contribute to the  
20 conversation. And I didn't prepare the talking  
21 points. Most of those, I think, will come out in  
22 the discussions that we have from the questions  
23 that come up.

24           MR. NARAYANAMURTHY: Thanks, Andy.

25           Thank you, Mikhail.

1           So I'm Ram Narayanamurthy. I'm with  
2 EPRI, the Electric Power Research Institute.  
3 EPRI is a not-for-profit public benefits research  
4 organization focused on research related to the  
5 electricity city end to end, all from the  
6 generation side all the way to the end-use side.  
7 Most of my personal focus still has been on the  
8 integrated buildings area, so we've been working  
9 on a few different zero-net energy  
10 demonstrations, both for new construction  
11 retrofits, as well as working on technologies  
12 that are what we call filling the gap.

13           So within that portfolio, we work with  
14 utilities around the country. We have quite a  
15 few demonstrations through the EPIC Program and  
16 conjoined that are also demonstrations in other  
17 parts of the country, like Alabama, Georgia,  
18 North Carolina, et cetera, looking at holistic  
19 community-scale, an option of energy efficiency  
20 and solar.

21           So part of the reason I think that what  
22 we wanted to come to the panel for was to talk  
23 about some of the experiences that we have had  
24 with some of our EPIC projects in California.  
25 We've been working with property owners. Dave

1 has been one of our great partners. We have also  
2 been working with some other property owners of  
3 low-income housing. And part of our work has  
4 been looking at what it takes to retrofit from a  
5 holistic whole building perspective.

6           And some of the learnings that we have,  
7 for example, one of the projects that we  
8 completed in Lancaster, one of the things we  
9 learned -- and as you go through these projects,  
10 what you learn is that it's not the technologies,  
11 per se, or the individual technologies that  
12 matter as much as the overall process of how you  
13 go about this retrofit. And so some of our  
14 learnings said, okay, hey, if you're doing solar,  
15 for example, combining solar with energy  
16 efficiency in a lot of cases makes sense because  
17 you have one opportunity over a longer period of  
18 time to be able to do a very deep retrofit. So  
19 when you're doing solar, for example, if you're  
20 updating your roofing, you have more insulation  
21 on your roof, then automatically you are getting  
22 a double benefit to it.

23           So a lot of it goes down to how do you  
24 actually combine technologies, multiple  
25 technologies to provide packages that also have

1 less imposition on the tenants?

2           One of the other things we learned was  
3 that, hey, if we don't engage the property  
4 owners, it's really hard to get those benefits  
5 down to the tenants because without the property  
6 owners, they're not able to participate in this  
7 program.

8           Some of the other learnings, we have also  
9 been looking at how do you take all the links and  
10 work more towards GHG reduction through a  
11 combination of electrification and efficiency?  
12 And so we also run into challenges with, for  
13 example, the distribution system being able to  
14 handle (indiscernible).

15           And in terms of some of the technologies  
16 that have opted out, things like air sealing,  
17 non-inclusive air sealing methods for existing  
18 construction, technologies, let's say, for  
19 example, smart thermostats that don't rely on Wi-  
20 Fi, how do you actually balance master metering  
21 while still managing behavioral elements with  
22 master metering so that you have overall  
23 efficiency (indiscernible)?

24           So those are some of the things that pop  
25 out, and I think we'll be discussing more.

1 MR. BRENNER: Okay. Dave Brenner with  
2 the Fresno Housing Authority. There should be  
3 slides in a second.

4 COMMISSIONER MCALLISTER: Yeah. I think  
5 everybody thinks it's sort of -- I know we're  
6 such an amenable group. I know we don't want to  
7 overpower each other. It's really great. But it  
8 would be good to speak it up so everybody can  
9 hear in the room, and also the reporter.

10 MR. BRENNER: Okay. Just as a little bit  
11 of context, this is Fresno County, so they're  
12 mostly DACs. The household incomes are very low.  
13 And it's quite hot; there's a lot of cooling  
14 days.

15 The Housing Authority is a really active  
16 developer, so with our new projects, we're able  
17 to do a lot. We use utility modeling to capture  
18 the value, and then it sort of pushes back in, in  
19 debt. And so all of our new products are 15 and  
20 20 percent above code and we do a lot of  
21 innovative work on those. But then we also have  
22 this huge portfolio of other projects. Some of  
23 them are HUD properties built in the '50s, and  
24 these are cinderblock duplexes mostly. And there  
25 isn't a really a good value capture mechanism, so

1 we have a hard time retrofitting those. And the  
2 other ones are farm labor properties under USDA  
3 and there's no mechanisms at all.

4 Next slide please.

5 So last year we did six projects with  
6 LADWP, with AEA. And they were on a really tight  
7 timeline, which is always hard for developers.  
8 But so in the left you kind of see what was  
9 really straightforward for us. So they pay about  
10 60 to 70 percent of the total cost, and so a lot  
11 of these things are no-brainers in that regard.  
12 They pushed us really hard on heat pumps, but we  
13 had a hard time with the local jurisdictions. We  
14 had a hard time with the local contractors. And  
15 we had a hard time with USDA when we tried to  
16 share systems because it would affect the way our  
17 subsidy is calculated.

18 COMMISSIONER MCALLISTER: Could you  
19 describe the USDA kind of context --

20 MR. BRENNER: Yeah. So --

21 COMMISSIONER MCALLISTER: -- maybe with  
22 just a couple sentences maybe?

23 MR. BRENNER: -- the USDA supported the  
24 construction of these properties back in the '60s  
25 and '70s. They continue to give us operating



1 subsidy, which is part of the income for the  
2 properties, what keeps them going. But other  
3 than that, there are properties we own and  
4 maintain the properties.

5 COMMISSIONER MCALLISTER: Have you looked  
6 into the subsidies that are available today from  
7 the USDA, sort of rural programs, you know, to do  
8 energy -- clean energy work?

9 MR. BRENNER: Yes. So they haven't had a  
10 call. I think it's two years since they had a  
11 call. We have looked at some of them. They're  
12 pretty poorly funded at this point. We're hoping  
13 in the next couple of years that those projects  
14 will get -- the programs will get a little more  
15 robust.

16 MS. HARAMATI: I was going to say, too,  
17 can you just state how many properties you own  
18 and sort of in what capacity? I think that would  
19 be helpful for folks.

20 MR. BRENNER: Yeah. So we own 75 total  
21 properties. We are a Housing Authority, so we  
22 are a government agency, so we have a regulatory  
23 function, but we also are the owner and property  
24 manager and the development agent for those, as  
25 well. And in some cases, we self-finance because

1 we have our own finance mechanism.

2           Yeah, sorry, it's a lot of housing stuff  
3 that I'm going through fast.

4           The last point I just wanted to make on  
5 this is they have evaporative coolers, which is a  
6 hard thing to deal with for three months of the  
7 year in the Central Valley, but there's no  
8 mechanism within this. It's a GHG program, so  
9 there's no way that we could replace these.

10           Next slide please.

11           And this is a new construction project  
12 we're working on with EPRI and Ram. It's a  
13 complicated project that has a lot of sources of  
14 funding, a lot of ownership complexity. It's a  
15 retrofit and new construction in one. There's  
16 potentially three different CEC sources of  
17 funding, which is even more complicated. But  
18 it's also an uncertain timeline, so some of these  
19 might fall out. And then just very briefly, on  
20 the right is kind of the discussion that Ram is  
21 walking us through. So the program that he's  
22 running is paying the delta between a regular  
23 wall and a high-performance wall, or whatever the  
24 measure might be.

25           So in that context, some of these things,

1 you know, make total sense to an owner, the top  
2 three make total sense. He's kind of trying to  
3 sell us on centralized HVAC, which is really  
4 interesting to us, but there's a lot of unknowns  
5 to us. So I think a bit of data and a bit of  
6 demonstration would help us with controls, as  
7 well.

8           And then I think there's also an unknown  
9 future for all these buildings. There's a  
10 possibility you might consider individualization  
11 of units in the future, so we're going to be  
12 building in electrical redundancy. And the other  
13 ones are pretty straightforward.

14           So next slide please.

15           And then lastly, we oversee the Section 8  
16 program where we add -- we provide administrative  
17 support to that program. And there's a lot of  
18 talk about trying to reach those landlords.

19           In Fresno, it's very hard because there's  
20 low vacancy, low rent properties. And often when  
21 the investments are made it doesn't change rent  
22 or it doesn't change vacancy levels, and it  
23 definitely doesn't change operating subsidy that  
24 comes from the Section 8 program. So a couple of  
25 things we've experimented with are the ESA

1 (phonetic) program. We are now blanket  
2 certifying tenants if they are Section 8 tenants.  
3 And we're trying to make the ESA program more  
4 attractive that way. We're also trying to  
5 integrate some of these programs into our  
6 inspections program.

7           And the last thing I just kind of wanted  
8 to point out, a lot of these landlords are  
9 motivated by ease of manageability; right? So  
10 you talk to them about cost savings, which don't  
11 go to them, and you talk about some of the  
12 upgrades, they don't care that much. But if you  
13 do something that actually improves and makes it  
14 easier to manage their property, they can be  
15 quite receptive.

16           COMMISSIONER MCALLISTER: So these are  
17 not deed-restricted properties, right, the  
18 Section 8?

19           MR. BRENNER: These are, well, for the  
20 majority, not deed restricted. Some are project  
21 based. But the majority are not deed restricted.

22           COMMISSIONER MCALLISTER: Okay. So I  
23 guess, you know, no need to answer fully now but,  
24 you know, what would be the lever, what would be  
25 the moments where if there were a program that

1 could throw, you know, a couple million dollars  
2 at a project of some scale, you know, when would  
3 that really be -- when would an opportune moment,  
4 if any, appear to do that with these non-deed-  
5 restricted properties?

6 MR. BRENNER: Yeah, it's tough because  
7 maybe one of them has ten Section 8 vouchers on  
8 it out of 40, but next year it has two. So it's  
9 not -- I think there's no clear answer for that,  
10 unfortunately.

11 MR. DRESTI: Okay. Good afternoon  
12 everybody. My name is Mauro Dresti with Southern  
13 California Edison. I manage the group that does  
14 demand pilots, demonstrations and programs on the  
15 customer side of the meter for the company. So  
16 I'm going to talk about MUDs in context of the  
17 success and difficulties we've had with getting  
18 them in our Charge Ready Program. So the slides  
19 I have actually talk to that in context.

20 Next slide.

21 So for those of you that aren't aware,  
22 Charge Ready is a program that SCE is running to  
23 install charging stations at noncommercial  
24 properties. The segments are workplace charging,  
25 opportunity charging, like at malls or sport

1 events, things like that, fleet charging and  
2 MUDs. And the way it works is that we go out, we  
3 start a program. We advertise to folks. We've  
4 marketed, so on and so forth. We own all the  
5 infrastructure and install the infrastructure on  
6 our side of the meter. And we also own and  
7 operate and maintain the infrastructure on the  
8 customer side of the meter.

9           And then what we do is we have stub outs,  
10 called make-ready stub outs, that customers can  
11 then go ahead through our rebate program and  
12 install electric vehicle servicing equipment on  
13 top of those -- on top of those items.

14           The amount of rebate that we give is  
15 based on whether they're in a DAC or not. They  
16 get 100 percent if they're a DAC. And they get a  
17 minimum of five units if they're in a DAC also.

18           Next slide.

19           So we've been at this since February of  
20 2017, actually January. We're up to 103 -- I  
21 mean, 1,003 charge ports installed at the  
22 various -- at the various sites. We have 65  
23 projects, so it's approximately 15 charging ports  
24 per site.

25           Next slide.

1           So this is a breakout of the number of  
2 sites per different marketing segment. By far,  
3 the workplace charging is the largest, it's at 40  
4 percent or so -- or 40 projects, I should say.  
5 Destination centers come in next at 23, fleet  
6 come in at 8, and MUD's come in at 3 projects.

7           And the next slide, too, it shows,  
8 actually, the breakdown if you want to know a  
9 little bit -- well, excuse me, the next graph  
10 next to it shows the breakdown as far as whether  
11 it's a federal customer or private business, and  
12 so on and so forth, so mostly private business.

13           Now the next slide actually shows that  
14 we've had 440 customers that have applied. It's  
15 first-come-first-served type of program. And  
16 like I said, out of all those, we have three  
17 sites that are MUD-based.

18           MS. HARAMATI: Can you say what that  
19 acronym means?

20           MR. DRESTI: Multi-unit dwellings.  
21 Sorry, it's an acronym world. What can you say?

22           And that's it.

23           MS. STOVER: Hi. My name is Alice  
24 Stover. I'm the Director of Customer Programs at  
25 MCE. So MCE is a California source community

1 choice aggregator. We've been around since 2008  
2 and we've been doing energy efficiency programs  
3 since late 2012.

4           The first energy efficiency program that  
5 we launched was a multifamily program. And one  
6 of the things that we noticed with that program  
7 was that we had -- somewhere around two-thirds of  
8 our participants were low-income properties,  
9 despite it not necessarily being targeted at low-  
10 income customers.

11           So just towards the end of last year, we  
12 launched a complementary program called LIFT  
13 (phonetic). I should say, our Energy Efficiency  
14 Program is funded through the CPUC Energy  
15 Efficiency funds. And our LIFT pilot is funded  
16 through the low-income funds from the CPUC. And  
17 our objective with this pilot is to blend the  
18 funding from those two program sources and  
19 building on the existing infrastructure that we  
20 had in our multifamily program and build out some  
21 offerings specifically for those low-income  
22 properties.

23           So our Multifamily Program is a  
24 comprehensive program. We do technical  
25 assistance, rebates for whole building work,



1 common area work, as well as in the regular  
2 energy efficiency program, some direct install  
3 measures. With the LIFT Program, we're going to  
4 add on top of that and provide a lot more of a  
5 robust in-unit work at no cost, while also  
6 encouraging properties to go through the regular  
7 EE program for whole building measures or common  
8 area measures.

9 I wanted to talk a little bit about some  
10 of our strategies and a few challenges, and then  
11 we can -- yeah.

12 So one strategy that we employ at MCE, we  
13 call it the single point of contact, and this is  
14 the theory around our program design. And the  
15 idea there is we really want to bundle as many  
16 energy and resource conservation offerings as  
17 possible for our customers when we -- when we  
18 have a point of contact with them.

19 So, for example, we've had a long  
20 partnership with the water agency to install  
21 water saving measures. You know, the Low-Income  
22 Program is an example of this. We also partner  
23 with the Green and Healthy Homes initiative to do  
24 health upgrades, safety upgrades. And now we  
25 started building out a few other complementary

1 programs, including a Multifamily EV Program to  
2 complement a very similar offering that PG&E has  
3 in our service area.

4           And we see two benefits to this program  
5 design. One, we're able to reach more properties  
6 because each of those agencies that we partner  
7 with has a different touch point and different  
8 sort of point of access to customers. And we  
9 also get a much more comprehensive understanding  
10 of the needs and challenges associated with that  
11 property and what they're facing.

12           So I guess one good example of this, we  
13 had a property developer come to us. They were  
14 really concerned about water usage on their site.  
15 So our technical assistance includes that energy  
16 and a water assessment. And so they weren't  
17 necessarily interested in the energy component of  
18 it. But by being able to offer the water  
19 assessment alongside the energy assessment, we  
20 did both water and energy efficiency upgrade or  
21 upgrades, and now are employing other  
22 opportunities, such as the health upgrades at  
23 that site, as well.

24           I think on the -- I just wanted to speak  
25 quickly to two challenges. I think data

1 collection, and then verification, is the  
2 challenge for us. I know it's been mentioned  
3 here today, but the income restrictions are not  
4 uniform across all of the programs that we work  
5 with. And some of them have quite low  
6 restrictions. And so we find significant gaps  
7 between the customers who qualify for programs  
8 and those who are actually experiencing problems,  
9 stress around being able to pay for energy.

10           And then the other one is just the  
11 verification process for income qualification.  
12 It's challenging. Especially in today's  
13 political climate, there's some resistance to  
14 collecting data. That's another challenging  
15 component. And then I think cost effectiveness  
16 is another challenge that we face. So we see a  
17 lot of value in this approach of combining  
18 multiple streams of funding and doing really  
19 comprehensive projects. But it tends to be less  
20 cost effective than sort of focusing on a very  
21 narrow set of measures. And with some of the  
22 funding sources that we're working with, we do  
23 have a lot of pressure to be cost effective in  
24 what we're doing. So we see that as sort of, you  
25 know, pulling us in two different directions.

1           And then one last thing on the technology  
2 front. So with our LIFT Program, we are -- we  
3 have a focus on fuel switching to heat pumps from  
4 gas appliances. And then we also will be adding,  
5 like I said earlier, adding on incentives for  
6 low-income customers to purchase EVs at those  
7 sites that receive the free -- or the fully paid  
8 for charging station to sort of, you know, help  
9 round out that offer.

10           MS. HARAMATI: Okay. Thank you.

11           So next we'll go to the prepared  
12 questions. And I want to invite the  
13 Commissioners to jump in here. So you may have  
14 follow-up questions or want to ask questions of  
15 your own on the topic, so feel free to do so.

16           So the first question is really about  
17 innovative technologies. So one of the things  
18 that we've heard is that not all building owners  
19 or potential participants in programs want to be  
20 Guinea pigs, right, for new technologies. So  
21 what are some of the more appropriate emerging  
22 technologies that would work well within  
23 multifamily applications?

24           COMMISSIONER MCALLISTER: Let me just --  
25 I think this is Panel I questions that are up,

1 and we need Panel II up there.

2 MS. HARAMATI: Yeah.

3 COMMISSIONER MCALLISTER: These are not  
4 your questions; correct?

5 MS. RAITT: I'm sorry.

6 MS. HARAMATI: So the first question is:  
7 What are some of the technologies that would be a  
8 good match for the multifamily sector, and then  
9 any potential differences between the  
10 technologies for low-income customers versus  
11 other multifamily?

12 And potentially, Ram or Andy, maybe you  
13 guys can start.

14 MR. BROOKS: Well, I think across the  
15 board the technologies that we need to kind of  
16 focus on right now are those that impact and  
17 effect when we use energy, as opposed to  
18 necessarily how much energy we're using. With  
19 the kind of 50 percent renewables by 2030, the  
20 intermittency of those is going to be an issue  
21 that we have to deal with across the board. So I  
22 think technologies that can help deal with that,  
23 regardless of the market sector or the building  
24 type, are going to be really important. So  
25 we've -- I think anything having to do with

1 storage, load shifting, behavior modification,  
2 those are all technologies that are going to be  
3 critical across the board and are perfectly  
4 applicable in low-income multifamily buildings.

5           So our focus has primarily been on  
6 looking at heat pump technology combined with  
7 thermal storage. And we've done that both  
8 through the EPIC projects that we're working on,  
9 and then we're in the fortunate position of being  
10 able to do research in parallel with implementing  
11 programs. We've been able to move technologies  
12 and strategies that have worked in the kind of  
13 demonstration world into our programs as we kind  
14 of prove that they're working.

15           COMMISSIONER MCALLISTER: Andrew, could  
16 you describe --

17           MR. BROOKS: Yeah.

18           COMMISSIONER MCALLISTER: -- just quickly  
19 what a successful thermal storage project looks  
20 like in your context?

21           MR. BROOKS: Yeah. So most of the  
22 projects that we're -- the heat pump technologies  
23 that we're looking at are focused on domestic hot  
24 water, so providing hot water for potable uses.  
25 And it's a very kind of straightforward retrofit.

1 You know, as far as kind of emerging technology  
2 retrofits go, it's about the most straightforward  
3 that you can deploy. And we're going, again,  
4 from like anywhere from 60 to 80 percent  
5 efficient gas appliances to, you know, 200- to  
6 300-plus percent efficient heat pump technology.  
7 So there's a huge gain in just efficiency just  
8 from the technology itself.

9           And then pairing that with excess storage  
10 capacity, so the ability to store large volumes  
11 of either hot water or, in some cases where the  
12 heat pump is also providing cooling, you can also  
13 provide stored chilled water. You can use those  
14 heat pumps during off-peak grid hours to generate  
15 that hot and chilled water and then store it for  
16 during peak grid events or, you know, peak  
17 pricing hours and then draw off those tanks, so  
18 that you don't have to use -- you don't have to  
19 run the heat pumps and draw power at those  
20 periods of time.

21           COMMISSIONER MCALLISTER: Are you mostly  
22 operating at the individual unit level or are you  
23 doing larger heat pump systems that have central  
24 storage?

25           MR. BROOKS: Both. So in the EPIC

1 project that we're working with Nehemiah Stone  
2 and Billy Green and Redwood Energy, that project  
3 is looking at four different demonstration sites,  
4 all of which have different configurations. Two  
5 of them have central heat pump chiller plants  
6 that provide heating and cooling and domestic.  
7 And then two of them -- one of them has  
8 individual heat pump water heaters serving each  
9 individual unit. And one of them has central  
10 heat pump water heaters that it's kind of a  
11 hybrid between individual units and central.

12 All of them are exploring what the  
13 appropriate thermal storage strategies would be  
14 in that context and basically determining, you  
15 know, what temperature water do we have to  
16 produce? What do we have to store at? How long  
17 can we ride through those peak events without  
18 causing inconvenience to the occupants? And I  
19 think that's ultimately going to be -- ultimately  
20 going to be critical right now with that --  
21 still, batteries are going to be great for solar.  
22 But right now, using that solar energy to drive  
23 heat pumps that can then produce hot or chilled  
24 water that can be stored is still, I think, more  
25 cost effective. And the technologies are off the



1 shelf. You know, the heat pump technologies are  
2 available. Tanks are tanks. It's really a  
3 matter of dialing in what the control strategies  
4 and algorithms are to optimize it and what kind  
5 of signals we can feed into these systems to tell  
6 them when to run and when not to.

7           COMMISSIONER MCALLISTER: Are you  
8 doing -- so this is great. I could go down this  
9 rabbit hole for a long time, but I've just only  
10 got more question.

11           So are you integrating the hot and the  
12 cold side such that say when you've got a  
13 refrigeration loop -- when the heat pump is  
14 producing refrigeration or cool, are you using  
15 the waste heat, like on the hot side at the same  
16 time for hot water or whatever?

17           MR. BROOKS: One of the -- two of the  
18 projects that we're studying under the EPIC  
19 project do have that capability where when it's  
20 producing chilled water, the warm water that  
21 comes back from that chilled loop is used to  
22 preheat the hot water --

23           COMMISSIONER MCALLISTER: Right.

24           MR. BROOKS: -- on the domestic side, so  
25 it's an energy --

1 COMMISSIONER MCALLISTER: This is great.

2 MR. BROOKS: -- recovery process.

3 COMMISSIONER MCALLISTER: This is great.

4 All right, I love it. I love it.

5 MR. BROOKS: But those are kind of not  
6 necessarily like primo multifamily technology.  
7 You know, they're not the -- right now they're  
8 not quite at the point of being totally effective  
9 for multifamily. So on our next EPIC project,  
10 one of the technologies that we're very much  
11 looking forward to looking at are new unitary  
12 three-in-one heat pumps that provide heating,  
13 cooling and domestic at, you know, a smaller  
14 package and probably in a much more simple, from  
15 a control standpoint, a much more simple  
16 application.

17 COMMISSIONER MCALLISTER: Great. Thanks.  
18 Thanks a lot.

19 COMMISSIONER HOCHSCHILD: Thank you. And  
20 I just wanted to offer thunderous agreement about  
21 the prospect of more heat pumps being able to  
22 help, particularly just given where we are now  
23 with the renewable situation in California not  
24 yet having regionalization, we've having to turn  
25 off every single day in the state of California

1 some solar or wind projects. And what we want  
2 ultimately is to have a happy hour where heat  
3 pumps and EVs are plugged in and making use of  
4 that surplus energy. And, obviously, that's an  
5 efficiency measure that can really help with our  
6 renewables goals. And so I really want to  
7 encourage you and say again how grateful I am for  
8 the tour that you led Commissioner McAllister and  
9 I on.

10 I had a question, actually, for Dave from  
11 the Fresno Housing Authority, just about the  
12 nature of the Section 8 opportunity. In  
13 particular, you mentioned the interest from the  
14 owners in being able to reduce sort of headaches  
15 and maintenance. And I would imagine transition  
16 to LED lights is a big help in that regard. Can  
17 you just give us a sense of the Section 8 housing  
18 you're looking at, what portion of the lighting  
19 is still incandescent or not yet LED and how that  
20 transition is proceeding?

21 MR. BRENNER: I wouldn't want to put a  
22 percentage on it because I guess they don't have  
23 a good feel for it. A lot of it is not  
24 converted. Very little is converted.

25 I think just when you talk to those

1 landlords, it's, I mean, they have lighting, they  
2 have crime, they have issues like that. So from  
3 their perspective, the more lumens you're adding  
4 to your site, the better the site is. And so  
5 they're not really looking at it as these are  
6 awesome light bulbs that are energy efficient.

7 COMMISSIONER HOCHSCHILD: What would you,  
8 just you, what would you guess, what portion if  
9 incandescent today? I mean, could you even  
10 hazard a guess?

11 MR. BRENNER: I would say it's more than  
12 half --

13 COMMISSIONER HOCHSCHILD: Still?

14 MR. BRENNER: -- I'd guess.

15 COMMISSIONER HOCHSCHILD: Wow.

16 COMMISSIONER MCALLISTER: Well, you're  
17 talking about the part of the lighting that is  
18 under the control of the landlord? Or -- because  
19 the individual units, those people would be,  
20 presumably, replacing their own light bulbs;  
21 right?

22 MR. BRENNER: Correct.

23 COMMISSIONER MCALLISTER: Yeah.

24 MR. BRENNER: Yeah.

25 COMMISSIONER MCALLISTER: Okay. So we're

1 talking common area, outdoor, you know?

2 MR. NARAYANAMURTHY: In our experience a  
3 lot of the unit lighting is actually plug  
4 lighting --

5 COMMISSIONER MCALLISTER: Yeah.

6 MR. NARAYANAMURTHY: -- so it's not fixed  
7 lighting.

8 COMMISSIONER MCALLISTER: Right.

9 MR. NARAYANAMURTHY: There's very little  
10 fixed lighting in all of these units. So the  
11 plug-in lighting, I don't think they fall under  
12 the efficiency programs as much as the fixed  
13 lighting.

14 MS. HARAMATI: So I'll just ask a follow-  
15 up question to Alice around whether you think  
16 that there are differences in the technologies or  
17 the types of interventions that are useful for  
18 low-income multifamily customers versus non-low-  
19 income?

20 MS. STOVER: Well, I actually think it's  
21 important that we're willing to invest in the  
22 low-income programs so that the offerings that we  
23 put out there for low-income customers are good  
24 and things that they will appreciate and use and  
25 help them meet their needs, and I think

1 especially related to understanding energy usage  
2 and controlling usage.

3           So I guess I won't really speak too much  
4 to the technologies, but I just think that it's  
5 really important that we're not sort of doing it  
6 halfway but that we're really investing, and that  
7 it's quality work that we're doing in low-income  
8 property.

9           MR. BROOKS: I have something on that  
10 other point, just in terms of the technologies  
11 that might be applicable for low-income.

12           One of them is giving the tenants some  
13 understanding of how much energy they're using  
14 and when they should be using it versus when they  
15 shouldn't be using it. There are a number of  
16 products coming on the -- there are already a ton  
17 of products on the market, but there's more  
18 coming on. And the capabilities of those  
19 technologies, you know, varies from product to  
20 product from being as simple as just a light on  
21 the wall that says now is a good time to use  
22 energy versus a bad time to use energy, to the  
23 other side of the spectrum where it does that,  
24 but also is able to control the appliances in the  
25 apartment and load shift for you based on, you

1 know, varying inputs, so time-of-use pricing or  
2 other.

3           And I think that is a technology and a  
4 measure that's being under deployed in this  
5 market that is ultimately going to be really  
6 critical going forward.

7           COMMISSIONER MCALLISTER: So who -- so  
8 this morning we heard about OhmConnect, you know,  
9 or we -- somebody mentioned OhmConnect. And  
10 that's one kind of market-based way to get what  
11 you're talking about done.

12           I guess are there other pathways and  
13 other offerings that are --

14           MR. BROOKS: Oh, yeah.

15           COMMISSIONER MCALLISTER: -- that are  
16 gaining traction in the low-income multifamily  
17 sphere?

18           MR. BROOKS: Well, the ones that we've  
19 been looking at in our -- the ones we have in all  
20 of the EPIC demonstration projects under one  
21 grant is a product called NEXI (phonetic) that is  
22 kind of the simple just light that is based on --  
23 you know, it changes color based on a preset  
24 energy budget. It goes from green to yellow to  
25 red. So, you know, as the day progresses, as you

1 get closer and closer to what your preset energy  
2 budget is, it changes color and people know when  
3 to stop using. There's another product,  
4 Emberpulse. I mean, there are actually quite a  
5 few --

6 COMMISSIONER MCALLISTER: Yeah.

7 MR. BROOKS: -- products coming out,  
8 SkyCentrics. And some of the have demand response  
9 capability integrated into them, and I think  
10 that's kind of the next wave of what we're going  
11 to be seeing as emerging technology on that  
12 front.

13 COMMISSIONER MCALLISTER: Are any of  
14 those being sort of sponsored or sponsored by the  
15 utilities or sort of an interface with the rate  
16 structure at the utility, or the smart meter or  
17 whatever, is actually driving the response -- or,  
18 you know, the color of the light or whatever?

19 MR. BROOKS: Not that I'm aware of yet.  
20 I could be wrong, but --

21 COMMISSIONER MCALLISTER: Yeah. So,  
22 yeah, that was really a question for Edison.

23 MR. DRESTI: Well, if I can, this doesn't  
24 really pertain that much to low-income, but it  
25 can.



1           We have a Smart Thermostat Program that  
2 we kicked out for demand response called Save  
3 Power Days, where it's probably the biggest  
4 bring-your-own-thermostat program in the USA. We  
5 have about 50,000 customers onboard using devices  
6 like Nest, Ecobee, so on and so forth. And  
7 they're demand response, so they pre-cool and  
8 shut down, very cost effective. I think that  
9 could work in low-income, except for one thing.  
10 And the biggest issue is Wi-Fi network capability  
11 within the structure. And that's something that  
12 Ram was mentioning. And that's -- I don't know  
13 how we get around that. You're saying that there  
14 might be some other thermostats that can do that.

15           But very quickly, we reliably get through  
16 independent MMV (phonetic) anywhere from 700 to  
17 750 watts reduction when we call an event. The  
18 customer is not put out that much because they  
19 can just change the temperature whenever they  
20 want, and it seems to be a very reliable way to  
21 do business.

22           MR. NARAYANAMURTHY: Well, Mauro, I mean,  
23 maybe I'll add to that. I think that's a very  
24 valid point that you brought up that can be -- so  
25 there's the what you can do in the building shell

1 and what you can do for the behavior of the  
2 tenants. And one of the challenges related to  
3 the low-income tenants is that they don't have  
4 Wi-Fi; right? So then a lot of the technologies  
5 that are based on Wi-Fi, right, whether it's  
6 connected water heaters, connected thermostats,  
7 they all struggle with that.

8           So again this is one avenue we're  
9 exploring, actually, through one of the EPIC  
10 projects, too, is actually looking at Bluetooth  
11 connectivity because the CPUC has the Lifeline  
12 Program which gives an Android phone to the low-  
13 income tenants. So what we're looking at is,  
14 okay, hey, if you can get to the phone, right,  
15 and use the phone as a way to communicate,  
16 whether it's rates, whether it's signals for  
17 devices, whatever it is; right? So that's one  
18 avenue that we are exploring because of the fact  
19 that I think in our experience we found maybe 15  
20 percent of people have broadband, and even fewer  
21 have Wi-Fi.

22           MR. DRESTI: And that could work.  
23 Something like that could work.

24           So as a follow-up, though, real quick, to  
25 make it scalable, we use Open 8 Air (phonetic)

1 that we helped -- that you guys helped us  
2 develop. And I think that's a great protocol to  
3 talk from a utility to devices, not rely on a  
4 manufacturer's portal and make it difficult to  
5 scale up.

6 COMMISSIONER MCALLISTER: Yeah. I would  
7 just -- I want to second that in general terms,  
8 that depending on proprietary approaches, it  
9 probably has some pretty large drawbacks. So if  
10 we can sort of -- if the utility can kind of, you  
11 know, shepherd the programmatic environment or  
12 programmatic approach to kind of getting into,  
13 you know, being relatively uniform and  
14 standardized about it --

15 MR. DRESTI: Yeah.

16 COMMISSIONER MCALLISTER: -- that would  
17 be good.

18 MR. DRESTI: The key aspect to the  
19 program is that we use an open source software to  
20 control the devices, but we don't particularly  
21 control devices. We work with the customer --  
22 with the clients -- yeah, the vendor's  
23 proprietary network.

24 COMMISSIONER MCALLISTER: Yeah.

25 MR. DRESTI: But we hold them to a

1 performance contract, and that's all we really  
2 need to worry about, you -- we want this amount  
3 of DR, you guys figure out how to do it and make  
4 sure that the load is there.

5 MS. HARAMATI: The next question is kind  
6 of, you know, one of the general themes of the  
7 day, which is really around. I guess I'd like to  
8 pose this to Dave.

9 So you have sort of a unique perspective  
10 as being a building owner and operator. So in  
11 your experience, what are some of the barriers to  
12 broader adoption of innovative distributed energy  
13 resources? And I just want to take a moment to  
14 kind of say what those are because we talked  
15 about it at the beginning of the day. Eugene  
16 included it in his presentation, but -- and he  
17 didn't forget. And so we're looking at pre-  
18 commercial energy efficiency, demand response,  
19 storage, innovative solar, solar thermal, things  
20 that are maybe not as widely adopted already, and  
21 electric vehicle chargers.

22 MR. BRENNER: Yeah. So I think we are  
23 looking at all of those except storage, at this  
24 point. There's a lot of learning that has to  
25 happen, partly because there's a variety of

1 different programs out there. There's a lot of  
2 unknowns in how this stuff is all changing so  
3 fast. And so we rely a lot -- like on the LADWP  
4 program, they were excellent in helping us  
5 understand things.

6 I think there's a lot, as far as the  
7 solar. We're really -- future rate changes and  
8 all that structure is really confusing to us.  
9 And like the V-dim (phonetic) process is really  
10 hard for us. And so stuff like that has really  
11 set us back a lot and so -- and partly, we have  
12 just too many of these things happening at once  
13 and we can't focus. I mean, this is not our  
14 mission. Our mission is housing, that's what we  
15 do. This is actually like fourth or fifth down  
16 our list of priorities.

17 So I think those things are the main  
18 thing that are holding us back.

19 MS. HARAMATI: And are there some  
20 solutions or things that you've seen that have  
21 worked, that have helped getting these innovative  
22 technologies into your buildings?

23 MR. BRENNER: I think the flexibility and  
24 kind of the holistic approach that LADWP took, it  
25 was sort of a bigger conversation of them helping

1 us with a lot of things. If there had been more  
2 time on the timeline, we would have really taken  
3 a lot of their technologies that they had  
4 proposed. And I think the same is going to be  
5 true as the work we're doing with EFRI right now,  
6 is that we need a lot of time to understand this  
7 stuff. And the more they can show us  
8 demonstrations on controls and stuff like that  
9 the more we're going to be onboard.

10 MS. HARAMATI: Okay. Thank you.

11 MR. DRESTI: Okay, I'll talk to it in the  
12 context of multi-unit dwellings for the MUD  
13 folks.

14 I showed what was going on in Charge  
15 Ready, specifically, to show that we have had  
16 some successes but we really have challenges in  
17 trying to get electric vehicle chargers in these  
18 communities. The main reasons that we've had  
19 some problems were charging stations are really a  
20 low priority for the property owners. They  
21 really don't know how many people are going to  
22 utilize them. Customers may not be interested,  
23 that particular customer interest for electric  
24 vehicles at the time. And then there's other  
25 issues like parking management issues. As you go

1 ahead and change out or touch a parking lot, you  
2 have to make it meet the new requirements. And  
3 that's sometimes a little more onerous than  
4 current property owners want to work with.

5           So I think what will help, what we did is  
6 that we had a couple of workshops with apartment  
7 owners, try to get them up to speed on what's  
8 going on. We really didn't have a lot of success  
9 at that. There wasn't a lot of interest. So we  
10 resorted to going out and having one-on-one  
11 conversations through our account managers with  
12 building owners. We had 147 of those in the past  
13 year-and-a-half, which resulted in the 35 charge  
14 stations we've put in.

15           So increased marketing does help. We  
16 need to, I think, also target new construction as  
17 the market grows because it's going to be lower  
18 cost, easier for us to install and bring down the  
19 costs of the devices. Possibly additional third-  
20 party incentives for used vehicles, for used EVs,  
21 that type of thing, so there's more of them out  
22 there. It's still a new market. Vehicles last  
23 about 11 years. Those are ICE (phonetic)  
24 vehicles, so EVs will probably last a little bit  
25 longer. And it's going to take a little bit more

1 time for this market to get to this market  
2 segment.

3 MS. HARAMATI: Okay, great. Thank you.

4 So before we move on to the golden carrot  
5 question, I want to just return to heat pumps for  
6 a moment, since I know this is a topic of  
7 interest, and just pose the question to Ram and  
8 Andy, what could be done, in your opinion, to  
9 increase the adoption of heat pumps in the low-  
10 income multifamily apartments, given the cost  
11 issues with installation, the skilled labor  
12 that's needed, and also concerns about operating  
13 costs of switching from natural gas water heating  
14 to maybe a heat pump coupled with electric  
15 resistance heaters that could potentially  
16 increase the electric bill of the customer?

17 MR. NARAYANAMURTHY: So I think from an  
18 operating costs perspective, one of the things  
19 that we've been looking at is this whole concept,  
20 if you're doing a holistic upgrade, there are  
21 these constraints around how the property owner  
22 gets paid for or the rent gets offset for the  
23 utilities, using the utility allowance  
24 calculators. So when you do a holistic upgrade,  
25 sometimes it actually makes sense for the



1 property owner to take on the entire energy use.  
2 And, in fact, that's my point of discussion we  
3 are having on how do you manage behavior?

4           So let's say you're putting in heat pumps  
5 and putting in solar at the same time, it might  
6 actually make sense for the property owner to  
7 make it a master metered property. That way they  
8 can manage and actually get the benefits of the  
9 heat pumps without passing the costs onto the  
10 tenants.

11           One of the other challenges we are seeing  
12 with heat pumps and water heaters is that the  
13 distribution system network, the electric  
14 distribution networks aren't designed for  
15 electrification. Most of the distribution  
16 systems are designed for gas water heating, gas  
17 space heating, and so there are some costs that  
18 we need to consider. And we have to figure out  
19 who pays for those costs, because the property  
20 owners cannot sustain those costs.

21           So today, I think one example is the  
22 Charge Ready Program where the utility is able to  
23 rate base the cost of increasing the  
24 infrastructure to provide the EV charging. And we  
25 might have to look at something similar for the

1 heat pump side.

2           But overall, I think the opportunity for  
3 heat pumps can be high if we can manage the  
4 tenant cost, the occupant cost through some kind  
5 of a financial mechanism.

6           MR. BROOKS: And I would just mainly  
7 point out about, in terms of the potential for  
8 increased costs associated with heat pumps,  
9 that's still pretty speculative at this point.  
10 We don't really know whether that's going to be  
11 the effect. And so far we've been somewhat  
12 heartened by the projects that we have been able  
13 to do post-utility analysis on that we've done  
14 fuel switching from gas heating and space heating  
15 and water heating to heat pumps. And again, we  
16 don't have a very large pool yet, but of the  
17 projects that we've seen the interesting tidbit  
18 has been that the utility costs have actually  
19 gone down, and that's before we've actually even  
20 turned on the PV system and before we've adjusted  
21 their utility base, their gas heating baseline.

22           So those are two things that are going  
23 to -- you know, for all the LIHTC (phonetic)  
24 projects where we're doing fuel switching, we're  
25 also doing solar at the same time, so the solar

1 is going to offset the increased electric load  
2 anyway. But even without that, across the board,  
3 when you switch from gas heating to electric  
4 heating, you go into a different utility tariff.  
5 And that, even without those two things enabled,  
6 we've seen on the couple of projects that we've  
7 done the analysis that bills have come down.

8           So I wouldn't say that that's necessarily  
9 going to be the case across the board, but it may  
10 not be as much of a concern as people are  
11 thinking.

12           COMMISSIONER MCALLISTER: Well --

13           MR. DRESTI: And there's a --

14           COMMISSIONER MCALLISTER: -- oh, go  
15 ahead.

16           MR. DRESTI: Sorry. There's another  
17 piece, too. That's for natural gas. But some  
18 customers are served out in the valley by  
19 propane, which are -- oh, sorry, that's the case,  
20 so --

21           MS. RAITT: Use your microphone.

22           MR. DRESTI: Yeah. It sounds -- sorry, I  
23 was just in the moment here.

24           Some customers are actually fueling their  
25 heating through propane, which I understand is

1 far more expensive in terms of dollars per BTU.

2 COMMISSIONER MCALLISTER: Uh-huh. I  
3 wanted to ask just about the health and safety  
4 aspects of, you know, of combustion generally,  
5 but also, well, just is there -- I mean, it seems  
6 like there is a benefit, indoor air quality and  
7 just health and safety generally. Is that a real  
8 thing that you perceive from customers or in any  
9 other way?

10 MR. BROOKS: It's definitely a real thing  
11 in that we've done combustion appliance testing  
12 on thousands of --

13 COMMISSIONER MCALLISTER: Yeah.

14 MR. BROOKS: -- wall furnaces and  
15 furnaces and they fail. You know, they're still  
16 in combustion gases back in the department.  
17 There are natural gas leaks all over the place.

18 COMMISSIONER MCALLISTER: Yeah.

19 MR. BROOKS: So it is definitely a real  
20 thing. Whether it's a perceived thing and  
21 whether it's leading to health consequences from  
22 the residents, we don't really have that data, or  
23 at least we don't have that data, but I suspect  
24 that it is. And it certainly is a valid reason  
25 for removing them.

1 MS. STOVER: One component of our LIFT  
2 pilot is the fuel switching component. And with  
3 that we're -- we'll be doing pre-monitoring and  
4 post-monitoring of the equipment, so we'll be  
5 measuring the emissions onsite before removing  
6 the gas equipment. We're also doing pre-surveys  
7 and post-surveys of residents, so hopefully  
8 through this we'll be collecting some data on the  
9 perceived impacts of equipment.

10 COMMISSIONER MCALLISTER: Great.

11 MS. HARAMATI: Great. Thank you. So I  
12 guess now we'll turn to the golden carrot  
13 question, which I think is kind of the question  
14 that's on everyone's mind.

15 And so what are the main barriers that  
16 we've heard about? It's the lack of bandwidth  
17 for multifamily building owners just in terms of  
18 time and being able to get their attention and  
19 kind of say this is something that is worthwhile  
20 and, you know, there's money to be had, it will  
21 improve the value of your buildings.

22 So I guess maybe we'll start with Dave,  
23 and then go to Ram and Andy, and others can chime  
24 in.

25 So what does a delicious golden carrot

1 look like to building owners? You know, what can  
2 we offer them, we as government or the utilities,  
3 to convince landlords and building owners to want  
4 to do a retrofit?

5 MR. BRENNER: Yeah. I guess I think for  
6 us, it's just a combination of there being some  
7 way to capture a portion of the revenue, and then  
8 mixed with technical assistance which builds up a  
9 little bit of confidence in the technologies that  
10 we're putting in. And if you can get those two,  
11 it doesn't have to be a lot of revenue coming  
12 back, it doesn't have to be a ton of technical  
13 assistance, but a little of the two can put a  
14 project together really quickly.

15 MR. NARAYANAMURTHY: In our experience, I  
16 think the concept of a one point of contact, I  
17 think PG&E calls it the program concierge  
18 concept, where a property owner can go to one  
19 person who can manage both the utility programs,  
20 the non-utility programs, and bring in financing  
21 packages together so that the property owners  
22 don't really have to break their head thinking  
23 about it.

24 MR. BROOKS: And, yeah, I guess would  
25 agree with that, the kind of one-stop-shop model

1 has been talked about a lot. I think picking up  
2 where Martha mentioned, I think the next kind of  
3 iteration of that is really moving more towards  
4 the notion of like a clearinghouse-type concept,  
5 and this is actually something we're  
6 experimenting with right now. We have a variety  
7 of funding sources coming in, all to deliver  
8 energy efficiency and solar. And we have  
9 building scientists out in buildings all day long  
10 but they -- and so they're able to identify  
11 health and water and other related issues, but we  
12 don't have the same pool of funding to offset  
13 those things. So we can identify them, but we  
14 can't help necessarily address them.

15           The notion of having a clearinghouse  
16 where program -- regional program administrative  
17 agencies can kind of plug into that, you know the  
18 energy efficiency programs and, you know, take  
19 out what metrics they want, so if it's a health  
20 agency and they're looking to reduce the number  
21 of asthma-related ER visits, I mean, that's the  
22 metric that they're going for, they can put money  
23 into a clearinghouse, put their funding into a  
24 clearinghouse and pull out those types of  
25 benefits. If it's, you know, the number of

1 projects that tighten their envelope down to one  
2 ACH and install heat recovery ventilation, you  
3 know, that could be the metric by which they're  
4 trying to -- that they're trying to achieve.

5           But I think the notion of pooling sources  
6 of funding that are beyond just energy, not  
7 just -- you know, we've already got some solar  
8 and efficiency combining now which is great,  
9 those two had been siloed for so long, now at  
10 least we've made some progress there. But if we  
11 can move on to integrating those health dollars  
12 and structural assessments and other kind of  
13 housing-related program dollars into a more  
14 central location where building owners not just  
15 access the technical assistance but the funding,  
16 as well, through a streamlined mechanism, I think  
17 that's probably the next evolution of that.

18           COMMISSIONER MCALLISTER: How much are  
19 you -- how many jurisdictions that you work in  
20 have programs to sort of update the healthy  
21 stock, you know, lead paint abatement and just  
22 kind of general refurbishment?

23           MR. BROOKS: I think they all have some  
24 version of that.

25           We're working with -- we just started a



1 project with the Santa Clara HCD. And their  
2 objective is to lower the operating costs of  
3 affordable housing in their jurisdiction. So  
4 it's not necessarily energy efficiency, it's  
5 lowering the operating costs however they want.  
6 They wanted to tap into the BAYREN Program, which  
7 is one of the programs that we implement in their  
8 jurisdiction. But in their jurisdiction, they  
9 have a municipal electric utility, so they could  
10 only get a portion, only the gas funds, from the  
11 BAYREN, and that wasn't enough. So what they're  
12 doing is taking their housing dollars, and  
13 they've also reached out to the municipal utility  
14 to come into this and basically layer those  
15 dollars on top of the BAYREN infrastructure.

16 And so their main objective really is to  
17 lower the operating costs, to do any work that  
18 will do that, and they're layering their dollars  
19 on top of the energy efficiency programs, so it's  
20 kind of a light version of that. And I think  
21 every jurisdiction has some funding available for  
22 those types of things.

23 COMMISSIONER HOCHSCHILD: You know,  
24 Mikhail, you mentioned the sort of golden carrot  
25 for the building owners. I think it's also a

1 golden carrot for policymakers here, specifically  
2 with the heat pump question, which is that unlike  
3 energy efficiency and unlike rooftop solar which  
4 reduce the number of kilowatt hours procured from  
5 utilities, heat pumps actually increase it;  
6 right? Because most of the costs of the system  
7 are fixed, you're spreading those fixed costs  
8 over a greater number of kilowatt hours. And it  
9 is a downward force long term on electric rates.

10           And the same dynamic is true for the 5  
11 million electric vehicle goal where Commissioner  
12 Scott is leading. That will increase electric  
13 load by eight percent, and you have a downward  
14 force there on rates over time. I think it is  
15 useful to track that, or at least to do some  
16 estimates for heat pumps, as well.

17           I don't know, Commissioner McAllister, if  
18 anyone is making those kind of --

19           COMMISSIONER MCALLISTER: Yeah. So the  
20 thing is that depends on them not pushing up the  
21 peak; right? Because the driver of a new  
22 (indiscernible) that would then force rates up  
23 would be, if you had the -- you know, if it  
24 forced, you know, an expansion in peak capacity.

25           And so that's, you know, your point,

1 Andrew, about making sure the shift load or, you  
2 know, basically, load shape in a way that  
3 improves load factors, you know, is really  
4 critical to making this whole thing work. And so  
5 I think that if we're -- any initiative to adopt  
6 heat pumps at scale would really have to come  
7 along with demand response. It's just integral  
8 to the program, you know, particularly if we're  
9 going to subsidize this, it's like we've got to  
10 subsidize it in the right direction.

11 COMMISSIONER HOCHSCHILD: Right.

12 COMMISSIONER MCALLISTER: So --

13 COMMISSIONER HOCHSCHILD: Right. Fair  
14 point.

15 MS. HARAMATI: Those are all the prepared  
16 questions we had.

17 Do the Commissioners have follow-up  
18 questions, or Advisers?

19

20 COMMISSIONER HOCHSCHILD: No. I just wanted  
21 to thank all the panelists. There's really  
22 tremendous work happening across the board. You  
23 guys are doing terrific stuff, so keep it up.

24 COMMISSIONER MCALLISTER: Does Sandy  
25 or --

1 COMMISSIONER SCOTT: I have one question.

2 COMMISSIONER MCALLISTER: Yeah? Go  
3 ahead. I have one other question, but I'll come  
4 back to it.

5 COMMISSIONER SCOTT: Okay. Yeah. Mine  
6 is not necessarily a question, but there's a lot  
7 of really good information here. And I think to  
8 the extent that you and others around the  
9 audience and folks how are listening in on the  
10 WebEx have specific examples of things that  
11 worked really well that you can provide for us,  
12 or specific examples of things that just were a  
13 disaster and here's why, so don't run down that  
14 path, I think that will be helpful as we're  
15 trying to really think through how to put all of  
16 these components together. And we have lessons  
17 learned at the Energy Commission from some of the  
18 programs and projects that we have funded, but  
19 there's a ton of experience out here.

20 So just to kind of get nuggets from you  
21 on that I think would be really helpful. And I  
22 know we're at the end of time, so I won't ask  
23 folks for that right now. But if you'll send  
24 that into our docket or get that to us, that  
25 would be really helpful.

1                   COMMISSIONER MCALLISTER: Cool. So I  
2 want to just come back to a point I started to  
3 make in the morning, but just in terms of -- so,  
4 you know, you all are operating at the local  
5 level, you know, most of you and -- well, three  
6 out of five, at least. And the Edison and Ram,  
7 you're participating in these projects. And so I  
8 wanted to just see, really, or ask about the best  
9 way for local, state -- sort of  
10 local/regional/state collaboration to take place?  
11 I mean, you guys are down at the project level,  
12 you know, drumming up sort of interest and  
13 lessons and really doing stuff, you know,  
14 learning hard-won lessons.

15                   And, you know, I just want to make sure  
16 that we develop the structural -- our  
17 collaboration has legs to it for the long term,  
18 such that we build in the communications up and  
19 down the chain so that we don't miss things that  
20 are being learned on the ground and get them into  
21 policy in a relatively expeditious way and can  
22 feed those back, you know, help facilitate the  
23 learning across local jurisdictions. You know,  
24 if you're in Fresno, you're learning a bunch of  
25 great stuff. Well, how do we make sure that the

1 Bakersfield and the Redding and every place else  
2 kind of can build on what you're learning?

3           So think sort of structurally about how  
4 this conversation ought to continue. And then  
5 sort of at the local end of it, how the local  
6 entities that are doing the work on the ground  
7 can be best supported? And, certainly, that's  
8 resources, we all know that, but also just enable  
9 that in any other way too.

10           So Adenike, do you have any questions  
11 now? Okay, great.

12           Sandy? No. Okay. Great.

13           Thanks very much.

14           MS. RAITT: So we had scheduled a break,  
15 so we can take a break for 15 minutes. Back at  
16 2:45.

17           (Off the record at 2:30 p.m.)

18           (On the record at 2:49 p.m.)

19           MS. RAITT: Let's go ahead and take seats  
20 and we'll get going again. I know it's always  
21 hard to get started again in the afternoon.

22           COMMISSIONER MCALLISTER: Okay,  
23 everybody, we all want to get out of here on  
24 time, okay, so let's get moving.

25           MS. RAITT: Thanks. So we have a

1 presentation from Ted Lamm at UC Berkeley Center  
2 for Law, Energy, and the Environment.

3 MR. LAMM: Good afternoon. My name is  
4 Ted Lamm. I'm a research fellow at the Center for  
5 Law, Energy, and the Environment. Our programs  
6 work with stakeholders in state, local government  
7 industry, and advocacy to address California  
8 policy issues across the energy and environmental  
9 spheres.

10 Our Climate Change and Business Program  
11 is a collaboration with UCLA School of Law and  
12 Bank of America. And since 2009, we've produced  
13 over 20 policy reports on issues ranging from  
14 renewable energy to transportation, energy  
15 efficiency, land use and more.

16 This is some background that I think you  
17 all are very familiar with. As part of this  
18 series, earlier this year we identified the low-  
19 income multifamily energy efficiency sector and  
20 issue as an area that we could apply our  
21 resources. And specifically, we aim to build on  
22 the recommendations of the SB 350 Barriers Study  
23 with input and assistance from a number of people  
24 in this room, including but not limited to Eugene  
25 and Mike and some Energy Commission staff. And

1 we based our project, which is ongoing, on the  
2 structural and program barriers that you see  
3 here, which I think everyone is pretty familiar  
4 with, but in particular, split incentive problem,  
5 market delivery issues, and program integration  
6 issues came to the fore.

7           So this spring we convened a group of  
8 stakeholders in a convening model that we use  
9 frequently, which is a facilitated discussion  
10 that surfaces consensus solutions that we can  
11 then compile into a public research report. So  
12 we had 20 participants representing key state  
13 agencies, utilities, housing developers, and  
14 advocates, et cetera.

15           And the format that we use is the group  
16 collectively describes a vision of their ideal  
17 system for financing low-income multifamily  
18 energy efficiency retrofits. The group then  
19 identifies challenges to the creation of that  
20 system, proposes and discusses a wide range of  
21 solutions, some of which are consented, some of  
22 which create some disagreement to overcome those  
23 challenges. And then sometimes we prioritize  
24 really near-term high-priority action solutions  
25 that can be achieved in the near term.



1           So this was the six-part vision that the  
2 group identified. As you can see, the vision  
3 that the group identified aligned not only with  
4 the Barrier Study, but also much of what's been  
5 presented today.

6           The first item, number one, was a single  
7 entity for energy efficiency program  
8 administration. It's not possible to eliminate  
9 all complexity, as Isaac and others have  
10 demonstrated throughout the day. The sector is,  
11 itself, very complex. Layering efficiency and  
12 financing for efficiency on top of that is doubly  
13 complex. And there's a reason that current  
14 multiple programs exist. But participants  
15 described a vision where even if all that  
16 complexity can be packaged in one place so that  
17 users and consumers on the front end essentially  
18 don't see it and it's all, perhaps, behind the  
19 curtain, that could substantially increase uptake  
20 of efficiency programs.

21           Number two was long-term funding for  
22 state efficiency programs. The owners and  
23 developers in the group consistently emphasized  
24 the long-term and comprehensive way that they do  
25 their planning across all of their projects for a

1 property or set of properties and their desire to  
2 include efficiency retrofits in that long-term  
3 planning process, and the need for long-term  
4 secure funding opportunities if they're going to  
5 do that.

6           Number three was aligning financing  
7 opportunities with renovation and refinancing  
8 plans that exist outside of the efficiency  
9 sphere. Low-income, and particularly subsidized  
10 buildings, can have very complex financing  
11 restrictions, and also limited capital. And  
12 funds that are made available by the state need  
13 to be available at the trigger points, whether  
14 it's refinancing or a standard renovation on a  
15 10- or 25- or 30-year timeline. The funds need  
16 to be available then, so that they can be used at  
17 the right moment.

18           Other items in that vision were guarantee  
19 the minimum retrofit performance to minimum the  
20 risk, widespread owner, tenants and program  
21 access to building energy data, which AB 802 and  
22 the Los Angeles program described earlier are  
23 beginning to address, and that's to inform not  
24 only to get information to owners and developers  
25 to initiate projects, but also for those who are

1 contemplating projects to prioritize the  
2 retrofits that make the most sense and are most  
3 cost effective in a limited capital environment.

4           And then finally but not at all least  
5 importantly, support for tenant benefits and  
6 protection of affordable housing to ensure that  
7 current tenants aren't displaced and to ensure  
8 that non-monetary benefits are accounted for.

9           So in identifying challenges to achieving  
10 this vision, it is, in fact, an inverse, to some  
11 extent, of the vision. So in general, a lack of  
12 program coordination across the four or five  
13 multiple programs that currently exist, which are  
14 implemented by different staffs in two or three  
15 agencies, plus the utilities.

16           Number two was a lack of reliable long-  
17 term public funding, as discussed, to facilitate  
18 the integration of energy efficiency retrofit  
19 planning into long-term property planning.

20           And number three was a lack of confidence  
21 in savings, which goes to performance guarantees  
22 or other mechanisms to ensure that savings  
23 actually occur, as well as a lack of confidence  
24 in non-energy benefits which is the accounting  
25 for benefits that don't accrue in direct benefit

1 savings.

2           The solutions that the group came up with  
3 ranged pretty far, and we've just got a couple of  
4 highlights here.

5           Unsurprisingly, number one is the  
6 creation of some form of single statewide one-  
7 stop-shop program administrator that's been  
8 discussed, I think, by every panel and most  
9 speakers today. It's not a simple solution, but  
10 that was the one that came back to the top  
11 multiple times.

12           Another solution was considering the  
13 utility tariffs that involve shared benefits  
14 between utilities and customers.

15           And third were the development of metrics  
16 that really establish the value, whether it's in  
17 monetary or other terms, of non-monetary benefits  
18 such as quality of life, public health. And even  
19 a number of participants emphasized the  
20 importance of simple increased pride and sort of  
21 ownership in rental properties that are not  
22 always -- may not always feel that way to their  
23 tenants.

24           And in discussing these solutions, a  
25 potential program model that came to the fore

1 from one of our participants is a program  
2 implemented right now in Arkansas, which is  
3 called E-Utility (phonetic). It's an independent  
4 B Corp that operates a comprehensive energy  
5 efficiency retrofit program on behalf of a number  
6 of rural electric cooperatives and municipal  
7 agencies. And they've been able to, based on a  
8 relatively small program, they've been able to  
9 achieve a lot of the sort of one-stop-shop goals  
10 that different participants identified and that  
11 others today identified. And they really, they  
12 begin with the initial customer engagement all  
13 the way through implementation, and then down the  
14 road, verification.

15           And a couple of key items that their  
16 representative highlighted that have made their  
17 program successful is they go as far back as  
18 possible in their benchmarking so that data  
19 really relate as much to the property as possible  
20 and as little to the individual tenant or  
21 occupant as possible. And the State of Arkansas  
22 has created a state loss guarantee fund to  
23 support any retrofits that don't generate  
24 savings. So that was an example that we're  
25 looking into further to see how applicable it

1 could be to California and ways in which it might  
2 be adopted.

3           And another note on the third point here,  
4 the non-monetary benefits, this was an item that  
5 our participants across all state agencies and  
6 advocacy groups and housing developers all  
7 emphasized, which is the importance of accounting  
8 for these benefits which, as I said and as was  
9 discussed on the first panel today, really cover  
10 everything from public health to quality of life  
11 to, it would be very important also to consider,  
12 the most low-income customers who are perhaps  
13 under-using energy right now because they simply  
14 can't afford it and who, if given increased  
15 access to efficiency programs, might actually  
16 increase their use and identifying the customers  
17 for whom that is actually a good thing and where  
18 that should be considered a benefit.

19           So our next steps in our process are to  
20 organize follow-up discussions with owners and  
21 developers and reform proponents to really  
22 identify detailed elements of a one-stop-shop  
23 solution, to try to hammer out what that might  
24 look like in California. And as Commissioner  
25 Scott mentioned earlier, trying to identify

1 things that have worked really well, and also  
2 things that have really not worked well, in order  
3 to produce a pretty robust idea of what that  
4 program might look like. And then by the end of  
5 this year, a public research report which will  
6 include all of these findings, as well as  
7 supporting research.

8           There's my contact information, if you  
9 have any questions. If the Commissioners have  
10 any questions, I'd be happy to take them.  
11 Otherwise, thank you very much.

12           COMMISSIONER MCALLISTER: Great. Yeah,  
13 thanks. I thought the convening was excellent.  
14 I really, really want to give CLEE (phonetic) and  
15 Nathan (phonetic) and you're team kudos for doing  
16 that. And I'm really optimistic that's going to  
17 produce a solid report that we can use.

18           And maybe if you could sort of highlight  
19 the opportunities to provide input going forward?  
20 You sort of did that, but maybe you could be a  
21 little bit more --

22           MR. LAMM: Sure.

23           COMMISSIONER MCALLISTER: -- sort of  
24 concrete for people who want to participate, who  
25 maybe weren't at the convening.

1           MR. LAMM: Absolutely. Yeah. So we're  
2 in the process right now of scoping out a follow-  
3 up convening which will roughly follow the format  
4 that I described to you for our prior convening.  
5 And what we're really looking to do is to bring  
6 in a group of low-income multifamily owners and  
7 developers who have implemented efficiency  
8 projects in the past that, as I said, either have  
9 been successful or unsuccessful and can present  
10 case studies, essentially, that we can use to  
11 inform the broader solutions that have been  
12 proposed by our group. We already have a couple  
13 of developers who have agreed to work with us on  
14 this project. And we'd love to get a couple more  
15 in the room so we can have a robust list.

16           So I encourage anyone who is interested  
17 in joining to contact me and we can talk about  
18 bringing together that event.

19           Thank you.

20           COMMISSIONER MCALLISTER: Great. Thanks  
21 very much, Ted.

22           MS. RAITT: So next is the third panel of  
23 the day to discuss Encouraging Investment and  
24 Market Adoption.

25           So if you're on the panel, please come up



1 to the front table. We have seats for you.

2 MR. LEE: Good afternoon. This is Eugene  
3 Lee back again. This is Panel III regarding  
4 Encouraging Investment in Market Adoption.

5 Next slide.

6 So the purpose of Panel III is to discuss  
7 the potential strategies to increase the  
8 financing opportunities to improve the energy  
9 performance in multifamily buildings and  
10 including ways to better utilize the incentives  
11 and attract additional capital.

12 We're joined today by several panelists,  
13 and I'll allow them to introduce their  
14 organizations and their respective roles.

15 MS. CARRILLO : Good afternoon. My name  
16 is Deana Carrillo and I'm the Executive Director  
17 of the Alternative Energy and Advanced  
18 Transportation Financing Authority. We're a  
19 State Treasurer -- or we're a financing authority  
20 under the State Treasurer's Office, currently  
21 collaborating with the Public Utilities  
22 Commission on an Energy Efficiency Financing Hub,  
23 so that's part of my role here today is we  
24 monitor multiple programs.

25 MS. WANG: Hi. I'm Steph Wang with

1 California Housing Partnership. And we are  
2 experts on how -- on affordable housing finance  
3 and technical assistance, with also a specialty  
4 in sustainable housing, focusing on energy and  
5 water improvements, working with our nonprofit  
6 affordable housing partners and housing  
7 authorities to help them access energy efficiency  
8 and clean energy incentives and financing  
9 opportunities.

10 MR. CIRAULO: Good afternoon. I'm Rich  
11 Ciraulo with Mercy Housing. I'm the director  
12 of -- Regional Director of Portfolio Syndication.  
13 And Mercy Housing is a local subsidiary, a  
14 California subsidiary of Mercy Housing,  
15 Incorporated, which is a national affordable  
16 housing developer, actually one of the largest  
17 affordable housing developers in the country.  
18 Mercy Housing California is a developer, owner,  
19 property manager and service provider of the  
20 housing that we provide. We have 132 properties  
21 in California consisting of 8,800 units, serving  
22 about 18,100 residents. And our portfolio is  
23 sort of broken down, about 49 percent family, 31  
24 percent senior housing, and 14 percent supportive  
25 housing.

1           MR. HODGINS: Good afternoon. My name is  
2 Dave Hodgins. My company is Sustento Group. We  
3 get hired by local governments, nonprofits,  
4 utilities to design and deliver efficiency  
5 programs at scale. L.A. Better Buildings  
6 Challenge is one that takes up a lot of my time  
7 these days, a lot of work on policy  
8 implementation development, standards  
9 development, as well, supporting that work. And  
10 ultimately it's about, you know, market  
11 engagement. We try to do the hub single point of  
12 contact thing in L.A. and happy to share our  
13 experience on that. Everything that we've  
14 experienced has been consistent with a lot of the  
15 research and experience that's been shared today.

16           MR. JORGENSEN: Hi. I'm Lane Jorgensen  
17 with MGG Properties Group in San Diego. We're a  
18 multifamily investment and management company.  
19 We're fully integrated from property management,  
20 asset management and construction management.  
21 I've had the ability to lead energy and water  
22 efficiency retrofit projects at several of our  
23 properties in California. We've done about over  
24 \$4 million worth of projects, both on affordable  
25 and market rate housing in California. And we've

1 implemented a number of strategies to finance  
2 that, and we're pleased to be able to talk about  
3 that experience here today.

4 MR. LEE: Thank you very much.

5 One of the discussions that we've been  
6 having relates to low-income housing tax credit  
7 properties.

8 Next slide.

9 And there are approximately 4,800  
10 properties in the state of California assisted by  
11 low-income housing tax credits. And of those  
12 properties, and this is all available through the  
13 state Tax Credit Allocation Committee, there are  
14 approximately 3,500 that are placed in service  
15 that are essentially occupied. They're running  
16 right now. And this bar chart actually  
17 identifies the growth of those tax credit  
18 properties in California.

19 Next slide.

20 If we're to take a profile of the  
21 construction type of those properties, you will  
22 see that a majority of them are new construction  
23 at this time. A sizeable portion does relate to  
24 that acquisition rehab wedge which is almost 40  
25 percent. And that translates to about 1,700

1 properties. And if we were to take those  
2 acquisition rehab projects and then look at  
3 another slice of them, of those that were  
4 actually placed in service in 2006 through 2008,  
5 it's important to understand where they lie with  
6 respect to their climate zones, and if they're  
7 located in disadvantaged communities, and maybe  
8 by their housing type.

9 We had parsed out just south of 200  
10 projects. And the reason why we had chosen this  
11 '06 to '08 is recognizing that a triggering event  
12 is that rescindication. And if developers were  
13 to actually contemplate rescindicating at year  
14 13, let's say, what would it actually look like?

15 Next slide.

16 So this is an identification of those  
17 projects by their climate zones. So you will see  
18 in these extreme climate zones, most of them are  
19 in the Central Valley, 47. We have some in the  
20 central-Central Valley, also, and the inland  
21 valley is 71.

22 Next slide.

23 If we were to look at this portfolio  
24 through the lens of the CalEnviroScreen from the  
25 California Air Resources Board and those that are

1 in the highest percentile of those disadvantaged  
2 communities, they layout as follows. You will  
3 see that many of those disadvantaged communities  
4 are in Southern California, San Diego and  
5 Imperial, and a swath in the Bay Area, as mapped.

6 Next slide.

7 This slide relates to the actual number  
8 of rent restricted units of them. And you'll  
9 notice that according to these bars, they're very  
10 large developments, 50 added to nearly 500 units.  
11 That's a large swath.

12 Next slide.

13 And this is their profile. Because we're  
14 speaking of not only buildings but behavior,  
15 correct, and who actually lives in them? So this  
16 slide indicates they're composed by large  
17 families. We've got seniors. And within the  
18 other, we have single-room occupancy households  
19 and populations that are considered at risk. I  
20 hope this information has been helpful.

21 Next slide.

22 Proceeding to Panel III. So what I'd  
23 like to start, before we begin our discussion, is  
24 again to frame this because I'd rather not have a  
25 discussion only about money in a vacuum. But I

1 think it's really important that we recognize  
2 about beginning with the end in mind.

3 I recall a conversation I had with a very  
4 successful housing developer. And I was just  
5 impressed by the number of affordable housing  
6 that he has created and managed. And he said --  
7 and I asked him, where do you begin? What's your  
8 formula, your success formula? And he answered  
9 very plainly, he always imagined, where would my  
10 mother live? It's a very simple test. And so if  
11 it passed the mother test to him, it was good  
12 enough, it was the right development.

13 And I think that really sets us up for  
14 our discussion today, how do we begin with the  
15 end in mind? How do we move investment and  
16 market adoption with a specific type of vision.  
17 And our first question relates to when should  
18 building owners consider energy efficiency  
19 retrofits and financing?

20 And I'd like to ask Dave your thoughts on  
21 this question.

22 MR. HODGINS: Yeah, absolutely. I think  
23 that this is really the key to the efficiency  
24 conversation, whether we're talking about  
25 multifamily affordable housing or, really, any

1 type of retrofit project and trying to find out  
2 kind of how far are we from the recapitalization,  
3 rescindication, refinancing event, and getting  
4 ahead of it. Our experience -- and getting far  
5 enough ahead of it that you can actually make a  
6 difference. I think there's a small window where  
7 you have the focus, you know, that this is coming  
8 up, but decisions haven't yet been made about,  
9 you know, specifying equipment. You know, how  
10 deep are going to go with this? So trying to get  
11 the conversation within that window, and then  
12 trying to come into it with as much information  
13 as possible.

14           For buildings that are in the middle of  
15 that 13- to 15-year cycle, having a conversation  
16 about deep retrofits, financing, someone spoke  
17 earlier about the complexity of the capital stock  
18 on these types of properties, is not likely to be  
19 productive in our experience. It's more those  
20 types of properties that are mid-cycle, maybe you  
21 could have a conversation about direct install  
22 type opportunities, you know, really low or no  
23 cost opportunities.

24           But if you're talking about, you know,  
25 deeper retrofits, you have to catch that window



1 where a deeper renovation is on the horizon and  
2 you can talk about incremental opportunities for  
3 efficiencies, and then bring in programs like  
4 weatherization program or EUC or other. But the  
5 timing is really key there, and it's a small  
6 window, I think.

7           COMMISSIONER MCALLISTER: Mr. Hodgins,  
8 can I ask a question here?

9           So I think the analysis that Eugene and  
10 his team has done is great. And then just, you  
11 know, focusing on the 2006, you know, okay, well,  
12 they're 13 -- 12 years out. They'll soon be  
13 thinking about the rescindication process. Now  
14 is the kind of time to get in there. So there  
15 are 200 properties that are in that window. And  
16 maybe for 2006 it's, you know, 50 or 60  
17 properties. Not all of those properties, am I  
18 correct, are going to be sort of in that bad a  
19 shape where they really feel like, okay, I'm  
20 going to invest in a deep-deep retrofit, or I'm  
21 going to get all the tenants out of there and,  
22 you know, really do something important.

23           What's the process by which you would  
24 suggest, you know, how to sort of figure out  
25 which properties are the ones that ought to be

1 approached and that we ought to really worry  
2 about and end up with some subset of those ones  
3 that are up for rescindication as good candidates  
4 to do something important?

5 MR. HODGINS: Yeah. Absolutely.  
6 Something that we did in Los Angeles with some  
7 funding from Energy Efficiency for All and the  
8 support there was to try to get at that question  
9 and kind of combine datasets. So we were able to  
10 get some information from our Department of  
11 Housing and Community Development, they have a \$6  
12 billion loan portfolio in the city, looking at  
13 the -- get the name right -- the National Housing  
14 Preservation Database, try to get some  
15 information from there, as well as from TCAC, and  
16 try to get a sense for what those buildings are,  
17 and then what other datasets can we access and  
18 overlay with that?

19 So UCLA created something called the  
20 Energy Atlas, working with DWP. I think Nancy  
21 touched on that earlier. So we were able to work  
22 it out with them to get access to get access to  
23 the actual utility data, and then combine that  
24 with assessor data to get at year built, where  
25 possible, look at renovation history, and really

1 spend the time on the planning phase to figure  
2 out which buildings are they and who owns them?  
3 Who are we trying to talk to, when about what?  
4 But it was an over a year process putting that  
5 study together, combining those datasets and  
6 synthesizing that into a hit list.

7           But what that showed us what that,  
8 consistent with what Eugene was showing at the  
9 state level, was that there were concentrations  
10 of large buildings with high energy use  
11 intensities and where they are. And in L.A.,  
12 those in South L.A. and Watts, and in the Valley.  
13 And so now is the process of bringing together  
14 the relevant programs, trying to package those in  
15 a way so that when we do sit down, we have a  
16 sense for what the timing is and what's likely  
17 the nature of the opportunity before we walk in.

18           COMMISSIONER MCALLISTER: Great

19           MR. HODGINS: Yeah.

20           MR. LEE: Are there others who would like  
21 to chime on discussion?

22           Stephanie?

23           MS. CHEN: Yes. And I found this really  
24 helpful, Eugene, trying to like get into the  
25 data.

1           My team, also, at the California Housing  
2 Partnership tried to do a little analysis ahead  
3 of this, as well. And we tried to look more  
4 recently, you know, how many TCAC rehabs actually  
5 happened statewide in the last few years, found a  
6 low number of 22 in 2017, slightly higher, 57 in  
7 2016, 39 and 2015, and 37 in 2014. And we were  
8 looking at this not only for this workshop, but  
9 also thinking about, as we're ramping up, getting  
10 ready for the Solar and Multifamily Affordable  
11 Housing Program, how much would we be  
12 specifically focused and targeting these sorts of  
13 projects, versus how much are we going to have to  
14 look broader; right?

15           And those numbers were low enough that it  
16 was a reminder that while it is a really  
17 important time to be thinking in terms of, you  
18 know, their major recapitalization timeline, our  
19 team, you know, has good experience working in  
20 the Low-Income Weatherization Program outreach,  
21 also just trying to time things with other mid-  
22 cycle improvements. You know, are they going to  
23 be doing a major roof replacement? Did they  
24 think it was a good time to go solar? Did they  
25 really need to save some money on water bills?

1           And so we definitely think that that  
2 supports a lot of what the discussion's been --  
3 we've been having today, which has been about how  
4 do we make sure that we're combining our  
5 outreach; right? Because when they're looking at  
6 making another improvement is when they -- is the  
7 best time to reach them to make an energy  
8 efficiency improvement.

9           MR. LEE: Others?

10           COMMISSIONER MCALLISTER: Do you have --  
11 do you know when that's going to happen? I guess  
12 the advantage of the TCAC Database is that it's  
13 like, okay, hey there, you're 12, you know, we  
14 should engage with them.

15           And so I guess, what would be a similar  
16 analogous kind of trigger for outreach in the  
17 case where they're doing, you know, a new roof or  
18 something? I mean, you know, they're -- when  
19 they go out to get bids, you know, there's  
20 something. You know, when they want to get a  
21 permit from the city, like is it -- you know, I  
22 guess I'm wondering sort of what would be the in  
23 for a program to sort of engage with that  
24 property?

25           MS. CHEN: So instead of trying to reach

1 them at the trigger, as Dave was saying, we reach  
2 them ahead. We talk about their whole portfolio  
3 once. Every time, we develop a relationship with  
4 the affordable housers themselves and work  
5 through their longer-term timeline. The way they  
6 think about their entire portfolios anyway,  
7 they're not planning -- I shouldn't be speaking  
8 for Rich or anyone, but our experience is our  
9 partners are not just planning one project at a  
10 time, they're planning their whole portfolios.

11           And so it's really hard to catch people  
12 exactly at a trigger moment, so instead we have  
13 to do our outreach and keep our databases, our  
14 outreach and engagement databases, up to date on  
15 their longer-term plans and when to touch back  
16 with them.

17           COMMISSIONER HOCHSCHILD: Rich, do you  
18 have something to add about that, when you  
19 actually assess your portfolio?

20           MR. CIRAULO: It's definitely an ongoing  
21 process. And we've actually working with the HPC  
22 (phonetic) to sort of help kind of analyze some  
23 of the specifics. And, actually, when I get to  
24 my part, I'll talk a little bit about a program  
25 that we're actually implementing right now across

1 our portfolio that I think speaks to this, so  
2 I'll just kind of leave you in suspense for that.

3 MR. LEE: Well, you're up.

4 So the second question is: What are the  
5 cost consideration and amounts needed for  
6 meaningful energy improvements, and why,  
7 recognizing we had our discussion and we  
8 acknowledged that there isn't just one profile in  
9 this very large multifamily universe? So there  
10 isn't a magic number?

11 But, Rich, if you could get started on  
12 that?

13 MR. CIRAULO: Yeah. And I think sort of  
14 my response doesn't really have specific sort of  
15 numbers, but maybe that will kind of come out of  
16 the general conversation. But there were a  
17 couple of things that I thought would be helpful  
18 just to put out there. And sort of hearing some  
19 of the other conversations, I think you probably  
20 heard some of this before, but I wanted you to  
21 hear it from Mercy Housing, affordable housing  
22 developer.

23 So first off, I just want to say that we  
24 want to building sustainable housing. And  
25 implementing energy efficiency strategies is very

1 consistent with providing truly affordable  
2 housing and lowering the cost by reducing utility  
3 costs, and basically the overall housing costs.

4           And so, you know, often we are  
5 constrained by the funding availability and the  
6 escalating costs of construction. So projects  
7 are designed to cover operating costs and pay  
8 supported debt, but rents are highly regulated  
9 and constrained. Most projects do not generate  
10 excess cash flow, and so project reserves are  
11 used to pay for sizeable capital improvements,  
12 things like roofs, siding, windows, HVAC systems.  
13 And so there are really two instances where we're  
14 really kind of looking at the details of the cost  
15 considerations, and it's when a project is  
16 potentially undergoing significant rehab and  
17 we're seeking new funding.

18           And so as part of seeking that new  
19 funding, we're looking to meet the -- and usually  
20 when we're talking about that, we're talking  
21 about tax credits, and we're seeking to meet  
22 those program requirements. And the other one is  
23 when we're looking at portfolio upgrades and  
24 ongoing replacements.

25           And so when we're looking at projects



1 that are undergoing significant rehab and  
2 financial restructuring, there's usually a menu  
3 of options that we're looking through. And so  
4 that many options is what we're taking to our  
5 team and working through and sort of define, you  
6 know, our low-hanging fruit, those things that  
7 are, as we go through the Greenpoint (phonetic)  
8 checklist or the LEED checklist, those items that  
9 are easier to achieve without adding significant  
10 cost to the project. And so that's sort of the  
11 first focus and the first discussion that's being  
12 had.

13           And then we're looking to make smart  
14 choices that -- so then how does that come out as  
15 smart choices, like making LED lighting upgrades  
16 or looking at low-flow fixtures, again, not high  
17 cost but high impact items?

18           And then the conversations get a little  
19 more different when we're looking at those items  
20 that will cost the project but, you know, looking  
21 to have those fit within the overall budget, and  
22 will still provide long-term benefits. And in  
23 those instances, we're looking at like window  
24 efficiency, roof efficiency, adding additional  
25 insulation. And so that's kind of a point in

1 time that I think we've discussed a little bit  
2 where these items get brought up and sort of, you  
3 know, weighed into the overall project budget.

4           When we're looking at existing portfolio  
5 upgrades, we try to make the best replacement  
6 decisions based on the funds available, which is  
7 not always the easiest call. For older  
8 properties, it's often difficult to choose the  
9 more expensive energy efficient option. But some  
10 of the newer TCAC projects have requirements to  
11 make those replacements in line with the original  
12 efficiency goals, so that's kind of built into  
13 some of the reserve analysis and what we're  
14 thinking about, sort of for the future of those  
15 projects.

16           For the older properties in our  
17 portfolio, Mercy has been working on a program  
18 that does not have a significant capital outlay  
19 or increase operating costs. It's relatively new  
20 to us, but it's work that we're doing with the  
21 Affordable Community Energy Services Company, or  
22 ACE, and Bright Power. And so what that program  
23 is doing is allowing us to do energy efficiency  
24 upgrades that are being paid from savings. And  
25 so essentially, you know, we're achieving lower

1 energy usage, increased tenant comfort, and  
2 providing capital improvements with minimal  
3 impact to project reserves and operating  
4 expenses.

5           And essentially, one of the drawbacks,  
6 unfortunately, is if the project doesn't  
7 translate to reduction in energy costs and  
8 operating costs for the property, since it's a  
9 pay-from-savings, but, as I mentioned, we are  
10 able to reduce the property's carbon footprint,  
11 improving tenant comfort, and providing for some  
12 no-cost property upgrade.

13           So that's just a quick overview of some  
14 of the energy measures and costs that Mercy  
15 considers.

16           MR. LEE: Thank you, Rich.

17           Other who would like to contribute to  
18 this question?

19           COMMISSIONER MCALLISTER: Can I just  
20 chime in, or ask a question, actually, just  
21 digging in a little bit, Rich, on your answer  
22 there?

23           So you know, as you said, a lot of this  
24 is complicated and, you know, there's a lot of  
25 regulations, you know, and sort of the costs can

1 go up, and it's not clear how you sort of make  
2 that -- turn that into benefits while still  
3 complying with regulations and all that, and so,  
4 you know, not just energy regulations, but a  
5 broad swath of things you guys have to do, so I'm  
6 very sympathetic with that.

7           And so I guess my question would be,  
8 what -- what sort of collaboration or  
9 cooperation, whether it's some kind of, you know,  
10 easing of the regulatory burden or, you know,  
11 cash money or, you know, financing support, what  
12 are the sort of things that would get your  
13 attention as a developer in terms of  
14 collaboration from the state or from a state  
15 program or some kind of policy initiative to take  
16 on sort of a bigger lift, whether it's that  
17 rescindication or, you know, in mid-cycle or, you  
18 know, sort of a year-to-year upgrades of your  
19 properties? And sort of do that with, you know,  
20 feeling like it was really worth it, like you  
21 were really moving in the right direction and,  
22 you know, locking arms in a productive way.

23           I guess, you know, I don't want to be --  
24 I don't want to come to this with any illusions  
25 about how effective the state can be on this.

1 But if we're going to do an initiative or we're  
2 going to think about initiatives, we want to  
3 really make them work. We want to make them  
4 knock the ball out of the park. And so, you  
5 know, what does that look like to you?

6 MR. CIRAULO: So cash is always great,  
7 you know? But --

8 COMMISSIONER MCALLISTER: I have no  
9 doubt.

10 MR. CIRAULO: -- from a more pragmatic  
11 perspective, I think that one of the things that  
12 we're noticed is that there are many different  
13 efforts sometimes happening that we're sometimes  
14 pulling in to try to be the hub of, so in terms  
15 of identifying those potential incentive programs  
16 that are out there that really fit, you know,  
17 with the projects that we're working on,  
18 understanding the different requirements of the  
19 different programs and trying to sort of  
20 aggregate them into one place so that we can  
21 either feed it over to our architects to  
22 incorporate into the design, or to have those  
23 conversations, you know, with our contractors  
24 around what those things would cost.

25 And so one of the things that we're

1 talked about is almost like a one-stop-shop  
2 consultant, is how we've thought of it in some  
3 instances where, you know, we work with HERS  
4 raters, we work with energy consultants. But  
5 none of those folks that we've run into so far  
6 really have that broad perspective and really  
7 could sort of help us get that, you know, put all  
8 those different pieces together to be able to  
9 move forward and know that we're taking advantage  
10 of those programs that are already in existence  
11 and applying them to the projects that we're  
12 trying to move forward.

13           COMMISSIONER MCALLISTER: Is there kind  
14 of -- so I guess I'm imagining, you know,  
15 scenarios where you're sort of, okay, here's the  
16 minimum bar we have to get over to -- you know,  
17 we have to do some energy efficiency to get  
18 access to the tax credit allocation financing,  
19 but, you know, beyond that it's kind of a tough  
20 sell maybe. And, you know, what is the -- what  
21 would soften that blow or what would sort of  
22 motivate you guys to say, okay, you know,  
23 actually, this time around we're really going to  
24 do a deep retrofit, or we're going to go the  
25 distance and do more; right? Because, I mean,

1 long term, we've really got to -- every  
2 opportunity we've got to take advantage of. 2050  
3 is not that far away. You know, it's two  
4 rescindications or it's, you know, maybe one refi  
5 of a private sector building.

6           So I guess, you know, think. You don't  
7 have to answer now or, you know, in depth, but  
8 just I think those kind of bold initiatives, you  
9 know, are really what we need to consider, you  
10 know, all the incremental stuff, you know, along  
11 the way but also really deepening it when we have  
12 a chance.

13           MR. CIRAULO: The one thing I would say  
14 to that is that what we find ourselves often  
15 doing is, you know, figuring out how to get the  
16 minimums that, you know, we need to, and the  
17 funding, but with basically a direction to the  
18 team to look at like our contingency as we go  
19 through construction and try and identify those  
20 items that we can reincorporate into the project.

21           So I guess my real point is that you've  
22 got a very willing and sort of interested party  
23 in trying to get to those goals, and that we try  
24 to do it as best we can with the funding that we  
25 have available.

1           And so, an example of the rehab, you  
2 know, we go into it very conservatively because  
3 we don't know what we're going to find when we  
4 start pulling the walls off --

5           COMMISSIONER MCALLISTER: Right.

6           MR. CIRAULO: -- and things like that.  
7 But if we're lucky and things are not so bad,  
8 then we can then refocus and look at additional  
9 energy efficiency upgrades that we try to  
10 incorporate into the project if, you know, there  
11 were additional funding sources that allowed us  
12 to make those. And sometimes making those  
13 decisions in the middle of a rehab is not the  
14 best time to do it --

15          COMMISSIONER MCALLISTER: Yeah.

16          MR. CIRAULO: -- because you're incurring  
17 additional costs sometimes in rework or in kind  
18 of having to rethink certain strategies. And so  
19 if we knew that up front, then we could plan  
20 better and, you know, incorporate those  
21 efficiencies more definitively.

22          COMMISSIONER MCALLISTER: Okay. Thanks.

23          MR. JORGENSEN: I would add a little bit  
24 do that.

25          In our experience, we did some mid-



1 ownership cycle energy and water retrofits on  
2 multiple properties in the So Cal REN (phonetic)  
3 territory. And that opportunity was originated  
4 by a third-party group that was incentivized to  
5 try and go get construction work.

6           And so they had developed an expertise in  
7 aggregating the program -- different programs and  
8 the different incentives that were available to  
9 different programs through So Cal REN, primarily.  
10 And they said, okay, So Cal REN has a temporary  
11 allocation to go do energy audits, so we're going  
12 to go -- here's a list of your buildings, we're  
13 doing to go do no-cost energy audits on all those  
14 buildings and we're going to come back to you  
15 with the findings. And if we feel like there are  
16 good opportunities that provide a return on  
17 investment, we're going to recommend that you go  
18 forward with it.

19           And so it was in alignment in the sense  
20 that there was no out-of-pocket cost from us to  
21 evaluate what the options might be. I came from  
22 kind of a developer type of group that had  
23 integrated the energy analysis and tracking and  
24 incentive tracking to put a package together that  
25 they could then go out and execute on and, you

1 know, make money being a contractor to install  
2 those projects. And so, you know, we ended up  
3 going forward.

4           You know, one little hitch there that we  
5 were able to overcome uniquely is that, you know,  
6 there was substantial up-front costs to the  
7 retrofits prior to any rebate monies being  
8 received. We were able to basically use our  
9 company balance sheet to front that, but not  
10 affordable housing owners would have that  
11 vehicle.

12           But just as an example, you know, sort of  
13 free energy audits for everyone and, you know,  
14 maybe some temporary financing vehicle until  
15 rebates come in, based on our experience, would  
16 accelerate and illuminate what opportunities  
17 might be out there, both market rate and  
18 affordable housing.

19           MR. LEE: Okay, our third question  
20 relates to financing strategies and the  
21 combination of funding sources, and which ones  
22 are most successful, and why?

23           Lane?

24           MR. JORGENSEN: So just kind to add some  
25 context for people that maybe aren't completely

1 familiar with how we look at a multifamily  
2 property from an investment point of view is that  
3 there's the physical structure, the units, the  
4 improvements, and then there's the legal and  
5 financing structure that David, you know, called  
6 the capital stack, and that's what we call it,  
7 the capital stack. And so you have investor  
8 equity and you have mortgage financing as part of  
9 that capital stack. And those create obstacles,  
10 but that's also where I have found most of the  
11 opportunity to do retrofits is when there's a  
12 change in that capital stack.

13           And like we've talked about with LITAC  
14 (phonetic) deals, they're on kind of a 15-year  
15 cycle. And so if they're 100 percent restricted  
16 on their rents, too, you don't have a lot of  
17 value appreciation. So it's very difficult in  
18 100 percent of affordable properties to ever have  
19 an opportunity to adjust that capital stack.

20           Where we have found some initial success  
21 are on some of the older mixed-income properties,  
22 often times from the 1980s when there were bonds  
23 and credits issued that then resulted in a deed  
24 restriction on the property specifying, you know,  
25 20 percent of the units be made available to

1 affordable housing residents of a certain income  
2 threshold, or 40 percent.

3           And because of that existence of that  
4 deed restriction the property qualified for more  
5 aggressive incentives to do energy-efficient  
6 retrofits or water-efficient retrofits on the  
7 property. And the existence of the, you know, 60  
8 to 80 percent of the property being market rate  
9 allowed the property to appreciate in value. And  
10 so as a private capital investor, we were able  
11 to, you know, create transaction -- investment  
12 transaction events, whether it's a purchase or a  
13 sale or a refinance, to go after those projects.

14           And so, you know, one of our first  
15 projects was a solar-thermal project on a 300-  
16 plus-unit property where we refinanced with HUD.  
17 And that refinance event on an appreciated  
18 property allowed us to pay for all new roofs that  
19 was a prerequisite to being able to do the solar-  
20 thermal project. And, you know, again, we had  
21 the refinance proceeds to front the \$400,000 of  
22 cost of the solar-thermal project until the  
23 rebates came in. And so that was a very  
24 successful project.

25           Likewise, we did a solar PV system on a

1 400-plus-unit property that had an old regulatory  
2 agreement on it through the prior MESH (phonetic)  
3 program, and that was a PPA, a very difficult  
4 project. Implementation was very challenged with  
5 both the lender and, you know, the utility. And  
6 in that case, we ended up basically taking a  
7 separately metered property and turning it into a  
8 master metered property so that we could monetize  
9 the benefits of the solar production and pay for  
10 the PPA payments that are required.

11           COMMISSIONER MCALLISTER: Okay.  
12 Interesting. So let me, not being a finance guy,  
13 let me see if I can just state this in simplistic  
14 fashion.

15           So there actually is some benefit or some  
16 potential upside of having a mixed building where  
17 some is low-income and some is not low-income  
18 because you have the appreciation upside that you  
19 can then leverage when you refinance it?

20           MR. JORGENSEN: Yeah, absolutely. You  
21 know, I think that's a great model for a lot of  
22 reasons because it provides inclusive housing and  
23 brings people of different incomes together. And  
24 so I feel like, you know, some of the properties  
25 I'm most emotionally proud of are those that are

1 mixed income because, you know, rental housing is  
2 just a very natural place for people to, you  
3 know, be at different points in their life when  
4 they're trying to, you know, climb out of  
5 different economic situations, or if they need a  
6 respite. And so those mixed-income properties  
7 are really very powerful and they're financeable.  
8 And the transaction events occur more frequently  
9 on them. We're losing them because the  
10 regulatory agreements are expiring --

11 COMMISSIONER MCALLISTER: Yeah.

12 MR. JORGENSEN: -- and there's no  
13 mechanism to continue that or replace that  
14 financing that also replaces the deed  
15 restriction. So as a state, we've lost a lot and  
16 we continue to lose them. You know, we've lost a  
17 couple that way, too.

18 But from a private equity standpoint,  
19 we're indifferent. I mean, it's very difficult  
20 for us to invest in 100 percent affordable  
21 because those properties don't appreciate. But  
22 if it's a mixed income, it can be a very viable  
23 opportunity. And because of the deed  
24 restrictions the rebates have been more  
25 aggressive, which further helps support the

1 projects.

2 COMMISSIONER MCALLISTER: That's really  
3 interesting. Thank you.

4 MS. ADEYEYE: I had a question about the  
5 last piece that you mentioned, when you said you  
6 took the project that was separately metered and  
7 made it master metered. Do you have a sense of  
8 how that affected the tenants or what happened in  
9 terms of their build or in terms of their  
10 experience of that project moving forward?

11 MR. JORGENSEN: The tenant bills went  
12 down. Because of the nature of the PPA, they  
13 didn't go down as much as if the solar system had  
14 been fully paid for, separate from a power  
15 purchase agreement kind of financing mechanism.  
16 But basically what happens is because the meters  
17 exist, we can separately meter those tenants'  
18 usage directly on how much they actually use and  
19 then shift the net metering credits from the  
20 solar production to them according to their  
21 usage. And so they pay a lower rate on the solar  
22 production than they would to the investor-owned  
23 utility.

24 MS. ADEYEYE: So in the end, they still  
25 got the kind of net energy metering benefits?

1 MR. JORGENSEN: Yeah.

2 MS. ADEYEYE: Okay.

3 MR. JORGENSEN: And on the financing  
4 front, one thing I wanted to point out, too, in  
5 our multifamily space, Fannie Mae and Freddie Mac  
6 are huge lenders. And they have Green Financing  
7 Programs. And I think one of the more exciting  
8 things that has happened in the last few years in  
9 multifamily space is that there's been tremendous  
10 uptake and adoption of the green financing. And  
11 it's basically standard business operating  
12 procedures for us at this point in time. Some  
13 stats are that in 2012, Fannie Mae started their  
14 Green Financing Program.

15 It was not designed particularly well, so it  
16 was very slow out the gate, but in 2014, they did  
17 \$130 million. In 2017, they did \$27.6 billion of  
18 green financing around the country. Freddie Mac  
19 went from \$3.3 billion in 2016 to \$18.7 billion  
20 last year. And for Fannie Mae, it accounted for  
21 almost a third of their total multifamily loan  
22 production, and for Freddie Mac, about a quarter.  
23 These stats are just off their website. And so  
24 almost, you know, over \$46 billion in financing.  
25 And what that financing does is, for owners like



1 us, it says, okay, if you go in and you retrofit  
2 this property that you're acquiring or financing,  
3 reduce either water or energy use by 25 percent,  
4 we'll reduce your interest rate.

5           And so what's really brilliant about this  
6 solution is that it overcomes the split incentive  
7 problem because the owner, who is taking on the  
8 obligations of the financing, realizes the  
9 benefit of the lower costs of debt, but the  
10 engineering-based improvements required at the  
11 property are whole building, and so they accrue  
12 to the tenants where there is low-flow  
13 showerheads or LED bulb replacements. And so  
14 it's a very -- it's just, you know, a huge uptake  
15 by the industry to do this.

16           COMMISSIONER MCALLISTER: So I wanted to  
17 sort of build on something that Rich said, and  
18 then what you just said, and really pose the  
19 question: Is there opportunity for a state-level  
20 initiative to kind of piggyback on some of this?

21           Like as long as you're in a building and  
22 you're getting a bucket list, you know, you're  
23 getting sort of a punch list, here's all the  
24 things we could do on this building, and we're  
25 going to draw the line here because -- you know,

1 do all the stuff above that because we have  
2 capital constraints or because whatever, you  
3 know, hassle factor, you know, no low cost or  
4 whatever, you know, and so, you know, if it's 25  
5 percent savings.

6           So what -- you know, is there an  
7 opportunity to sort of go and get that next 10  
8 percent and the next 25 percent of something to,  
9 you know, go further, you know, based on some  
10 initiative that we could define as a state while  
11 you're at it, basically, you know, and put some  
12 more resources on it?

13           MR. JORGENSEN: I think there's the  
14 opportunity for that. You know, it's debt to us,  
15 but for Fannie and Freddie, it's equity. There  
16 are, you know, there are secure ties to  
17 mortgagers' obligations, and so they go out and  
18 sell them, and so there's certain complications  
19 to it.

20           But, you know, for a state the size of  
21 California with the amount of business that's  
22 available here for them, I would think that  
23 there's some capacity for the state to interact  
24 with them in a way to further the level of rehab.  
25 Because, you know, we're doing the easier, lower

1 cost things because those are the things that  
2 make sense. But to go for the deep rehab, you  
3 know, the models from days gone by that would  
4 seem to work would be more of the, you know, kind  
5 of bond financing deals where you bring in, you  
6 know, bond financing, with our without tax credit  
7 allocation --

8 COMMISSIONER MCALLISTER: Right.

9 MR. JORGENSEN: And, you know, add  
10 private equity or some other source of equity to  
11 a project to do a deep retrofit and that just  
12 becomes part of the bond obligation. But  
13 somehow --

14 COMMISSIONER MCALLISTER: Oh, I see.

15 MR. JORGENSEN: -- the financing on the  
16 bond has to be lower than a market rate to be  
17 appealing.

18 COMMISSIONER MCALLISTER: Yeah. Yes.  
19 I'm just -- I'm barely -- I'm just barely  
20 following you at this point. But I think if we  
21 could turn it into -- if we could something  
22 equity-based, you know, and sort of make it as  
23 similar as possible, then maybe everybody's  
24 better off anyway. I want to throw that out  
25 there. If anybody has any beautiful ideas and

1 has a business model for this, that would be  
2 great.

3           Anyway, I'll let Eugene take back --

4           MR. CIRAULO: If I just can add one quick  
5 to that, which is that when thinking about some  
6 of these programs, to maybe work with some of the  
7 existing agencies, because there are so many  
8 layers --

9           COMMISSIONER MCALLISTER: Yeah.

10          MR. CIRAULO: -- of financing and sort of  
11 different, you know, battling regulations and,  
12 you know, issues that we end up having to sort of  
13 untangle. It would be good to them sort of in  
14 concert with some of the programs that are in  
15 place.

16          COMMISSIONER MCALLISTER: Yeah.

17          MS. CARRILLO: And piggybacking off that  
18 a little bit, I think the other thing that we're  
19 hearing from folks on the financing side as we  
20 develop affordable multifamily pilots is that  
21 really something, an off-balance sheet, will  
22 really be effective with the TCAC projects and  
23 other really debt -- complicated debt stacks, so  
24 looking at those energy service agreements or the  
25 power purchase agreements, or even equipment

1 leases. I think there's some innovative things  
2 coming out on -- instead of energy performance  
3 guarantees, but actually looking at subscriptions  
4 of some other way to off -- it's the new term to  
5 offset that cost of services for energy.

6 COMMISSIONER MCALLISTER: So turn it  
7 into, basically, an operational cost, more or  
8 less?

9 MS. CARRILLO: In essence, not  
10 necessarily guaranteeing the performance, but  
11 having enough of some wiggle room on the  
12 performance to be able to have a regular revenue  
13 stream.

14 COMMISSIONER MCALLISTER: Yeah.

15 MS. WANG: I think another interesting  
16 thing that I was exposed to the other day was  
17 kind of crowd funding for solar, which isn't new,  
18 but this was for tenants and multifamily tenants  
19 where they created what they call kind of a  
20 syndicated on-bill repayment program for solar to  
21 offset some of the technical costs. So I think  
22 there's a lot of innovative strategies for both  
23 the developers themselves, and some new ones  
24 opening up for tenants directly.

25 COMMISSIONER MCALLISTER: Interesting.

1 MS. WANG: Adding to that, it's hard to  
2 figure out when do these questions end and the  
3 next ones start? But basically, I think I've  
4 also been hearing a lot around the need for  
5 flexibility, because you're talking about --  
6 nobody here has said, oh, I would like to finance  
7 that specific authorized energy efficiency  
8 measure; right? I mean, I think we're talking  
9 about, well, you're in -- you're doing the work.  
10 Maybe you can do something else where you can  
11 deepen your efficiency or water savings? And  
12 it's not -- it doesn't neatly fit into the  
13 program check boxes.

14 And I think that echoes a lot of what was  
15 said earlier today, which is it's really hard to  
16 build off the old -- a lot of the legacy  
17 programs. It's not, you know -- well, you know,  
18 I guess we can name names, but basically we're --  
19 basically, what we're trying to get at is anytime  
20 you say, well, you can include this type of  
21 measure but not that, that gets in the way.  
22 Every -- whereas, if you say whereas some of the  
23 other programs out of Cap and Trade, for  
24 instance, did not have to start with that because  
25 the agencies did not start with, you know, 30

1 years of building up lists of approved measures.  
2 Instead, they could just say any sort of energy  
3 or water savings, we're going to go by the  
4 metrics of what's saved instead of specific  
5 measures. And then you really open up the  
6 opportunity while you're in there.

7 MS. CARRILLO: I think the other point  
8 that you've made before, Stephanie, is not only  
9 just the specific measures but the arbitrary  
10 lines of eligibility. So, you know, you might  
11 have an affordable housing project, you know, on  
12 the other side of the street, but it doesn't  
13 cross over that one line to be able to provide  
14 that incentive, in other words.

15 MS. WANG: And I understand. We're a  
16 state that has to prioritize our dollars.

17 COMMISSIONER MCALLISTER: Yeah.

18 MS. CARRILLO: But I think some of these  
19 arbitrary silos that we create, you know, they're  
20 self-created, let's go change the world, and  
21 here's an obstacle course that your mother  
22 created for you, to go do it. You know, it's  
23 just one of those things that, to the extent that  
24 we can bust down those walls, it would definitely  
25 make projects easier.

1           MR. HODGINS: Yeah. To pick up on that,  
2 and I think one of the previous speakers  
3 mentioned it, too, was just the pebble in the  
4 shoe, to borrow Eugene's comment, the income  
5 verification piece. When tenants have already  
6 been income verified in order to live in certain  
7 types of properties, to have to then go do that  
8 again in order to actually qualify for certain  
9 programs, like direct install programs, I think  
10 in practical application becomes a really big  
11 barrier.

12           And so I'm sure there's a reason that  
13 rule is there, but if that's something that can  
14 be revisited and opened up, you know, would it be  
15 possible to just rely on the income verification  
16 that's done up front in order for a tenant to be  
17 in a building and just determine that, okay, this  
18 building is eligible for these programs.

19           And you can take some of those -- and  
20 those are more, you know, legacy programs that  
21 are more measure based and prescriptive, but take  
22 those projects out of the scope for the more  
23 flexible programs, like the Cap and Trade, you  
24 know, Low-Income Weatherization Program, or where  
25 you've got, you know, proceeds from a refinancing



1 or rescindication, take those measures off the  
2 table that can be done for free through a  
3 prescriptive measure-based program and make that  
4 process really simple, so that income  
5 verification piece just simplifies. Take those  
6 projects that you know make sense off and then  
7 let the flexible money be flexible.

8 MR. LEE: Thank you.

9 We have our final question, and that is:  
10 How can we improve and expand increased  
11 investment? So we've spoken about flexibility,  
12 looking for those opportunities, even if they're  
13 just incremental changes in programs.

14 But, Stephanie, do you have other ideas?

15 MS. WANG: Yes. And I'm only going to  
16 share two because it's getting late in the  
17 afternoon.

18 So one of them, many have noted, and  
19 thank you for whoever added it into the CLIMB  
20 Action Plan, the need for long-term stable  
21 funding for existing programs. You never -- you  
22 can't really have property owners and industry  
23 relying on programs when the funding is really  
24 unpredictable, but I think that's been covered a  
25 lot, so I'm going to keep moving.

1           The other one, we've started to get into  
2 some of the energy performance risk issues. And  
3 I think there are actually a lot of ways that,  
4 you know, that those of us who are in these rooms  
5 and get to give input on program design can help  
6 to address this. I mean, there are the  
7 tougher -- there are the tough questions to  
8 address around, you know, how do we improve  
9 projections of energy performance? And how do we  
10 encourage operations and maintenance, better  
11 operations and maintenance business models? And,  
12 you know, how do we change tenant behavior? And  
13 people often times go straight to the really  
14 harder pieces.

15           But there are models for, you know,  
16 requiring -- if you have an incentive program,  
17 think of it as -- I love that in the CLIMB Action  
18 Plan, it says -- it puts us in the Consumer  
19 Protection Category. I love that. This is not  
20 just some abstract problem, this is a consumer  
21 protection problem. And in which case, you can -  
22 - you know, we can say when this  
23 program -- when a program provides state  
24 incentive dollars, that, you know, that it can  
25 include consumer protection, whether it's, you

1 know, contractor guarantees that the product will  
2 perform as expected, or whether it's incentives  
3 covering some operations and maintenance  
4 services, or other.

5           There are a lot of opportunities that I  
6 think many of us are exploring. And I'm excited  
7 that we are getting, I feel like in California,  
8 we're getting a lot more, getting beyond just  
9 saying the energy performance risk is a problem  
10 quietly, and saying, hey, you know, there are  
11 ways that our programs can be designed to tackle  
12 that head on.

13           MR. LEE: Others?

14           MR. HODGINS: Well, to add to that, I  
15 mean, there are also -- I have a lot of  
16 experience with performance contracting. There's  
17 also insurance products on the market now that  
18 are pretty competitively priced, based off of  
19 either the project value or the amount of savings  
20 that are, you know, projected to occur.

21           And I'd be curious to hear, you know, the  
22 other panelists or others in the room, what their  
23 experience has been. But mine has been once we  
24 explain that and sort of how the equation works,  
25 which is basically just a regression analysis,

1 and most business people are familiar with what  
2 that is, they use that type of approach to  
3 project all kinds of things, different investment  
4 options, they're like, oh, I get it. Forget it,  
5 let's just do the project. You know, by the time  
6 we actually go about quantifying the risk and  
7 they say, okay, well, that's going to be another  
8 two percent of project value, I don't need it,  
9 so -- but it does exist.

10           And to the extent that -- I'm curious if  
11 other people have seen value in that or had a  
12 similar experience?

13           COMMISSIONER MCALLISTER: Well, I mean,  
14 I'm intrigued by that just because, I mean, we  
15 have been funding and working on and trying to  
16 sort of give some impulse to some of these  
17 analytical approaches in our world, you know, in  
18 the energy efficiency program world; right?  
19 Maybe we should be partnering more aggressively  
20 with kind of the actuarial community to sort of,  
21 you know, have them sort of bring their expertise  
22 to this because I think it's kind of a new and  
23 different thing for the energy efficiency, you  
24 know, business, but not for many other people.  
25 So maybe that's a good approach.

1           MR. JORGENSEN: Just one example with the  
2 Fannie-Freddie Green Financing Programs, they  
3 don't actually require performance, and so it  
4 makes it very simple. They require completion of  
5 the program based on the timeline agreed to, to  
6 complete the whole building retrofit project.  
7 But it's an engineering-based study, an estimate  
8 of projected savings, and so we typically don't  
9 run into that issue.

10           For the projects that we've done  
11 midstream, that maybe are just funded out of cash  
12 flow or reserves, that's definitely more of a  
13 concern in terms of are we actually going to  
14 receive the energy savings projected that were  
15 used to justify this expense from precious, you  
16 know, cash flow and operating reserves. And they  
17 haven't all worked out. Some of have worked out  
18 great, but not all have.

19           COMMISSIONER MCALLISTER: What do they  
20 qualify as a green project? So is there -- I  
21 mean, you just check the boxes, it's got this and  
22 that, and you're done?

23           MR. JORGENSEN: For their loan programs,  
24 they recently -- well, for 2018, they increased  
25 the energy reduction standard from 20 percent

1 whole building to 25 percent whole building, but  
2 it's energy or water. So the engineering study  
3 is part of the financing process, whether it's an  
4 acquisition or a refinance. It's a third-party  
5 study. And they actually pay for most or all of  
6 the report as part of, you know, what you -- I  
7 mean, ultimately, the borrower pays for it but,  
8 you know, they compensate you for the cost of  
9 that particular engineering study. And then  
10 that's what they use to make the determination.  
11 So you have Energy and Water Measures 1 through  
12 20, that's kind of your menu of options, and then  
13 you choose those that are most cost efficient to  
14 meet their thresholds to qualify for the  
15 incentivized financing.

16 COMMISSIONER MCALLISTER: Okay. Great.

17 MS. WANG: I will just quickly respond  
18 again to the insurance question. Our experience  
19 is that off-the-shelf, it's not affordable right  
20 now for this purpose and for this market sector.  
21 But, you know, I think we continue to be  
22 interested in whether, if this opportunity grows  
23 and is -- and is developed, whether this could  
24 work, because we really like the idea of not  
25 every individual property owner not having to be

1 the insurance themselves.

2 MR. LEE: Thank you.

3 Other questions?

4 COMMISSIONER MCALLISTER: I think we're  
5 good. Great. I would like to thank you -- go  
6 ahead. Do I have -- Jeanne, you have a question,  
7 A question about that? Yeah? Go for it.

8 MS. CLINTON: I have a question.

9 COMMISSIONER MCALLISTER: Jeanne, you  
10 might as well just come up and stay up.

11 MS. CLINTON: Jeanne Clinton. These are  
12 just four quick clarifying questions of points  
13 that people on the panel made that I think would  
14 be helpful to get answers to.

15 Let's see, for anybody, this whole  
16 discussion about the 15-year recap and refi  
17 period, does that apply in general to all of the  
18 low-income multifamily housing that we're talking  
19 about or only the deed-restricted rent-assisted  
20 housing?

21 MS. CARRILLO: (Off mike.) Just TCAC.

22 MS. CLINTON: Just TCAC? So we're  
23 talking about the 5 percent rather than the 26  
24 percent of -- the two wedges of -- it was like 5  
25 or 6 percent of this low-income multifamily was

1 rent assisted and 25 percent was market rate. So  
2 this 15-year thing is only for the smaller wedge;  
3 is that right?

4 MS. CARRILLO: So the deed-restricted  
5 issue is specific to the affordable -- the deed-  
6 restricted affordable (indiscernible).

7 MS. CLINTON: Which makes it rent  
8 assisted, doesn't it?

9 MS. CARRILLO: Right.

10 MS. CLINTON: Yeah. So I just want to  
11 point out, clarifying that we're only talking  
12 about 20 percent of the housing stock in which  
13 low-income multifamily residents live? Okay.  
14 Just that clarification.

15 Rich, you said that a hub of information  
16 was really helpful to the developer. You've had  
17 some experience with this, but it sounded like it  
18 wasn't perfect yet in terms of the hub or single  
19 point of contact assistance. What would make it  
20 more perfect?

21 MR. CIRAULO: So I described the hub as  
22 sort of what we would like to see. So the  
23 experience we've had so far is disjointed pieces  
24 that we might be, you know, achieving tax  
25 incentive rebates for a PV system. We might be



1 working with SMUD or PG&E, depending on the  
2 service area, for their incentive programs.  
3 There are other programs that are out there that  
4 we probably don't know about.

5           And so it's like kind of having  
6 someone -- and again, we refer to them sort of as  
7 someone we'd be happy to kind of bring in as part  
8 of our project team that could handle sort of  
9 doing that piece of the work for us, because we  
10 don't -- you know, we will sometimes delve in and  
11 try to find something that will fit and, you  
12 know, can work with the project that we're trying  
13 to develop. But that's a lot of energy and time  
14 that we don't necessarily have.

15           And so having sort of a clearinghouse or,  
16 you know, somebody that we can say here's our  
17 project, what are the different programs that  
18 would fit, that's really what we would prefer.

19           MS. CLINTON: Okay. Great. Thanks. Two  
20 more.

21           Mr. Jorgensen, you were talking about  
22 Fannie Mae and Freddie Mac. And what market  
23 segments or circumstances of the multifamily  
24 housing is eligible to take advantage of the  
25 Fannie Mae and Freddie Mac financing that you

1 were talking about. Is it everybody or is it  
2 only people who meet certain qualifications,  
3 besides the 25 percent energy and water  
4 reduction?

5 MR. JORGENSEN: Sure. Fannie Mae and  
6 Freddie Mac are government-sponsored entities,  
7 still, officially now since the Great Recession,  
8 part of the government and Treasury, actually  
9 being quite profitable for them. So really any  
10 property, any multifamily property, I mean, you  
11 know, they provide a lot of liquidity in the  
12 single-family home market. But they have a  
13 multifamily segment that's, you know, a thriving,  
14 productive, low-risk business right now where  
15 they issue loans through, you know, a broad  
16 network of originators called -- in Fannie Mae  
17 language, they're called delegated underwriters  
18 and servicers.

19 And so, you know, five-unit properties,  
20 you know, Freddie Mac has a small balance program  
21 in particular. They go after seniors. Both  
22 agencies have a lot of focus on trying to get  
23 financing out for affordable housing with a focus  
24 on incomes below 50 percent of AMI in any given  
25 jurisdiction around the country. So, you know,

1 they don't probably finance one- and two-unit  
2 properties, but they're broadly available for a  
3 large part of the market.

4           The one place where they probably are not  
5 active would be in the tax credit syndicated  
6 world where you have the 100 percent affordable,  
7 and maybe Rich can speak to this, you know, they  
8 might pursue that business. But in the past,  
9 those have typically been a bond and credit  
10 combination on the capital stack for the 100  
11 percent global projects. And so typically you're  
12 going to have some sort of governmental agency  
13 issuing the bonds, as opposed to Fannie and  
14 Freddie. In days gone by they used to provide  
15 some liquidity enhancements and some other things  
16 on those bonds, but they haven't been in the bond  
17 business in a meaningful way since the Great  
18 Recession.

19           MS. CLINTON: Okay. Thanks. The last  
20 clarifying question.

21           A couple of you folks talked about how  
22 you hate measure-based programs. And I got the  
23 sense that there was a preference for  
24 performance-based programs. So I'm wondering if  
25 anybody want so clarify in terms of what would

1 some kind of performance-based eligibility, in  
2 terms of the savings level, be a better approach?  
3 And if so, what kind of minimum?

4 MR. HODGINS: I mean, I think we need a  
5 combination because, you know, every owner, every  
6 situation is different. And so I'm a big fan of,  
7 you know, performance-based programs for projects  
8 and for owners where that makes sense and there's  
9 the capacity and the time to do that, but that's  
10 not everybody. And so having, you know, measure-  
11 based direct-install type of programs is also  
12 important if we're trying to catch a big slice of  
13 the market. Not everybody can do it. And when  
14 you get into smaller buildings, too, the  
15 engineering starts to get upside down relative to  
16 the savings. And so you need, you know, a  
17 simplified approach for simple, small buildings.

18 MS. CLINTON: Anybody else want to  
19 comment, add on? Okay. Thanks.

20 Thank you, Eugene, for letting me --

21 MR. LEE: Okay.

22 MS. CLINTON: -- seek a few  
23 clarifications.

24 MR. LEE: Absolutely. If there are any  
25 other questions?

1           Hearing none, thank you very much, Panel  
2 three.

3           COMMISSIONER MCALLISTER: Thanks  
4 everybody.

5           Thanks, Eugene.

6           MS. RAITT: So next we have Jeanne  
7 Clinton to give us a wrap up of the workshop.

8           MS. CLINTON: So I was asked -- this is  
9 Jeanne Clinton still. I was asked to give a  
10 recap on two kinds of things, one, themes things  
11 that we heard today, and separately, needs. And  
12 I've given myself permission to think of needs in  
13 two ways from what I heard today, one, needs for  
14 additional work or innovative or progress, as  
15 well as needs for more comments. So I'll go  
16 through this quickly and I'll do it in the order  
17 of the day.

18           So from Panel I, some of the themes that  
19 I was hearing, or number one -- so Panel I was  
20 data for anybody who's tuning in late in the day.  
21 One theme was it's hard to get consistent, as in  
22 consistently defined, clean data from multiple  
23 sources in order to use it in some meaningful  
24 way.

25           Another theme related to that was we need

1 relevant data that's disaggregated and targeted.  
2 And then the third aspect of conveying  
3 information, not just data but information, is to  
4 use trusted agents, such as health home-visit  
5 practitioners, community-based organizations,  
6 housing rental inspectors, where we start to see  
7 sort of communication collaboration at the  
8 grassroots level across what we've previous  
9 thought of as siloes.

10           And then two of the needs that were  
11 identified going forward is the need to give more  
12 attention to who and in what role of who gets  
13 what data in terms of owners, managers,  
14 accountants, occupants, contractors, that that  
15 needs some more thought. And also the need in  
16 the context of information data to capture all  
17 the benefits, not just the energy or the non-  
18 energy, but to capture all benefits and to get  
19 away from the siloing of energy and non-energy.

20           Then I'll move to Panel II which was  
21 focused on innovative technologies. And there, I  
22 have a few themes. One was that the stacks of  
23 different rules, definitions and time frames get  
24 in the way of innovative.

25           Secondly, that determining cost

1 effectiveness is a particular challenge for this  
2 market segment, or sometimes referred to as hard-  
3 to-reach market segments in general. And being  
4 cost effective is also difficult because of the  
5 constraints on the ability to deliver other co-  
6 benefits, unless there's an opportunity to get  
7 pooled funding from those other worlds, such as  
8 health or housing structure repairs.

9           A third theme that I heard on the  
10 technology side was the need for solutions to be  
11 easy to manage by the owners and managers of  
12 properties, as well as by the participants. And  
13 there was a lot of discussion on the single point  
14 of contact or a one-stop shop or concierge as a  
15 way to help with this ease of management on  
16 solutions.

17           Some of the needs that I heard identified  
18 commonly in this panel were the need for in-unit  
19 communication technology solutions, particularly  
20 if there's limited Wi-Fi. Would Bluetooth be an  
21 answer, or do we need common protocols, so sort  
22 of working on the technology side of  
23 communications? And also a cautious reminder  
24 that as we do onsite electrification upgrades --  
25 well, as we want to do electrification and/or add

1 EV charging, there is a challenge of doing onsite  
2 electrical system upgrades, that it's going to  
3 have a cost associated with it in order to absorb  
4 the capacity of the increased electrical demand.  
5 And obviously, that depends on time of day, as  
6 well.

7           Then moving to the CLEE presentation, to  
8 me, you know, Ted nicely had two slides with  
9 common bullets that culminated from 20 peoples'  
10 common themes from their convenings: one, the  
11 lack of program coordination complexity, that's  
12 been a general theme today; two, the lack of  
13 reliable long-term public funding; third, the  
14 lack of confidence in savings, which also, I  
15 would say, connects a little bit to performance  
16 issues and insurance product issues, we can start  
17 connecting the dots.

18           And then in terms of top solutions,  
19 again, Ted pointed out the one-stop shop, the  
20 need for metrics to get at measuring and valuing  
21 what, in that group, they call the non-monetary  
22 benefits, such as quality of life improvements.  
23 So that ties back to some of the metrics and data  
24 in health that we heard earlier.

25           And in Ted's presentation, he identified



1 a newish item that was the desire for some sort  
2 of utility tariff arrangement to fund or finance  
3 retrofits in which the customers or occupants  
4 would somehow share in the payments and benefits  
5 arrangements.

6           And then that brings us to the third  
7 panel where the common themes that I was writing  
8 about were in terms of timing, of when to go  
9 after major or deep investments, that at least in  
10 a certain market segment, one has to pay  
11 attention to the 15-year refi and recap recycles.  
12 And there are opportunities to talk about some  
13 serendipitous opportunities for upgrades if some  
14 sort of, you know, major system is going to be  
15 replaced, such as a new roof, that might happen  
16 outside of those 15-year cycles.

17           And then again, in terms of how to  
18 increase investments, three things emerged,  
19 again, the hub and single point of contact idea,  
20 the need to move to more performance-based sort  
21 of accountability rather than always having to go  
22 with measure-based systems, and the need for  
23 easier or proxy means of income verification, so  
24 as not to be an extra burden on the owner and  
25 manager.

1           And then finally, one of the themes that  
2 I kept hearing from the dais today was inviting  
3 people to, in their comments, to submit real  
4 examples of good solutions that are out there for  
5 some of these many themes that we had. Where is  
6 it being done, not necessarily on a large scale,  
7 but where is it being done successfully? What  
8 are good models? And inviting folks to put that  
9 information into their comments so that it can  
10 help these agencies further as they think about  
11 what kind of initiatives that they want to  
12 support.

13           So that's it. Thank you.

14           COMMISSIONER HOCHSCHILD: Great. Thank  
15 you, Jeanne.

16           It looks like we have one public comment,  
17 at least, from Nehemiah Stone, Stone Energy  
18 Associates.

19           MR. STONE: (Off mic.) I'm going to  
20 assume, since I'm the only public commenter, I  
21 can ignore the three minutes.

22           COMMISSIONER HOCHSCHILD: Brevity would  
23 be much appreciated.

24           MR. STONE: If I can't get through this  
25 in three minutes, I hope you'll give me some

1 room.

2 First, I want to thank --

3 COMMISSIONER MCALLISTER: You also  
4 have -- you have written comments that you can  
5 submit, as well, so --

6 MR. STONE: That --

7 COMMISSIONER MCALLISTER: -- yeah.

8 MR. STONE: -- that would take me a half  
9 an hour, so I won't go through all the comments.

10 A strong request from the TCAC executive  
11 director I want to ask you to please fund a  
12 validation study for CUAC (indiscernible)?

13 COMMISSIONER MCALLISTER: I'm sorry, what  
14 is COAC?

15 MR. STONE: The CUAC.

16 COMMISSIONER MCALLISTER: Oh, right.

17 MR. STONE: The CUAC is the California  
18 Utility Allowance Calculator, which you own. You  
19 paid for it and you maintain it at this point.  
20 And it's used -- it came up a number of times.  
21 And it gives a reasonably accurate of what  
22 tenants are going to pay for utilities.

23 Although it has been shown to be very  
24 accurate compared to billing data, for most  
25 affordable multifamily projects some data

1 indicates that it's significantly less so for  
2 older, existing buildings, and for new  
3 construction in very hot regions, Climate Zones  
4 13, 14 and 15, for example. The issue appears to  
5 be with the accuracy of the building performance  
6 software from which the heating and cooling data  
7 comes from not from the CUAC itself because it  
8 doesn't calculate those internally. So that's  
9 CBAC RES (phonetic), EnergyPro, et cetera.  
10 That's what would need to be validated for this.

11           My second comment was about something  
12 that Andy already covered, so I'm not going to  
13 get too far into it, but I want to make a couple  
14 comments on it.

15           Devices like the NEXI, and the only  
16 reason I'm using the name on that is I don't know  
17 the name of any of the other devices like it,  
18 they give the tenant information about their  
19 energy use in a way that is useful for low-income  
20 tenants. We can't expect them to be looking at  
21 tables of data on their iPads or computer screen,  
22 or even on their bill. This gives them colors,  
23 it tells them what's going on, and that also gets  
24 past any language barriers.

25           The third aspect is one of the reasons

1 there's a confidence gap is that software tools  
2 currently do not reflect reality in multifamily  
3 buildings, especially low-income multifamily  
4 buildings. Is it truly reasonable to expect that  
5 households struggling with finances will have the  
6 same thermostat set points as the quote average  
7 household? When expectations of savings are  
8 based on pre- and post-upgrade analyses that  
9 assume winter setting of 68, a summer setting of  
10 75 in both cases, and the tenants were only able  
11 to afford 62 in the winter and maybe 80 in the  
12 summer until the building was fixed, we're not  
13 going to see expected savings materialize. It's  
14 neither the contractors fault, nor the programs  
15 fault.

16           The CEC needs to commission a study to  
17 see what the typical set points are in  
18 multifamily housing and affordable housing and  
19 then make adjustments to the models. Performance  
20 guarantees came up a number of times today. This  
21 directly effects performance guarantees.

22           To really move the multifamily market,  
23 this is my fourth comment, to really move the  
24 multifamily market toward energy efficiency, we  
25 will need to give perspective renters information

1 about the energy use in similar apartments. All  
2 else being equal, a renter would prefer lower  
3 utility bills. Homebuyers get similar  
4 information from a HERS report. Potential buyers  
5 of multifamily buildings will soon be able to get  
6 that, you know, building performance data through  
7 the new benchmarking program. But renters are  
8 the ones that we're leaving out of the equation  
9 at this point.

10           The influence that will really motivate  
11 multifamily building owners to make upgrades is  
12 potential renters speaking with their feet. The  
13 CEC already has the basic tool that could be  
14 used, the CUAC. However, for it to be truly  
15 credible to potential renters, there will need to  
16 be a neutral third party, not the building owner,  
17 and preferably not the government, standing  
18 behind the accuracy of the numbers.

19           One final comment, in Panel II a question  
20 came up, what can we do to overcome barriers to  
21 scaling adoption of clean energy tech in low-  
22 income multifamily?

23           My strongest suggestion is to work much  
24 more closely with TCAC on their regulations.  
25 Their regulations used to be stronger in terms of

1 requirements for energy efficiency, both in terms  
2 of minimum construction standards and competitive  
3 points. And it seems odd to me that the  
4 collection of state agencies that are involved  
5 here does not include TCAC and SIDLAC (phonetic),  
6 who are the -- provide the largest amount of  
7 funds for both affordable and new construction  
8 and affordable renovations in the state.

9 COMMISSIONER MCALLISTER: I'm going to  
10 humor you.

11 Could you turn off the flashing red light  
12 please? Thank you.

13 So has tax reform in any way affected the  
14 availability of tax credit financing?

15 MR. STONE: Has what?

16 COMMISSIONER MCALLISTER: Has tax reform  
17 at the federal level impacted our state level  
18 availability of tax credit financing?

19 MR. STONE: It's too soon to see whether  
20 or not. But at the same time that some tax  
21 reductions went in place for corporations,  
22 California got a larger portion of low-income  
23 housing tax credits, so --

24 COMMISSIONER MCALLISTER: Actually, maybe  
25 I should have asked Lane that, but, oh well.

1 MR. STONE: So I think those things are  
2 offsetting.

3 COMMISSIONER MCALLISTER: Okay.

4 MR. STONE: At the times when it's the  
5 most difficult the tax credits go down to like  
6 \$.80 cents on the dollar. At times where things  
7 are looking really good for low-income, they're  
8 over \$1.00 per \$1.00.

9 COMMISSIONER MCALLISTER: Yeah.

10 MR. STONE: Right now it's at about \$.92  
11 to \$.94 a dollar, so --

12 COMMISSIONER MCALLISTER: Okay.

13 MR. STONE: -- and that's pretty average.

14 COMMISSIONER MCALLISTER: Okay. So you  
15 all set?

16 MR. STONE: Any other questions?

17 COMMISSIONER MCALLISTER: I think that's  
18 it.

19 COMMISSIONER HOCHSCHILD: Thank you, Mr.  
20 Stone.

21 Is there anyone else in the room who  
22 would like to make a comment? All right. Thank  
23 you. We're adjourned.

24 MS. RAITT: Oh, we do have one on  
25 WebEx --



1 COMMISSIONER HOCHSCHILD: Oh, on WebEx.

2 MS. RAITT: -- who's been waiting.

3 COMMISSIONER HOCHSCHILD: Oh, yeah.

4 COMMISSIONER MCALLISTER: Do you want to  
5 make any wrap-up comments or anything?

6 MS. RAITT: So --

7 COMMISSIONER HOCHSCHILD: Go ahead.

8 MS. RAITT: -- Tom Phillips.

9 And if anyone else on WebEx wanted to  
10 make comments, please raise your hand.

11 Go ahead, Tom.

12 MR. PHILLIPS: Hi. Yeah, thanks for the  
13 great discussions all day. I'll try to make a  
14 couple brief points and submit comments later.

15 And mainly, I guess, focusing on  
16 vulnerable populations from the health  
17 perspective, we know that our elderly population  
18 or aged or whatever you want to call them now is  
19 growing quite a bit, and as well as other  
20 populations, like those with diabetes and obesity  
21 and so on. So when you look at the statistics,  
22 about half of the population is going to be very  
23 sensitive to heat exposure, and they're going to  
24 be indoors more and more.

25 So when we look at the health co-benefits of

1 energy efficiency, they are becoming more and  
2 more important because of the demographic  
3 changes, and with climate change and overheating  
4 in California. And when you look at the coastal  
5 areas, what is it, 90-plus percent of the homes  
6 don't have air conditioning. So in terms of  
7 carbon, we can't afford to really air condition  
8 those homes without trying to reduce air --  
9 improve energy efficiency first.

10           So what I would highly recommend is  
11 trying to piggyback on other programs, such as  
12 weatherization or healthy homes programs, to add  
13 some mitigation and adaptation measures for  
14 handling extreme heat, you know, whether it's  
15 external shading or cooling booths or whatever.

16           And a few other quick comments. One  
17 growing co-benefit of energy efficiency and  
18 preventing overheating is liability. It's  
19 already been (indiscernible) for (indiscernible)  
20 up in San Francisco. It's a real big landmine, I  
21 guess, for any kind of building planning or  
22 retrofit where you're trying to prompt  
23 performance for not only energy, but thermal  
24 comfort and so on.

25           And so I think you can do a lot to

1 prevent those problems by thinking about it,  
2 applying the change and the increase  
3 (indiscernible).

4           And lastly, in terms of targeting any  
5 data, you need to look at vulnerable platforms,  
6 where they live, and then the conditions of the  
7 housing. And this is already being done in  
8 (indiscernible) where they can overlap that data  
9 to really target where they get the best bang for  
10 their buck in terms of carbon reduction and  
11 energy savings, as well as the public health of  
12 (indiscernible).

13           So thank you very much.

14           COMMISSIONER HOCHSCHILD: Thank you.

15           Is there anyone else in the room or on  
16 the phone who would like to make a comment?

17           MS. RAITT: So, yeah, so folks on the  
18 phone, if you're on the phone lines, if you'd  
19 like to make a comment, we'll open up the lines  
20 now. And if you didn't want to comment, please  
21 mute your line. Okay.

22           COMMISSIONER HOCHSCHILD: Okay.

23           MS. RAITT: So I don't think we're  
24 hearing any comments.

25           COMMISSIONER HOCHSCHILD: Okay. With

1 that, we'd like to thank all the stakeholders  
2 here and staff, and especially our colleagues and  
3 friends from the PUC for joining for a terrific  
4 and fruitful discussion, and we're adjourned.  
5 Thank you.

6 (The workshop adjourned at 4:18 p.m.)

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

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MARTHA L. NELSON, CERT\*\*367

July 25, 2018