

BEFORE THE
CALIFORNIA ENERGY COMMISSION

In the Matter) Docket No. 06-NSHP-1
of the Design of the)
New Solar Homes Partnership) New Solar Homes Partnership
_____) (NSHP) Stakeholder Forum

CALIFORNIA ENERGY COMMISSION
HEARING ROOM A, 1516 NINTH STREET
SACRAMENTO, CALIFORNIA

MONDAY, APRIL 21, 2014
9:00 A.M.

Reported by:
Kent Odell

APPEARANCES

Commissioners Present (*Via telephone)

David Hochschild
Gabe Taylor, Second Advisor
Emilio Camacho, First Advisor

CEC Staff Present

Suzanne Korosec, Deputy Director,
Renewable Energy Division
Pat Saxton, Advisor to Commissioner McAllister
Le-Quyen Nguyen, Renewable Energy Office
Elizabeth Hutchison, Renewable Energy Office
Sherrill Neidich, Renewable Energy Office
Farakh Nasim, Building Standards Office

Also Present

Justin Onorato, Lennar Corporation
Matt Brost, SunPower
Blair Sweezey, SunPower, representing the Solar Energy
Industries Association
Don Osborn, Spectrum Energy Development, Inc., Elk Grove
Aaron Nitzkin, Solar Roof Dynamics.
Bob Raymer, California Building Industry Association
Mike Hodgson, Consol
Charlie Bachand, CalCERTS
Valerie Winn, Pacific Gas & Electric Company
Tim Tutt, Sacramento Municipal Utilities District
*Bernadette Del Chiaro, CalSEIA
*Manuel Alvarez, Southern California Edison
*Lela Manning, San Diego Gas and Electric Company
*Leonard Miller, Richmond American Homes
Kathleen Polangco (ph), San Diego Gas and Electric
Company
Carrie Ledo, PetersenDean
George Nesbitt, HERS Rater
*Jacob Atalla, KB Homes
Walter Cuculic, SolarCity
Karl Fotovat, SolarCity
Shonna Sommer, Pacific Gas & Electric Company
*Brandon DeYoung, DeYoung Properties

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P R O C E E D I N G S

APRIL 21, 2014 9:07 a.m.

COMMISSIONER HOCHSCHILD: Good morning everybody. How is everyone? Thanks for -- all right, Happy Easter. I took my two daughters camping this weekend on a school trip with 20 of their classmates, which was great fun, but it's an activity that is totally incompatible with sleeping, so if I appear a little groggy...

So welcome everyone. I'm David Hochschild, I'm the lead for renewables here at the Energy Commission and my Advisor, Gabe Taylor is here with me. My other Advisor, Emilio Camacho, should be here shortly.

As some of you know, I've recently taken over the New Solar Homes Partnership Program from Commissioner McAllister about two months ago, so we wanted to pull together this meeting to have an opportunity to check in with the stakeholders about how it's going and, as I think everyone is aware, we've been working hard to streamline the process. I also want to acknowledge Pat Saxton, who has been absolutely instrumental in helping getting the streamlining going.

So at this point we're going to turn it

1 over to Le-Quyen Nguyen to walk us through the
2 agenda.

3 MS. NGUYEN: Okay. Thank you,
4 Commissioner. Welcome everybody. My name is Le-
5 Quyen. I work in the Renewable Energy Division,
6 in the Renewable Energy Office. There are other
7 key people from this program here, so I'll
8 introduce them really quickly. We have Suzanne
9 Korosec, she's our Deputy Director. Elizabeth
10 Hutchison, Sherrill Neidich, and Farakh is not
11 here, but he will be here shortly.

12 COMMISSIONER HOCHSCHILD: Before we get
13 into it, maybe we could do a quick round of
14 introductions for who is here. Would you mind
15 just saying your name and your organization?

16 MR. ONORATO: Justin Onorato, I work for
17 Lennar Corporation.

18 MR. BROST: Matt Brost, SunPower.

19 MR. SWEZEY: Blair Swezey with SunPower,
20 representing the Solar Energy Industries
21 Association this morning.

22 MR. OSBORN: Don Osborn, Spectrum Energy
23 Development, Inc., Elk Grove.

24 MR. NITZKIN: Aaron Nitzkin, Solar Roof
25 Dynamics.

1 MR. RAYMER: Bob Raymer, California
2 Building Industry Association, and Mike Hodgson
3 with Consol will be joining me shortly.

4 MR. BACHAND: Charlie Bachand from
5 CalcERTS.

6 COMMISSIONER HOCHSCHILD: Anybody else?
7 Would you like to introduce yourself? And can we
8 have staff just introduce themselves, as well?

9 MS. KOROSSEC: I'll start. I'm Suzanne
10 Korossec, the Deputy Director for the Commission's
11 Renewable Energy Division.

12 MS. HUTCHISON: Hi, I'm Elizabeth
13 Hutchison in the Renewable Energy Office.

14 MS. NEIDICH: Sherrill Neidich, Renewable
15 Energy Office.

16 MR. NASIM: Farakh Nasim, Building
17 Standards Office.

18 COMMISSIONER HOCHSCHILD: And I see
19 Valerie Winn is back there with PG&E, and Tim
20 Tutt with SMUD. Okay, great. Okay, all yours,
21 Le-Quyen.

22 MS. NGUYEN: Okay. So before we get into
23 the exciting stuff, let me go over some of the
24 boring details like the housekeeping here.

25 Most of you have been here before, but in

1 case you've forgotten, if you need to use the
2 restroom, you're going to exit the doors that you
3 came out for this room, make a left, and the
4 restrooms will be on the right. We also have a
5 cool water filter out there if you've brought
6 your own water bottle. Other things, if you need
7 a snack or a break, you can go out the doors and
8 go up to the second floor in the atrium, there's
9 also a snack bar. And then, in the event of an
10 emergency, again, exit the doors and make a left
11 like you're going to the bathroom, but then keep
12 exiting the building, to out those double doors,
13 the alarms will be going off, and you're going to
14 go across the street to the park, and we'll just
15 gather there so that we can make sure everybody
16 has gotten out of the building on time -- or
17 safely. But we don't anticipate anything
18 happening, so... I felt like I was being a Flight
19 Attendant right there.

20 So we'll get started with the exciting
21 stuff now.

22 MS. DEL CHIARO: Le-Quyen?

23 MS. NGUYDEN: Yes.

24 MS. DEL CHIARO: Can you hear us on the
25 phone? Oh, I'm sorry, I apologize for

1 interrupting, I wasn't sure if there was an
2 opportunity for folks on the phone to introduce
3 themselves. This is Bernadette Del Chiaro with
4 CalSEIA. Just wanted to let you know that I'm
5 joining by phone.

6 COMMISSIONER HOCHSCHILD: Oh, great.
7 Thanks, Bernadette. Yeah, good point, is there
8 anyone else on the phone who would like to
9 introduce themselves? Okay, thanks.

10 MS. NGUYEN: We've just unmuted everybody
11 on the phone, so if you're not speaking, if you
12 could mute your line, and then I guess,
13 everybody, if you could introduce yourselves
14 again, we didn't hear everybody.

15 MR. ALVAREZ: This is Manual Alvarez,
16 Southern California Edison.

17 MS. MANNING: Lela Manning, San Diego Gas
18 and Electric.

19 MR. DEYOUNG: Brandon DeYoung, DeYoung
20 Properties, from Fresno.

21 MR. MILLER: Leonard Miller with Richmond
22 American Homes.

23 MS. POLANGCO: Kathleen Polangco, San
24 Diego Gas & Electric.

25 MS. LEDO: Carrie Ledo, PetersenDean.

1 MS. NGUYEN: Okay, great. So if you're
2 not talking, if you could mute your line? Or we
3 could put everybody on mute right now.

4 COMMISSIONER HOCHSCHILD: I think we can
5 mute everyone for now while you're going through
6 the presentation, Le-Quyen, and then unmute
7 after.

8 MS. NGUYEN: Okay, great. Thank you. So
9 we'll do a quick program overview and then we'll
10 go into a presentation from CDIA and then SEIA,
11 and then we'll move into our discussion that's
12 just open.

13 So like I said, I know everybody is
14 familiar with the program, but I thought I would
15 quickly go over the origins of the program. So
16 the NSHP is one of three programs that was
17 created by Senate Bill 1 in 2006 and, specific to
18 NSHP, we have a goal of installing 360 megawatts
19 of solar and encouraging a self-sufficient solar
20 industry, and placing solar on 50 percent of new
21 homes. And our goal is to achieve all of this by
22 the end of the program, which is December 31,
23 2016.

24 Here are some statistics for you to look
25 at. So here you're seeing what is under review,

1 what we have reserved and installed and our total
2 numbers. Most importantly, and I'm sure what
3 most of you are interested in, is the funding
4 numbers. So right now we have about \$57 million
5 available, we have about \$18.5 million that is
6 currently on our processing list, or under
7 review, and that leaves us with a remaining
8 roughly \$40 million.

9 So this chart here just shows the housing
10 starts and NSHP participation, this is not
11 cumulative. Basically what we're showing is, for
12 single family homes, you can see in 2007 there
13 were a lot of homes being built and then the
14 recession occurred, so you see a dip in the
15 market, and then we're slowly coming back out of
16 that recession and so the participation in the
17 program has followed accordingly.

18 In 2007, we had our lowest numbers
19 because that is when the program had first
20 started, and then in 2008 we ramped up, and then
21 following the housing market participation
22 decreased, and now it is starting to increase
23 again.

24 So our cumulative megawatts, you can see
25 what we have reserved and paid, and as you can

1 see every year, cumulative, it's increasing as it
2 should. And the dollars, they're following the
3 same trend as the megawatts cumulatively, as the
4 years past, it's increasing.

5 Here is a breakdown of the product types
6 that we've paid for, so the majority of the
7 projects are large developments at subdivisions,
8 and then you have custom homes, and then we do
9 have a small percentage of affordable housing
10 projects. So right now it's eight percent. And
11 for those of you who have been here for a while,
12 you know that it was 10 percent, is what our
13 target is, and we're close to that.

14 A question in the back. George?

15 MS. KOROSSEC: You need to come up to a
16 microphone.

17 MS. NGUYEN: And I can repeat the
18 questions, too, into the microphone if necessary.

19 MR. NESBITT: To what extent can you
20 break that down, single family versus multi-
21 family? I'm sure most of the affordable is
22 multi-family, but otherwise is multi-family
23 lumped in like large developments or other? Or
24 do you know?

25 MS. NGUYEN: So it depends on how it's

1 being entered into our online application tool.
2 There is one large multi-family project that is
3 in the large developments, the U.C. Davis
4 project, and that's mostly the apartments. But
5 other than that, we don't have a lot of multi-
6 family just in the market rate housing segment.
7 If you're talking about common areas for multi-
8 family, then yes, we'll have a lot of those in
9 the market rate housing. But multi-family, we
10 see mostly in the affordable housing area.

11 So some recent programs, streamlining,
12 for those of you who have not been participating
13 in NSHP so faithfully, we created a new incentive
14 level, Code Compliant, and that's to address the
15 2013 Building Energy Efficiency Standards. We've
16 done a lot of administrative streamlining. We've
17 reduced the administrative documentation
18 requirements, we've standardized some of the
19 correction periods. We made changes to how you
20 can account for your project funding. And then
21 we also created a partial payment option. And
22 we're anticipating, you know, a lot of quick
23 turnaround times just based on those changes,
24 alone.

25 Some solar legislation to look forward,

1 there's AB 2188, that's solar permit
2 streamlining; there's AB 2227, that's
3 incorporating the building standards for solar
4 energy systems, so basically into the Title 24
5 Building Standards, having requirements for how
6 you construct and install solar energy systems;
7 AB 2649, Net Energy Metering for military
8 installations, and SB 1020, PV panel recycling.

9 So that was my really quick presentation.
10 Next, we're lucky enough to get a guest
11 presentation from Bob Raymer with the California
12 Building Industry Association. Oh, a quick
13 question.

14 MR. HODGSON: Quick question. On your
15 charts on page 6, you have only single-family
16 data.

17 MS. NGUYEN: That's correct.

18 MR. HODGSON: Correct? And then when you
19 get to page 9, you have all projects.

20 MS. NGUYEN: Yes.

21 MR. HODGSON: So what ratio is there
22 between single-family and attached housing in New
23 Solar Homes Partnership?

24 MS. NGUYEN: You said between single-
25 family and detached housing?

1 MR. HODGSON: Attached.

2 MS. NGUYEN: Oh, attached housing.

3 MR. HODGSON: Apartments, multi-family.

4 MS. NGUYEN: So I don't have that number
5 off the top of my head. We just recently started
6 tracking single-family versus multi-family, and a
7 lot of the multi-family projects that we do get
8 in, it's mostly the common areas. It's only been
9 more recently that we have actually been seeing
10 installations for the actual multi-family, like
11 especially with virtual net metering coming into
12 place. But I would say at least 75 percent is
13 single-family versus multi-family, and that's if
14 you're not including common areas on these multi-
15 family projects.

16 MR. HODGSON: So the statistics on page 6
17 are strictly single-family detached housing?

18 MS. NGUYEN: That's correct.

19 MR. HODGSON: Okay, thank you very much.

20 MR. RAYMER: All righty, thank you, Le-
21 Quyen. I'm Bob Raymer, California Building
22 Industry Association. And my apologies to those
23 of you that have seen this chart since the
24 beginning, we just recently updated it for 2013.
25 This is pretty much our housing production, our

1 Construction Industry Research Board keeps rather
2 meticulous track of data that's going on out
3 there in terms of permits pulled and permits
4 completed. And what's nice about CIRB's numbers
5 is they go back and true things up. Just because
6 a permit got pulled doesn't mean the house got
7 completed.

8 As you can see from the chart, we
9 bottomed out in 2009, that was the worst year in
10 history for this state since we began keeping
11 statistics dating back 60 years. And so with
12 that, you'll notice that in 2007, normally as we
13 go through our cycles in construction we would
14 have started shooting back up again, but that
15 wasn't the case, we went into a freefall in 2008
16 and 2009 where we bottomed out at 39,000 units.

17 We effectively had sort of an anemic
18 recovery through 2010-2011. Starting in 2012, we
19 began to see a lot of developed land where
20 permits were being pulled, but the houses weren't
21 being really built yet. 2013 represents the
22 first year where we've seen a significant
23 increase in construction.

24 Now there's a clear disparity that
25 doesn't track with historical practice, and if

1 you look in the columns here you're going to see
2 that single-family in 2012 was actually less than
3 multi-family. In years past, normally you would
4 see a 2:1 where we're building twice as many
5 single-family homes as we do multi-family. And
6 by the way, multi-family includes both apartments
7 and condos, and so there's usually a 2:1
8 differentiation and a healthy housing economy.
9 That's not the case right now. We're only about
10 40 percent of normal today, which is a whole lot
11 better than 19 percent, but it should be pointed
12 out that we're still building as much or more
13 multi-family units than we are single-family. We
14 will probably even out at 50 and 50 for 2014.

15 We're suspecting that 2016, if we have
16 access to effectively cleared lots, that should
17 be a healthy year, a very healthy year for the
18 housing economy. But one of the notable things
19 if you've noticed the *Sacramento Bee* recently,
20 housing prices are shooting up, there's a lack of
21 supply. Effectively, it's sort of a seller's
22 market right now. Hopefully with developed lots
23 being available, production housing will get back
24 strong. If you're looking for information on the
25 areas that are healthy right now, effectively

1 Coastal California, in particular San Diego, the
2 L.A. Southern California Region, the Bay Area,
3 Silicon Valley, and you've got some bright spots
4 up and around Sacramento and higher up to
5 Roseville and Rocklin.

6 Unfortunately, the Central Valley is not
7 doing so well. It is still a very anemic
8 recovery, you're effectively seen sort of two
9 separate economies emerge from this, all the way
10 from Stockton down to Bakersfield, and then into
11 Riverside there are still some heavily depressed
12 areas. Those two will be looking up, but you're
13 going to see two different sort of emergence from
14 the housing downfall.

15 And lastly, sort of as a curiosity with
16 this chart, this is also a good chart of labor
17 employment in California, this is also a good
18 chart explaining the employment levels of local
19 Building Departments, as go Housing, so does
20 California's labor market, and especially the
21 Building Departments. And so we've got the
22 curiosity of effectively -- we lost over 80
23 percent of our labor force back in 2009-2010,
24 same thing happened with Building Departments.
25 And so right now we're effectively trying to get

1 up to speed on the last two sets of Energy Codes;
2 and when I say that, I mean the 2010 Regs and the
3 2014 Regs, you've got Building Departments that
4 are just now trying to re-staff, who are trying
5 to get up to speed on this, the same thing goes
6 for the building industry.

7 And so we've got a lot of work to do.
8 The good news is we're finally coming out of the
9 downturn in the economy. We're looking forward
10 to 2014 and 2015. Any questions?

11 MS. NGUYEN: I just want to clarify, are
12 these permits that houses were actually built?
13 Or are they just permits that never were
14 completed?

15 MR. RAYMER: I would say, starting from
16 2012 and going backwards, these are the houses
17 that actually got built. In 2013, there's still
18 some truing up happening, but this is beginning
19 to be a very firm number that we see for 2013.
20 And like I said, initially what we'll get in
21 terms of projections are the permits that are
22 being pulled. As I said before, the fact that
23 the permit gets pulled doesn't mean the house
24 gets built, but the numbers for 2012 going back,
25 that's what got built. Those are very solid. In

1 2013, I don't think you're going to see much of a
2 change in that. We're now into the second
3 quarter of 2014 and the numbers for 2013 are
4 pretty solid. And like I said, these are trued
5 up on occasion, so right now looking forward, I
6 would have to say for 2014, a rough ballpark will
7 be 50,000 each, for multi-family and 50,000 for
8 single-family for 2014. It would be a pretty
9 solid number, which gives us sort of a market
10 penetration of solar of around probably five to
11 seven percent I guess would be a good round
12 number right now.

13 MS. NGUYEN: Thank you. Okay, great.
14 Thank you, Bob. Next we have another guest
15 presentation. Blair Swezey will be providing a
16 presentation on behalf of SEIA. And I'll pull up
17 that presentation right now.

18 MR. SWEZEY: Thank you, Le-Quyen. As Le-
19 Quyen said, I am standing in for Steve Zuretti
20 who is the California Manager for the Solar
21 Energy Industries Association. He sends his
22 regrets that he couldn't be here, he had to be in
23 Washington, D.C. this week. So I'm filling in
24 for Steve. And I just want to give a quick
25 overview of where solar is in the market and sort

1 of the policy drivers.

2 First, just what SEIA is about, the
3 National Trade Association for the U.S. Solar
4 Industry, which was founded in 1974 and has more
5 than a thousand member companies nationally
6 working together to make solar energy a
7 mainstream and significant energy source by
8 expanding markets, removing market barriers,
9 strengthening the industry, and just as
10 importantly, educating the public and decision
11 makers on the benefits of solar energy.

12 So let me just speak to California. I
13 mean, obviously California is a very important
14 market for residential deployment in the U.S.
15 The share of megawatts being deployed in
16 California, again in residential, actually
17 increased from 43 percent early in 2010 to 55
18 percent at the end of 2013. And just as
19 importantly, you look at the overall megawatts,
20 they essentially doubled from a little less than
21 200 megawatts in 2012 to over 400 megawatts in
22 2013.

23 So going on to the next one. Why is
24 California such a good market for residential PV?
25 Well, great solar resource and relatively high

1 electricity rates have been sort of the
2 underlying drivers, but there's been a lot of
3 policy initiative at the State level to build a
4 market for solar here in California. And I'll
5 just touch on a few of these.

6 The California Solar Initiative is a 10-
7 year program of declining incentives with a
8 statewide goal to deploy 3,000 megawatts and
9 that's onsite behind the meter, both residential
10 and non-residential systems. And as Le-Quyen
11 mentioned earlier, the New Solar Homes
12 Partnership is a component, an important
13 component, of the CSI.

14 The availability of net energy metering
15 has been a key policy for solar, essentially
16 providing retail rate billing credits when
17 generation exceeds the instantaneous on-site
18 energy demand, and for the energy that's exported
19 to the grid, and then the customer is able to
20 draw on those credits when their demand exceeds
21 their production at other times of the day.

22 Rule 21 has been very important in terms
23 of streamlining the interconnection process and
24 the timelines for interconnection.

25 And then we've got the Federal

1 Incentives, the 30 percent investment tax credit,
2 as well as accelerated depreciation, which third-
3 party owners are able to take advantage of and
4 provide lower prices to residential customers.
5 And I'll talk a little bit more about that in a
6 second.

7 And then altogether, California, but
8 really the global market scale has driven solar
9 cost reductions over the last several years. So
10 if you go to the next slide, see how residential
11 installed system prices in California have
12 declined from a little over \$7.00 a watt at the
13 beginning of 2010, that is, to just under \$5.00 a
14 watt average price at the end of 2013.

15 So going forward, there are a number of,
16 I'd say, uncertainties that will impact in one
17 way or another the future growth of the market,
18 as well as the ability of the New Solar Homes
19 Program to potentially meet its goals. The first
20 is, well, these are both tied together in the
21 passage of A.B. 327 last year which allows the
22 Public Utilities Commission to make certain
23 changes to residential rate design, essentially
24 compressing the tiered rates, but also provides
25 authority for the Commission to impose a fixed

1 charge, fixed monthly charge on residential bills
2 of up to \$10.00 a month, and then increasing
3 within inflation after 2017. And that is sort of
4 a more general trend to try to shift more of the
5 utility revenue recovery from volumetric charges
6 to fixed charges, and that is certainly going to
7 have an impact if there are certain charges that
8 customers can't avoid; it's going to have an
9 impact both on solar and on energy efficiency,
10 essentially on the value of energy savings
11 generally.

12 I skipped over net metering because I
13 wanted to do the rate design first. The AB 327
14 also provides certainty around the statutory five
15 percent net metering cap, but also calls for the
16 Commission to undertake a proceeding to decide
17 what the successor tariff to NEM will be after
18 the five percent cap is reached, so that
19 proceeding is actually beginning later this week
20 at the PUC. The PUC has to decide what the new
21 NEM tariff will be by the end of next year, 2015.

22 And then, just going back, the other
23 issue that the Commission was to address was how
24 the current NEM customers who come in under the
25 five percent cap would be treated going forward,

1 and they recently decided that those customers
2 under the five percent cap would continue to
3 receive the full retail NEM credit for 20 years
4 from the date of project interconnection.

5 We're seeing efforts to make some
6 revisions to Rule 21, particularly in terms of
7 advanced inverter capabilities and what
8 requirements might be imposed down the road,
9 which could impact how much energy is able to be
10 consumed by the customer onsite versus energy
11 that might get used to some extent in providing
12 these advanced inverter requirements, as well as
13 potentially imposing higher costs for the
14 inverters themselves.

15 And then Le-Quyen mentioned permitting.
16 Permitting can be a very big issue in terms of
17 increasing soft costs, as we bring down the cost
18 of systems and panels, there's also the cost of
19 actually doing business, doing the installations,
20 and doing the permitting. Le-Quyen mentioned AB
21 2188, which is a bill in the Legislature right
22 now to try to reduce timing and the cost
23 impediments by removing certain barriers on the
24 permitting side.

25 And then looming over all of this is what

1 happens with the Federal Tax incentives after
2 2016, they're all scheduled to expire by the end
3 of 2016, so we may not have the 30 percent tax
4 credit for residential going forward.

5 MR. RAYMER: Blair?

6 MR. SWEZEY: Yes.

7 MR. RAYMER: Before you go on, could you
8 kind of cover again Rule 21 revisions?

9 MR. SWEZEY: Right. Well, there's an
10 effort underway to -- inverters have particular
11 types of capabilities, some which are utilized
12 and some which aren't right now. And if you end
13 up, you know, if you use some of these in a more
14 overt way, it can actually use some of the energy
15 that you would normally -- it takes energy to
16 provide those services. And if the customer is
17 uncompensated for providing those services to the
18 utility, then that has some impact, whether how
19 big it is, but also the higher cost of providing
20 those capabilities in the inverters. And there's
21 also the possibility that there could be
22 curtailment, longer term under certain
23 circumstances through those inverter
24 capabilities.

25 So the relevance to the New Solar Homes

1 Program has been alluded to, to some extend
2 already, but just keep in mind the goal, one of
3 the goals of SB 1 was to establish a self-
4 sufficient solar industry that would make solar a
5 mainstream option for both homes and businesses,
6 and also to place solar energy systems on 50
7 percent of new homes in 13 years. And I think if
8 I do the calculation on the number that was in
9 one of the graphics earlier, we're at about maybe
10 20 percent of new homes today, so we still have a
11 ways to get to 50.

12 I've got 400 megawatts here as the NSHB
13 goal is -- I guess 360 maybe, but I see it both
14 ways in different documents. And then looking
15 forward beyond 2020, you know, we have greenhouse
16 gas reduction goals through 2020, but looking
17 ahead in how we get from 2020 to 2050 and
18 particularly just out to 2030, I think buildings
19 are likely to be a primary target of greenhouse
20 gas reduction goals going forward. So solar is
21 going to continue to be an important part in
22 reducing the carbon footprint of homes, and
23 certainly this also runs into the goals for Zero
24 Net Energy housing that all new residential
25 construction by 2020 in California be Zero Net

1 Energy.

2 So that's just sort of an overlay for
3 policy where we've been until now and what we're
4 facing going forward, and I think it's important
5 to understand what the implications are for
6 meeting the goals, the New Solar Homes goals for
7 some of these policies, and hopefully everyone
8 will be engaged going forward in a lot of these
9 discussions.

10 And here's the contact information for
11 Steve Zuretti, again, the California Manager at
12 SEIA. Thank you.

13 MS. NGUYEN: Okay. Thank you, Blair, for
14 that presentation. So now after all of these
15 great presentations, we're actually at the open
16 discussion part of this forum. Commissioner?

17 COMMISSIONER HOCHSCHILD: If we just open
18 up the phones for a minute, just so I think Le-
19 Quyen is trying to hear from the trade
20 associations first. Bernadette from Cal SEIA,
21 are you still here on the line?

22 MS. NGUYEN: And all the phone lines have
23 been unmuted.

24 COMMISSIONER HOCHSCHILD: Is Bernadette
25 still on the line?

1 MS. DEL CHIARO: Yeah, I'm here.

2 COMMISSIONER HOCHSCHILD: Did you have
3 any comments from Cal SEIA on the program, before
4 we open it up to everyone else?

5 MS. DEL CHIARO: I think in general we're
6 wanting to reengage more deeply in the months
7 ahead. We really appreciate the changes that the
8 Commission has made to the program thus far, and
9 feel like it's obviously an incredibly important
10 program for California and for the growth of
11 solar power, and so we look forward to working
12 with the program administrators to continue to
13 strengthen it.

14 COMMISSIONER HOCHSCHILD: Okay, great.
15 Then I wanted to go first to Leonard Miller from
16 Richmond Homes because I understand he has to get
17 off the line. Are you still on the line,
18 Leonard?

19 MR. MILLER: I am. Thank you. I
20 appreciate you giving me the time and thanks for
21 including me today. I didn't really have a whole
22 lot, I would just say how excited I have been
23 about the program. You know, Richmond made a
24 commitment approximately three years ago to offer
25 solar on all homes in all communities, and I

1 think we did probably more than 500 homes last
2 year with solar, and close to 1,000 over the last
3 two plus years.

4 So the program has been working very well
5 for us. We're seeing that we offer a base system
6 where we're finding about 70 percent of our
7 buyers are upgrading to kind of a larger system.
8 So the feedback that we get, I mean, just to let
9 you know how it's working is on a Sunday night,
10 you know, I get reports from all of our
11 communities that talk about who they're working
12 it with sales and, also, every time that we sell
13 a home, the sales agent sends out a note talking
14 about the sales process. I've got to tell you,
15 in easily over half the cases, solar is making a
16 difference for us, consumers want it, and the
17 buyers want it. But what really makes it work
18 with us is to have it as an included feature in
19 the home, rather than having it be an upgrade.

20 So, you know, things I would note is that
21 what's near and dear to our heart is ensuring
22 funding stability, making sure -- eliminating the
23 uncertainty and potential shortfalls. That would
24 be a major setback for us. Rebates and those
25 sorts of things absolutely make a difference,

1 there's a few places like with DWP in Los Angeles
2 where we don't get those rebates and it doesn't
3 make it economical for us to offer the program.
4 You know, the cost to us is anywhere from \$5,000
5 to \$6,000 basically to offer it as an included
6 feature, and that's when we get these sorts of
7 rebates. If we don't get it, you know, that
8 amount can nearly double and it just economically
9 doesn't make sense for us, and then unfortunately
10 I don't think any of the builders have gotten
11 much traction when we don't offer it as an
12 included feature, but just sell it as an upgrade.

13 So it's very very important for us. We'd
14 love to see a higher rebate tier for qualifying
15 Net Zero homes going forward in the future. But
16 I just thought I'd keep it brief like everybody
17 else had done, and it's been a great program for
18 us, I'm going to try and stay on the line as long
19 as I can today. But it's been a great program,
20 something that we support and we'll offer any
21 sort of assistance in any way we can, but that's
22 probably it in just a very short summation.

23 MS. NGUYEN: Okay, great.

24 COMMISSIONER HOCHSCHILD: That was
25 Leonard Miller from Richmond Homes.

1 MS. NGUYEN: We actually have somebody on
2 the WebEx right now who has some questions that
3 they'd like to ask, so Michael Winkler. Okay,
4 you're unmuted. Okay, well, if you think of
5 those questions, your line is still unmuted. We
6 also have a roving microphone, so people who
7 don't feel comfortable sitting at the table,
8 you're welcome to just grab the microphone and
9 state your question.

10 Okay, so now we're at the open discussion
11 -- oh, Bob?

12 MR. RAYMER: I've got some questions on
13 funding. You've got the good chart that you've
14 put together here on page 3, I think it was like
15 your third chart? Yeah.

16 The remaining funding, \$38.9 million, the
17 figure I'm familiar with, of course, is the \$57,
18 which doesn't account for the stuff that's in the
19 line. That does include pending loan payments
20 that are due back by June 30th, does it?

21 MS. NGUYEN: Yes, it does not include it.
22 So there are two loan repayments, there's one for
23 \$10 million and another for \$20 million that are
24 supposed to come in by the end of June 2014.
25 That hasn't been confirmed yet, though and we

1 won't know until we see the May revise of the
2 Budget.

3 MR. RAYMER: Understood. And we're also
4 as an industry supporting the approval of the
5 EPIC Investment Plan. That has some backstop
6 funding. Should we sort of begin to run out of
7 funding probably mid to late year 2015 before the
8 program expires, do you foresee any problems at
9 the PUC? They have to approve the EPIC
10 Investment Plan, don't they?

11 MS. NGUYEN: So the EPIC Investment Plan
12 has to go to an Energy Commission Business
13 Meeting first and get approved, and then we'll
14 submit it to the PUC for approval. So I'm not
15 sure --

16 COMMISSIONER HOCHSCHILD: I believe
17 you're hearing that at tomorrow's Commission
18 meeting.

19 MS. NGUYEN: Yes.

20 COMMISSIONER HOCHSCHILD: Yeah, I think
21 we'll be voting on it tomorrow.

22 MS. NGUYEN: Yes, for the Energy
23 Commission.

24 MR. RAYMER: The Building Standards
25 commission was Bernadette because they've got a

1 solar issue over there. We've already submitted
2 our indication for support for that.

3 MS. NGUYEN: Right. And just whether or
4 not the PUC will approve or not, it's unclear.

5 You know, as many of you are familiar
6 with the last Investment Plan, they did not
7 approve funding for NSHP, and so we're requesting
8 funding again for this cycle, but it's anybody's
9 guess as to whether they'll actually approve it.

10 MR. RAYMER: Thank you.

11 MR. NITZKIN: I wish I had all my notes
12 from years ago, but I'm curious to know how are
13 we doing from -- again, Aaron Nitzkin -- how are
14 we doing in terms of reserved and installed
15 megawatts at this point in time relative to the
16 original forecast that we had when this program
17 was set up? I mean, are we doing about what we
18 were expecting at this point not as well, or are
19 we ahead and have we taken a step back just to
20 kind of gauge the overall progress?

21 COMMISSIONER HOCHSCHILD: Well, I mean, I
22 don't have those original projections from when
23 we all first got together some years ago, but, I
24 mean, my views were way way behind and that's
25 principally a feature of two things, one is that

1 the housing market collapsed, right?

2 And so literally right at the point where
3 we were launching; and secondly, we had a pretty
4 high barrier entry which has now been dealt with
5 with these things, so I don't know how far behind
6 we are, Pat, I mean, do you have any comments?

7 MR. SAXTON: I don't actually remember
8 the charts either, but I suspect just like
9 Commissioner Hochschild that we're not at the
10 trajectories that were estimated.

11 COMMISSIONER HOCHSCHILD: One thing I
12 just want to get clarity on because I've heard a
13 lot of different numbers about what portion of
14 the new homes being built today are done with
15 solar. Obviously the goal is 50 percent by the
16 end of --

17 MS. NGUYEN: 2020.

18 COMMISSIONER HOCHSCHILD: Is it 2020 or
19 2017? I thought it was --

20 MS. NGUYEN: 2020. So our goal is 50
21 percent of new homes, but it's 2020, I believe,
22 and it's 13 years is what it calls out.

23 COMMISSIONER HOCHSCHILD: Oh, okay. All
24 right, so our goal is 50 percent. You know,
25 Mike, I remember when we met earlier, six months

1 ago, you were saying you were guessing around 12
2 percent, you know, SunPower said they were
3 guessing it was around 20 percent of homes, and
4 you earlier, Bob, were saying we were in the five
5 to seven percent range. So, can you, Mike, maybe
6 comment on that?

7 MR. HODGSON: Well, yeah. What I was
8 taking was reported completed homes sold with
9 solar.

10 COMMISSIONER HOCHSCHILD: Yeah.

11 MR. HODGSON: And comparing it to Le-
12 Quyen's information that she posts religiously
13 every quarter, I believe, on completed homes.
14 And I don't have the fourth quarter of 2013, I
15 presume -- is that posted now?

16 MS. NGUYEN: We've posted -- so the
17 information right here is from the beginning of
18 April, but I think the information you usually
19 request from me I have not provided you with yet.

20 MR. HODGSON: Yeah, well, that's okay.
21 But, I mean, so we ask for that information from
22 the New Solar Homes Partnership and then divided
23 by the single-family starts. And I think the
24 last number I gave to Bob was, what, five or
25 seven percent?

1 MR. RAYMER: Yeah.

2 MR. HODGSON: So it's pretty simple. Can
3 you tell us what we did in 2013?

4 MS. NGUYEN: The numbers? I don't have
5 that off the top of my head, I'm so sorry.

6 MR. HODGSON: I'm guessing it was like
7 3,000. Does that sound off?

8 MS. NGUYEN: Installed? Probably a
9 little bit more. I think in 2013, we saw a lot
10 of the payment claims come in.

11 MR. HODGSON: Okay.

12 MS. NGUYEN: And it's really hard when
13 we're doing all these numbers because with NHSP
14 we see a little bit of a lag, so a lot of the
15 reservations come in, you know, two or three
16 years earlier, and the payments, they trickle in
17 two or three years after the reservation has been
18 made, and a lot of time the home was built and
19 the system installed the previous year.

20 MR. HODGSON: But we're trying to take
21 basically the payments made and divide it by the
22 single-family market. And that's the statistics
23 we give you.

24 MR. RAYMER: And part of the problem in
25 that mathematical game that gets played, you look

1 at 2011 and 2012, and you have a remarkably low
2 number for single-family homes, and so if you've
3 got 2,000 units in there, you're at the 10
4 percent figure.

5 For 2013, we did 36.5 thousand units,
6 single-family. And so if you kept a nice robust
7 application for solar, you're going to end up
8 sort of dropping below a 10 percent figure. I
9 would put it at eight percent for 2013.

10 The question here is, you've got some
11 reservations in the pipeline right now, and not
12 necessarily picking out companies, but KB and
13 Lennar, that both have very healthy supplies of
14 solar that are going to be going on as a standard
15 feature. It's still up in the air whether that
16 figure -- you could see it jump to probably 15
17 percent in 2014, it just depends on how the
18 market handles this year.

19 The important point is, at the national
20 level it takes about 17 years for a product to
21 get sort of assimilated into construction.
22 Things are quicker in California, but still here
23 in California you're looking at probably a nine
24 to 12-year process as opposed to 17, and so quite
25 frankly the numbers for solar are quite striking.

1 I've never really seen something accepted this
2 quickly at such a high volume. And so, in terms
3 of the State's goals, you're doing quite well
4 right now.

5 COMMISSIONER HOCHSCHILD: I -- obviously
6 this program, I think, is sort of the glide path
7 to get us to a Zero Net future, and I guess in
8 many ways 2014 for the Energy Commission is the
9 year of implementation of a whole bunch of
10 things.

11 We're implementing Prop. 39, you know,
12 those Regs are done, we're getting \$381 million
13 out the door for that this year; we're
14 implementing the 33 percent RPS for the MUNIs,
15 those Regs are just finished; and 118 we're
16 implementing.

17 And this is sort of the new New Solar
18 Homes Partnership now with the housing market
19 picked up, and I think while the barrier busting
20 that Commissioner McAllister and Pat Saxton and
21 the team have done, I think this is kind of --
22 we're turning a new leaf on this program.

23 I am actually interested to explore the
24 question of why builders so far who are saying no
25 to solar, what is it, I mean, how big a barrier

1 actually is it? And Matt Brost from SunPower,
2 maybe you could comment on that, just how close
3 are we -- just say a little bit more about the
4 folks who are not at the table today, but could
5 be, and what you think we need to do to reach
6 them? Is it a matter of time? Are there other
7 reforms?

8 MR. BROST: I'll do my best on that. So
9 I'm working primarily with the country's larger
10 production home builders, and one thing that I
11 will say, particularly with the customers that
12 we've been working with for quite a while in
13 California, and we're really starting to see the
14 program actually have sort of this spillover
15 effect into other states right now. So those
16 builders who have done it, I think, have found
17 success; what we haven't really experienced is
18 any of our large production builders start and
19 then stop. So once they've started and found
20 success with it, they've kept going. So I think
21 that that says a lot about the program.

22 We've found innovative ways to keep the
23 cost down, as you heard from Leonard, you know,
24 the rebates here in California are extremely
25 important. And when you try to provide a good

1 pricing strategy along with the rebates, you
2 know, the economics to the homebuyer end up
3 looking pretty good.

4 The guys that are not doing it, I think
5 what you would find is actually some of them are
6 doing it, but they're dabbling, so I would say of
7 the top 10 or 20 builders in California, I would
8 say almost the majority are doing it, but the
9 majority are not doing it as a standard included
10 feature, like Richmond and KB and a few others.

11 And I think Leonard even mentioned it,
12 when you try to do it as an option, you're not
13 all in, right? So it makes it more difficult for
14 sales people to actually sell it, it's more
15 difficult for the solar companies to work with
16 those builders because they're not taking --
17 they're not as invested in the program as they
18 are when they do it, when they make a bigger
19 financial commitment by including that in their
20 base home cost.

21 So I think that the Code is going to have
22 an impact, I mean, we have an upcoming Title 24
23 Code that at least some of the climate zones will
24 now allow builders to take credit for PV systems
25 on their homes, although not as big of a credit

1 as they actually probably should get.

2 But, you know, it's a step in the right
3 direction and when you combine PV credit with
4 potential marketing opportunity, you know, it's
5 something that will really help the builders
6 market the homes. That could get some of the
7 other builders to participate a little bit more.

8 So I don't have much more to offer than
9 that. I do know Jacob Atalla with KB Homes, his
10 corporate office is on the phone and he's got a
11 few comments he'd like to make, and he may be
12 able to speak to that, too, from their
13 perspective.

14 COMMISSIONER HOCHSCHILD: Yeah, can we
15 unmute him?

16 MS. NGUYEN: Jacob, your line is unmuted.

17 COMMISSIONER HOCHSCHILD: Go ahead.

18 MR. ATALLA: Thank you, Commissioner.
19 And good morning everyone. Thank you for doing
20 this hearing and appreciate you including us in
21 it.

22 So to answer another angle on your
23 question, a lot of it is in the planning and, you
24 know, for builders to change specs, it does take
25 a considerable effort. As you know, solar will

1 touch on many trades, many aspects of the home
2 construction, including in some cases truss
3 design and other things related to the roof. So
4 I think certainty in the program, ensuring the
5 funding stability, reducing the balance of system
6 costs including permit fees, and the complexities
7 related to submitting for solar permits and so
8 on, all these things when they align very well,
9 they should nudge more builders towards it, in
10 addition to of course customers' interest and
11 demand.

12 The NSHP Program has done a tremendous
13 job in facilitating a lot of these items, so it
14 should be more, I would grant you that, and maybe
15 as the big builders move deeper into it in
16 markets, it will bring other builders into the
17 mix.

18 Last year, KB Homes built over 1,000
19 homes mainly in California that have solar on
20 them -- that's 2013. Overall, 14 percent of KB
21 homes delivered across the country had solar last
22 year.

23 And I think at this time, we've been
24 through this journey for a little bit and we're
25 seeing what's on the horizon in terms of

1 opportunities and issues. One of these
2 opportunities is Net Zero Energy homes. As we
3 all want to move towards them, and KB has been
4 making steps towards Net Zero Energy homes, we
5 think that solar is a very important component of
6 it and, if there is more support for it, for the
7 solar incentive towards Net Zero Energy Homes,
8 that could benefit both the solar program and the
9 Net Zero Energy targets and desires of the state.
10 That's an opportunity.

11 In terms of challenges, one of the key
12 challenges we're looking at right now, we're
13 concerned about, is utilities' net metering
14 clarity and how utilities may handle fees and
15 tariffs and so on related to solar customers in
16 the future. I think that's an issue that we all
17 have to address soon because the attractiveness
18 and the economics to the end user of solar may be
19 impacted in a significant way.

20 The program has helped us make solar a
21 standard in many many communities. You know, we
22 see it make economic sense for us, we included it
23 as part of the mortgage, we don't do lease, it
24 makes sense also for our customers, whether they
25 are young families that are just starting and

1 want to save money on the utilities by financing
2 their solar as part of their mortgage, or the
3 older families, the retirees or near retirees
4 that want to know what are their fixed costs
5 going forward to balance it with their fixed
6 income.

7 Without the NSHP Program, the solar may
8 be less attractive for a builder, including KB,
9 to put it in on the home, and therefore the
10 stability of the program and the availability of
11 funding, albeit it's going down gradually, is
12 important for all of us.

13 COMMISSIONER HOCHSCHILD: That's very
14 helpful. Thank you, Jacob. And you mentioned 14
15 percent of KB Homes were done with solar
16 nationwide. What portion in California of your
17 homes were done with solar last year? Do you
18 know?

19 MR. ATALLA: It is about 90 percent.

20 COMMISSIONER HOCHSCHILD: Ninety percent,
21 wow. That's great.

22 MR. ATALLA: Yes.

23 COMMISSIONER HOCHSCHILD: Well, I really
24 enjoyed -- I spoke obviously of your dedication
25 ceremony in Lancaster, and I'll just throw this

1 out to the rest of you in the room, I'm
2 personally committed if you do a dedication and
3 need us there, I'll do everything I can to be
4 there in person.

5 MR. RAYMER: That's good to know.

6 COMMISSIONER HOCHSCHILD: Yeah,
7 absolutely. I had one other question I wanted to
8 just throw out, which is in terms of white papers
9 or studies the Energy Commission could perform
10 that would help, what are the kind of questions
11 you think we could possibly -- I'm thinking out
12 loud, like one of the -- I believe they did a
13 study in Japan on what happens to energy
14 consumption in homes that are built with solar
15 because you elevate the consciousness about
16 energy. And it was something like an eight
17 percent reduction, just a conservation effect as
18 a result of having solar.

19 I've actually never seen that evaluation
20 done in California; that's one question I have.
21 I'm just throwing it out, are there others in
22 terms of solar accelerating sales versus non-
23 solar homes, or other questions you think the
24 Energy Commission could address? Yeah, go ahead.

25 MR. CUCULIC: Walter Cuculic with

1 SolarCity. Before you jump on to that, one of
2 the things that I think that's been happening in
3 the industry that is also going to accelerate to
4 get to that 50 or ideally 100 percent is the
5 products that are being offered.

6 And so about I think over the last three
7 years, companies like SolarCity, Lennar now is
8 offering either a lease or Power Purchase
9 Agreement, I'm not sure exactly how they're
10 structuring it, but Lennar is doing that now,
11 Sunrun had done it before, I think some other
12 leasing companies have started to offer the
13 leasing programs, the third-party finance
14 programs to new home builders.

15 And if you look on the retrofit side in
16 comparison, about 60-70 percent of solar systems
17 that are installed are through third-party
18 finance here in California, and that's grown from
19 I think about 45 percent in 2010 to about 70
20 percent in 2013.

21 We've seen similar -- although it hasn't
22 reached 70 percent on the new homes side, it's
23 gone from zero just a few years ago to probably
24 about 30, 40, 50 percent, somewhere in that range
25 of cash versus third-party leasing programs.

1 And so I think as other solar providers
2 start to offer the leasing programs and give
3 homebuyers a choice between cash and lease
4 programs, that's going to continue to help the
5 development or the adoption of solar and new
6 construction. The reason for that is, as Bob had
7 referenced, solar systems and new construction
8 still today, even with the rebates, depending on
9 the system size, can cost \$5,000 to \$20,000 in
10 house costs. Depending on the size of the house,
11 that can cost more than the entire framing for a
12 house. It can be the most expensive item that
13 goes into the house.

14 As other house costs have increased, as
15 well as mortgage rates have increased, that kind
16 of affordability and what you can put in a house
17 and finance in a mortgage is becoming smaller and
18 smaller and smaller.

19 What we've seen with builders that we
20 work with is, by offering homebuyers a choice
21 between both cash and lease, you don't have to
22 have mortgage dollars available to choose solar.
23 I can go solar and not have to choose or not
24 sacrifice by choosing flooring, design, other
25 options, I can use the lease program as a second

1 financing tool. And that's kind of proven out on
2 the retrofit side because they have -- the reason
3 I bring that up, too, is rebates have gone away
4 for retrofit and you continue to see high high
5 adoption of solar on the retrofit side.

6 MR. RAYMER: Bob Raymer with CBIA.
7 Before I get into some needed studies or some
8 expansions of existing studies, I'd like to
9 indicate the Code Compliant option in New Solar
10 Home is a very viable option for, let's say, the
11 small and medium size builder who may not have
12 access to bundled financing approaches to product
13 purchasing.

14 And so I anticipate, to the extent the
15 Energy Commission, CBIA and others can sort of
16 get the word out over the next six to 12 months,
17 and that could be a very bright way of bringing
18 in those who are not part of the program so far.
19 And that's going to be key down in 2020.

20 And so that was one of the steps that
21 we're looking at. The other one is something
22 that CBIA has been working on with the Energy
23 Commission for quite some time, as was mentioned
24 earlier by Matt, the 2013 Regs that kick in in
25 July will give very limited and static credit for

1 solar installation in seven of the climate zones.

2 For the Regs that will kick in in 2017,
3 CBIA and, it seems, the Energy Commission is
4 receiving this well, to provide some manner of a
5 far more robust compliance credit for solar,
6 depending on the size of the system and, of
7 course, where it's installed, but effectively
8 having 15, maybe even 16 climate zones being able
9 to have access to compliance credit can be very
10 helpful.

11 As we're looking at the energy efficiency
12 changes that are being considered for 2017, these
13 are what I would say major changes in common
14 construction practice, namely the advanced wall
15 system and the roof deck system, and the Energy
16 Commission for at least the roof deck system is
17 looking at allowing an alternative installation
18 of solar.

19 And I have to believe right now, given
20 what I know today, that a great many builders
21 will choose the solar option before going with
22 the roof deck, not that the roof deck can't be
23 done, but getting it done properly very quickly
24 is going to be a tough road, and there's a lot
25 more who are familiar with solar.

1 And so I personally see solar getting
2 another shot in the arm when the 2017 Regs come
3 in.

4 Our personal view is there really
5 shouldn't be a restriction in the studies that
6 should be done, Mike did a little bit of this two
7 years ago when he was doing some impact analysis
8 for CBIA, and that is looking at the restrictions
9 that are placed on solar and what, if any, should
10 happen if there weren't going to be those
11 restrictions.

12 We need to have a better understanding of
13 how solar fits into our TDV-based energy
14 efficiency standards and effectively that could
15 be a very useful study if done over the next six
16 to 12 months. The Energy Commission could use
17 the information yesterday.

18 So we're going to be working our best to
19 try to provide as much of that as we can, but
20 we'll probably be looking to others to sort of
21 hop into the mass here.

22 MR. OSBORN: Ah, there we go. As far as
23 the barriers go with some of the small or medium
24 sized builders, both single-family and multi-
25 family that we've talked to, one of the things

1 that comes up most often is simply the complexity
2 of the program. The smaller builder simply
3 doesn't have the staff, nor the time to deal with
4 what they perceive as a very complex program to
5 navigate through.

6 Some of the things that are being
7 suggested and implemented will go a long way
8 towards alleviating that, but that is still a
9 major barrier for the smaller builders, I think.
10 Also, the uncertainties as far as what the
11 incentives are and what they will be going
12 forward is another major concern that is raised
13 quite often.

14 The third area, which I think will be
15 increasingly a strong barrier is the uncertainty
16 surrounding NEM, for all the programs that the
17 CEC is concerned with -- New Solar Homes, Zero
18 Energy Program, CSI in general.

19 Having a strong NEM program which is
20 simple to understand, provides full value, and
21 permits the owner to directly benefit from what
22 they do behind the meter is really an amazingly
23 critical point for this and other programs.

24 And while I think the new rate designs
25 will go a long ways towards alleviating the

1 perceived shift among customer classes, what
2 happens with NEM 2.0 will critically impact the
3 rest of your programs.

4 MR. NESBITT: George Nesbitt, a HERS
5 Rater. Looking at the data, it looks like
6 there's about 90 megawatts of systems installed,
7 paid, and reserved, and we're seven years in to a
8 10-year program. So that's 90 megawatts out of a
9 360 megawatt goal.

10 So I think it's partly the downturn, but
11 the downturn brought prices down, which brought
12 better affordability on the one hand, you know,
13 so before the downturn house prices had been
14 going up and up and up, and that works against
15 us. And we're back sort of into that mode in a
16 lot of markets.

17 But there's a lot of barriers, I think
18 especially in the custom home market, especially
19 when we get into additions, projects that would
20 comply because they're total gut rehabs. We've
21 heard others.

22 I've personally had a project I couldn't
23 get through NSHP plan check even though I got it
24 through the New Home Program. And those projects
25 are projects that went to CSI when it existed,

1 which is one of the reasons uptake on the NSHP
2 was slower. CSI, you didn't have to pay for the
3 HERS Rater to verify the PV system, not to
4 mention there were no credible efficiency
5 requirements. All you had to say is, "Oh, yeah,
6 we're efficient." Right. And we gave you a
7 rebate.

8 So to kind of address your question about
9 research, something I've proposed to a few people
10 at the Commission already, is to actually do a
11 study on ZNE Homes. Now, I certified the first
12 new single-family ZNE home in California, like
13 two years ago. The Commission wrote a nice
14 proclamation, gave credit to the builder, to
15 CalcERTS, not me, the Rater who actually made it
16 happen, who took it on his own initiative because
17 he was doing everything else that was needed
18 anyway.

19 So we've got a large database of
20 information in the NSHP because we both have the
21 Title 24 documentation, as well as the PD
22 documentation, so we could go through that and
23 see what percentage of homes that have been in
24 the program have actually hit ZNE already.

25 I'm currently working on an 80-unit

1 multi-family affordable project which will be
2 wrapping up in a few months that will be ZNE.
3 That is according to the CEC definition and the
4 HERS Rating system, so it's Net Zero Time
5 Dependent Value, and, you know, Bob's question?
6 Yes, the PV plays well for TDV, quite frankly.

7 Also, you mentioned reduction of energy
8 use for people that get systems. I would argue
9 it's probably the reverse. They now have a zero
10 bill, so time and time again I see people
11 thinking, "Oh, well, I've got a credit of a
12 thousand dollars which I don't get." Right? "So
13 how do I use more electricity?"

14 So you will see people on their own, as
15 well as I have seen the solar industry push
16 people to add more electric load because they're
17 getting free solar electricity. And so that's
18 common with efficiency upgrades, too; it's common
19 with solar hot water. They don't see the impact
20 on their bill as much, so they tend to use more
21 because it's free.

22 So that's something you need to look at
23 and that's one of the reasons I really don't like
24 Net Metering, you lose sight between your
25 consumption versus production.

1 COMMISSIONER HOCHSCHILD: Thank you. Go
2 ahead, Mike.

3 MR. HODGSON: Thank you, Commissioner.
4 I'd like to follow-up a little bit on Bob's
5 comments and maybe broaden the question you
6 asked, how can the Energy Commission help put
7 solar into the building industry in a production
8 environment?

9 The concerns the building industry has
10 been expressing, especially with the 2016
11 Standards that are being developed now, is really
12 the radical change in how we're doing attics and
13 walls. And it's not attics and walls, it's just
14 we're trying to adopt a lot of things in the
15 building industry that are relatively new to our
16 construction style.

17 And I'm not saying the building is slow
18 to change, but there's a lot of liability in
19 things that we do in the building industry and
20 there's a lot of long term consequences of that,
21 and so they are slow to change until they know
22 that warranty issues are satisfied, there's
23 quality installation. And I think in the 2013 --

24 COMMISSIONER HOCHSCHILD: Will you please
25 mute the phone? Thank you.

1 MR. HODGSON: In the 2013 Standards,
2 there's an opportunity to --

3 COMMISSIONER HOCHSCHILD: Sorry, Mike,
4 just wait a second. Is that muted? Okay, go
5 ahead please.

6 MR. HODGSON: So I think there's a start
7 in the 2013 Standards to give some credit to PV
8 and tradeoff against deficiency, but I think
9 that's a huge loss to opportunity because it's
10 capped and it's in specific cooling climate zones
11 where it could be variable across the state.

12 If I were in the solar industry's
13 position, I would want to sell as much solar as
14 possible and get as much credit to the builder;
15 if I'm in the builder's position, I don't want to
16 change what I'm doing. Once I know what I'm
17 doing and I know it does not have a problem, then
18 I want to build the same way.

19 And the only variable -- so if we could
20 come up with an exceptional method possibly
21 because the next time we're going to have a
22 variable PV credit is going to be --

23 COMMISSIONER HOCHSCHILD: Sorry. Could
24 you please mute all the phone lines? Okay, every
25 workshop I've had, we've always had some issue.

1 Thanks.

2 MR. HODGSON: We could just go talk
3 outside. So I think we have a lost opportunity,
4 but also an opportunity. And that is I'm really
5 not happy with the slight PV credit we get in the
6 2013 Standards, that was the compromise, and
7 we're moving forward. Does that mean we have to
8 wait three years now to get a variable PV credit?

9 We're building a very efficient shell
10 right now, we have an R21 wall, we have an R38
11 ceiling, and we have very low air and filtration.
12 If we could keep that as a minimum standard, and
13 then allow as we move forward, larger and larger
14 systems not in 17, but in 15 and 16, so we don't
15 have to wait, then I think that's a stimulus that
16 when we get the Code of the production home
17 builder and say, "Well, you can put in 2 KW and
18 get this credit, and you could put in 4 KW and
19 get the same credit, but it costs twice as much,
20 you can put in 6 KW, three times as much cost,
21 but no credit, I just can't sell that.

22 And I'm not a solar person, but I think
23 that's a negative sell. So if you're trying to
24 stimulate that in the market and we know we're
25 going to need it in 2017, and we know we're going

1 to meet it in Zero, is there a way to start to
2 stimulate that sooner than later? So that's my
3 suggestion is I don't think I need to do
4 research, what I think I need to do is get more
5 solar on the roof and get the production builder
6 more credit for that, but have minimum standards
7 that's acceptable to the Energy Commission for
8 efficiency.

9 And, you know, we have a good shell right
10 now and we're happy to talk about that shell
11 because we know what we're doing. But in '17,
12 we're going to change the wall and we're going to
13 change the attic, and that causes us a lot of
14 concern because there's problems when we do that.
15 I'm not saying it's impossible to do, but we're
16 not going to do it in three years.

17 COMMISSIONER HOCHSCHILD: That's a great
18 point. Thank you. Aaron.

19 MR. NITZKIN: I have two thoughts, the
20 first is tied to perceptions of cost-
21 effectiveness. I remember, I think it was last
22 year, that there was a workshop that the PUC put
23 on about Net Zero Energy Homes, and this big
24 fancy study and the outcome was solar is not
25 cost-effective. And I think that there's

1 probably a lot of builders out there that still
2 think that, and they don't understand that cost-
3 effectiveness is really not a black and white
4 situation, that you really need to look at how
5 it's being financed and cash flows versus simple
6 payback, and whatnot.

7 And I think that we really as an industry
8 need to do is get together and educate builders
9 on the value proposition because the value
10 proposition is there. It really is strong.

11 In my opinion, and this has been like
12 this for a number of years, if you're building a
13 new home in California today and you're not
14 putting solar on, it will probably cost you more
15 to not put solar on than to put solar on. And if
16 you don't understand that, you're doing a
17 disservice to your homebuyers. So I think
18 there's a huge education opportunity.

19 And the second point I want to throw out
20 there to think about is, while I commend the
21 solar companies that are making headway, I think
22 that we need to think of ways to objectively get
23 in front of builders to educate them on what has
24 happened over the past five to 10 years in this
25 market in non-biased ways, but to show data, show

1 traction, give case studies like what KB is
2 doing, and get them to start thinking about it
3 not in a sales way, but in more of an education
4 way.

5 And the only idea I have on that front,
6 they're not going to come here to a workshop on
7 NSHP, but they do go to their BIH events and
8 there are chapter events all over the state, and
9 without having to sponsor maybe the different BIH
10 efforts would be open to letting the Energy
11 Commission give 10-minute updates on the status
12 of solar in the market, where I think you'd have
13 representation from all the local builders, and
14 they will listen. And they're not going to feel
15 like they're being sold to because it's not
16 someone presenting a product, it's giving them an
17 update on the status of the marketplace.

18 COMMISSIONER HOCHSCHILD: That's a great
19 point. And I'm a big believer we need to go get
20 out of Sacramento more. I just took a couple
21 staff this last week, we drove five hours up to
22 Lassen to visit some power plants and geothermal,
23 and I think that's an important part of what we
24 need to be doing here, is getting around the
25 state. So I'm happy to do that.

1 In terms of other data, though, that we
2 could be presenting, one other question I had is,
3 has anyone evaluated how solar homes are selling?

4 I've heard anecdotal stories of a New
5 Solar Homes community built right next to a New
6 Homes community, and the solar homes selling
7 faster. But do we have any actual studies of
8 that, or any data? Is that an area you'd like to
9 see the Energy Commission evaluate? Go ahead.

10 MR. CUCULIC: Yeah. There have been a
11 number of studies out there, both that show --
12 the two arguments you make are sales *price* and
13 sales *pace*, right? So builders, they're trying
14 to constantly get higher sales prices, and then
15 increase that sales pace.

16 The National Renewable Energy did one
17 right around 2004, I think it was, with Shay
18 Homes down in San Diego, that's a big one, but
19 it's dated, it's almost a decade old now, that
20 shows the kind of statistics for that.

21 Unfortunately, it was during 2004 and
22 everything was selling quickly, so that's part of
23 the jaded kind of view on that community. So
24 that study could easily be updated.

25 And then the sales price one -- and I

1 think the Berkeley Lab has done a good job there,
2 the National Renewable Lab out in Berkeley did
3 one talking about premium of sales prices for
4 solar versus non-solar homes. And I think
5 Aaron's comments about the fact that if you're
6 not putting solar on your homes today, you're
7 doing a disservice to your client.

8 And I kind of commend -- although, how
9 should I say this -- in essence they've kind of
10 taken part of the pie, but what Lennar has done
11 is, with their zero down program, or prepaid
12 lease program, or power purchase program,
13 whatever they're calling it, what they've done is
14 they can now offer every single one of their
15 homebuyers a solar program, and there's debates
16 about its benefit, but they are including solar
17 into every single one of the homes without
18 raising the sales price of their home through
19 their power purchase agreement, or zero down
20 program.

21 And that's why I brought up the lease
22 programs today is, homebuyers today, whether it
23 be through SunPower's dealership network, through
24 SolarCity, through Sunrun, through all these
25 different solar companies, can get solar for zero

1 out of pocket cost, and there's so much savings
2 when you're designing it upfront, and that's
3 where I kind of go back to, these zero as-is
4 product evolution happens, you know, when you
5 look at the reason people don't go solar on the
6 retrofit side, it isn't about cost anymore, it's
7 really about dealing with the contractor, being
8 home, you know, all these other reasons or
9 objections.

10 When you're building a house, you've
11 hired a company to take care of it for you, and
12 that's where I'm like the least programs get
13 accepted, there's no reason to do it because I'm
14 already hiring somebody to install my cabinets
15 and my countertops.

16 If it doesn't cost me or the builder
17 anything, then you can do the zero down programs
18 that Lennar has done. And I think they're going
19 to have like 80 to 100 communities through their
20 zero down program rolled out this year.

21 MR. ONORATO: I'm Justin Onorato, I
22 actually work at Lennar, and I've heard our name
23 thrown around a few times, so I just want to be
24 able to chime in a little bit here.

25 And what Walter is referring to is a

1 guaranteed discount on our Solar 2020 plan, so we
2 offer our homebuyers solar with no upfront costs
3 to the homebuyer, it doesn't increase the price
4 of the home, and they get solar for 20 years at a
5 20 percent discount benchmarked to local utility
6 rates. And so --

7 COMMISSIONER HOCHSCHILD: And what
8 portion are Lennar Homes built in California done
9 with solar today?

10 MR. ONORATO: I'm sorry, what was the
11 question?

12 COMMISSIONER HOCHSCHILD: What portion of
13 the homes you're building in California are done
14 with solar?

15 MR. ONORATO: So, as Walter hit on a lot
16 of our communities, are doing solar standards
17 with SunStreet and we can't get into numbers, but
18 I think as far as the number of homes, I think
19 the range --

20 COMMISSIONER HOCHSCHILD: No, just a
21 portion. Is it 50 percent?

22 MR. ONORATO: No, it is -- I can give you
23 the 2013 number -

24 MR. CUCULIC: Well, any community that
25 has your zero whatever --

1 MR. ONORATO: It's Solar 2020 Plan?

2 MR. CUCULIC: -- 2020 Plan, every
3 homebuyer gets it and anything that -

4 MR. ONORATO: That's right. So our
5 initiative is basically in all these communities
6 it will be a standard feature going forward in
7 those communities.

8 And I think, I mean, we looked up some
9 numbers from 2013, and we were in the 30 percent
10 range, that number is trending higher given the
11 SunStreet Initiative.

12 COMMISSIONER HOCHSCHILD: Great. Go
13 ahead.

14 MS. KOROSK: Brandon De Young on the
15 line wants to speak. Brandon, your line is open.
16 All right, Brandon, we had a glitch. Go ahead
17 and do it again.

18 MR. DE YOUNG: Hello, can you hear me?

19 COMMISSIONER HOCHSCHILD: Yes.

20 MR. DE YOUNG: Okay. So this is Brandon
21 De Young, De Young Properties in Fresno. We work
22 with Walter in SolarCity and I would kind of
23 piggyback on what Walter is saying.

24 You know, I haven't really heard the word
25 "appraisal" kind of talked about yet in this

1 discussion and I feel it's pretty paramount
2 because to offer solar at the purchase, you've
3 got to make sure that the appraisers are going to
4 be able to give enough value to it for it to
5 suitably work, you know, in the price of the
6 home, and therefore the bank will be able to
7 invest, you know, lend on the true value of the
8 cost of the home.

9 And we haven't in our area in the Central
10 Valley haven't been seeing that really occurring,
11 you know, if someone is going to buy a \$30,000
12 solar system we're seeing the appraiser only
13 giving like \$5,000 worth of value. And therefore
14 they have to come out of pocket, you know, if
15 we're talking about it being an upgrade, \$25,000
16 just to pay the difference.

17 So that's why ultimately we decided to go
18 with SolarCity's zero down and lease program, we
19 initially asked to credit with them a prepaid
20 lease, but the appraisal value of solar has
21 become a big issue, at least for us, as far as
22 trying to include solar in the home, so that's
23 ultimately why we've gone with the zero down
24 product, as it didn't create any issues with the
25 appraisal of the home.

1 So I definitely would second what Walter
2 was saying about the lease products that are out
3 there. There's obviously some hesitancy with the
4 consumers, I think, in there with the leases; in
5 fact, we were as builders, as well, when we first
6 heard about them, we thought they were a little
7 maybe sketchy at first, but once you kind of got
8 into the details, they seemed to be pretty
9 legitimate, and so I think it's an education kind
10 of thing.

11 But anyway, I just wanted to put in my
12 two cents on that.

13 COMMISSIONER HOCHSCHILD: I thought that
14 LBNL had done a study on that some time ago and
15 found that for every \$1,000 of annual energy
16 savings, it would increase the appraisal value by
17 20,000. This is maybe five years ago. Is that
18 --?

19 MR. BROST: That was the Appraisal
20 Institute.

21 COMMISSIONER HOCHSCHILD: I'm sorry, that
22 was who?

23 MR. BROST: The Appraisal Institute.

24 COMMISSIONER HOCHSCHILD: The Appraisal
25 Institute, okay.

1 MR. BROST: And it's fairly aged.

2 MR. DE YOUNG: They even have like some
3 tools for appraisers to help them value solar,
4 but that doesn't necessarily mean they're going
5 to do it here in our area.

6 COMMISSIONER HOCHSCHILD: Okay, but this
7 is a great point, let's pause on this for a
8 second. I mean, what would be helpful for the
9 Energy Commission to do on that question?

10 I mean, would some sort of white paper or
11 something on the net present value of the system
12 for the homeowner over time -- I'm just thinking
13 what exactly -- or is there something, as you
14 mentioned, could do to help shed some light on
15 that? Or is that something LBNL or another
16 entity could perform?

17 MR. BROST: Sandia Labs and the Appraisal
18 Institute recently partnered and came out with a
19 new appraisal tool, and it's a lot better than
20 what we have had, which is nothing, it's actually
21 pretty good, it still has some improvement
22 opportunities, but generally I think getting
23 behind that and helping to get that in front of
24 the appraisal industry in California would go a
25 long way, particularly where these systems are

1 financed by the homeowner and the value needs to
2 be recognized within the mortgage.

3 COMMISSIONER HOCHSCHILD: Great. Pat,
4 are you familiar with that? The Sandia tool?

5 MR. SAXTON: Yes, I am.

6 MR. NESBITT: Yeah, George Nesbitt.
7 Yeah, there's a green addendum, RESNET I think
8 has also been working with the Appraisal
9 Institute. We have the HERS Rating System and
10 part of one of the reasons for the HERS Rating
11 System is the whole energy efficient mortgage
12 idea, the idea of putting the value of the
13 improvements into the mortgage and financing it,
14 and justifying the cost from the energy savings.

15 So to the extent that we can promote and
16 get appraisers to be aware of the addendum and to
17 use it to promote the HERS Rating system, to
18 promote energy efficient mortgages, things like
19 that, it could go a long way.

20 COMMISSIONER HOCHSCHILD: Okay, great.
21 Well, this has been really fruitful so far. One
22 other question I had is just with respect to
23 construction today, how much savings do you think
24 the difference is between doing a retrofit solar
25 project today versus building it in a production

1 home scenario?

2 I mean, I imagine there's some less comp
3 shingle or other material or building
4 efficiencies you get. How big is that delta? Or
5 is there much of a delta, if you could -- yeah.

6 MR. RAYMER: The economy of scale favors
7 production housing, most definitely, in terms of
8 labor application. When you're doing the
9 logistics for this, as was mentioned earlier,
10 you've got the one entity that is sort of taking
11 care of things, and with a custom home or
12 retrofit you effectively have to go out to the
13 site, you have to arrange things, everything is
14 done on a one-house scale; and when you're doing
15 a production housing market, you're probably
16 looking at anywhere from 12-15 homes at a given
17 time.

18 From a logistical standpoint, that's a
19 lot easier to schedule, and that's very
20 important. So in essence you could effectively
21 arrive at a site with a rather mass quantity of
22 product and effectively have labor ready to go
23 who does the installation, as opposed to maybe
24 having the guy show up a couple hours early,
25 sitting around chatting while they're waiting for

1 the truck that got caught on 650, you know, it's
2 -- you have any number of problems that can
3 happen with a single home as opposed to
4 production housing. That's not to say production
5 housing is easy, but...

6 MR. BROST: I'd just say the other major
7 piece of it is the customer acquisition cost. In
8 retrofit, as you probably know, it's quite high
9 to acquire a customer.

10 In new homes when you can sell to
11 homebuyers in communities at a time, you're not
12 having a market, you're not having to find that
13 customer, the customer has found you.

14 COMMISSIONER HOCHSCHILD: Right, so I
15 think we all agree on the principle, but nobody
16 has a number -- would you guess it's 15 percent?

17 MR. BROST: I think I've said before
18 between 10 and 20 percent.

19 COMMISSIONER HOCHSCHILD: Yeah, seven to
20 10 to 20 -- is that...?

21 MR. CUCULIC: Yeah, that's about right.
22 And it really deals with, I mean, just a side
23 audit alone, right, on an existing home, we
24 typically have to go out there and do a visual
25 inspection, that's \$300 to \$500, depending on the

1 location.

2 The rest of the cost in terms of savings
3 typically are in the pre-wire cost, and then the
4 upfront engineering. With the production home
5 environment you can engineer it once. If the
6 vent pipes are out of the way, you're not working
7 around obstructions and things of that sort, so
8 you get a much quicker installation time. But I
9 agree with Matt, it's usually about 10 to 20
10 percent savings.

11 COMMISSIONER HOCHSCHILD: Okay, that's
12 really helpful.

13 MR. RAYMER: By the way, on appraisers,
14 about 10 days ago I had a meeting with
15 Assemblymember Ting's staff, who is going to pull
16 back on one of their bills. They may be looking
17 at dealing with this issue from both energy
18 efficiency and from renewable energy. He is an
19 appraiser. And so, interesting to state, my
20 boss, former Senator Cogdill, was an appraiser
21 down in the San Joaquin area. And so there is a
22 lot of knowledge in this, also Nancy Skinner,
23 this is an issue that's near and dear to her
24 heart.

25 So there are a lot of individuals that

1 would like to see something happen. The question
2 here is we need to get a little background
3 information. And the fact is, down in Davis
4 you've got the example of two very similar homes,
5 one with about four kilowatts of solar on it, and
6 its neighbor that was built at the same time, so
7 two homes that are very close, but you've got a 4
8 kilowatt system on the roof, they're both valued
9 the same, and that is just wrong.

10 COMMISSIONER HOCHSCHILD: Right, right.
11 Great. Any other comments? Le-Quyen or Suzanne,
12 any questions you'd like to see addressed? All
13 right. Well, thanks everyone. This was really
14 fruitful, I really appreciate everybody coming in
15 and look forward to working with you. Any other
16 closing comments, Suzanne or Le-Quyen? Okay,
17 thank you.

18 (Whereupon, at 10:34 a.m., the workshop was
19 adjourned.)

20 --oOo--

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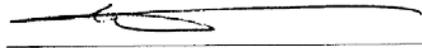
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