

BEFORE THE
CALIFORNIA CLEAN ENERGY JOBS ACT
CITIZENS OVERSIGHT BOARD

CALIFORNIA ENERGY COMMISSION
CHARLES IMBRECHT HEARING ROOM - FIRST FLOOR
1516 NINTH STREET
SACRAMENTO, CALIFORNIA

MONDAY, DECEMBER 3, 2018

1:00 P.M.

Reported by:
Gigi Lastra

APPEARANCES

BOARD MEMBERS PRESENT (*Via telephone and/or WebEx)

Kate Gordon, Chair, California Citizens Oversight Board

*Mark Gold, Vice Chair, California Citizens Oversight Board

Adrienne Alvord, California Citizens Oversight Board

Barbara Lloyd, California Citizens Oversight Board

David Dias, California Citizens Oversight Board

*Randall Martinez, California Citizens Oversight Board

*Heather Rosenberg, California Citizens Oversight Board

EX OFFICIO MEMBERS PRESENT

Michael Murza, Law & Policy Advisor to Chair Weisenmiller

Bryan Early, Special Advisor to Commissioner McAllister

COB STAFF PRESENT

James Bartridge

CEC STAFF PRESENT

Michael Murza, Law & Policy Advisor to Chair Weisenmiller

Bryan Early, Special Advisor to Commissioner McAllister

Tomas Ortiz, California Energy Commission

ALSO PRESENT (*Via telephone and/or WebEx)

Anna Ferrera, Executive Director, School
Energy Coalition

Christina Hernandez, University Of California, Los Angeles

APPEARANCES (Cont.)

ALSO PRESENT (Cont.) (*Via telephone and/or WebEx)

Nikolai Kaestner, Director of Sustainability, San Francisco Unified School District

Bill McGuire, Deputy Superintendent, Twin Rivers Unified School District

*Darin Vey, Energy Utilities Program Supervisor, San Diego Unified School District

Hoang Nguyen, California Community College Chancellor's Office

*Joe Fullerton, San Mateo County Community College District

PUBLIC COMMENT: (*Via telephone and/or WebEx)

I N D E X

THE BOARD WILL CONSIDER AND MAY TAKE ACTION ON THE FOLLOWING ITEMS:

1.	INTRODUCTION AND ROLL CALL OF BOARD MEMBERS TO DETERMINE QUORUM. (Chair Gordon)	5
2.	APPROVAL OF MINUTES FROM JULY 19, 2018 CITIZENS OVERSIGHT BOARD MEETING. (Chair Gordon)	11
3.	UPDATE ON SCHOOL BUS REPLACEMENT PROGRAM. (Tomas Ortiz)	13
4.	UPDATE BY THE SCHOOL ENERGY COALITION ON THE STATE OF VARIOUS PROPOSITION 39-FUNDED PROJECTS AND ADVOCACY EFFORTS GOING FORWARD: • Anna Ferrera, Executive Director, School Energy Coalition • Nikolai Kaestner, Director of Sustainability, San Francisco Unified School District • Bill McGuire, Deputy Superintendent, Twin Rivers Unified School District • Darin Vey, Energy Utilities Program Supervisor, San Diego Unified School District	33
5.	PRESENTATION ON YEAR 5 OF PROPOSITION 39 AND BOARD OF GOVERNORS ENERGY AND SUSTAINABILITY AWARDS (Hoang Nguyen and Joe Fullerton)	84
6.	PUBLIC COMMENT	--
Adjourn		107
Reporter's Certification		108
Transcriber's Certification		109

P R O C E E D I N G S

DECEMBER 3, 2018

1:05 P.M.

MR. BARTRIDGE: We're going to go ahead and get started, so good afternoon everyone and welcome to the final meeting of 2018 of the Citizens Oversight Board. I'm Jim Bartridge, Board staff.

And let me start with a few housekeeping items. The bathrooms are out the door to your left and we used to have a second floor snack bar. We don't anymore. There are some vending machines up there. If there's an emergency and we end up evacuating the building please follow us across the street to Roosevelt Park. And when that emergency clears, we'll come back into the room. And so that's that. Let me turn it over to Chair Gordon.

CHAIR GORDON: Thank you so much and welcome to everyone in the room. It's nice to have people here.

We realized or I realized that this meeting is, I think the first one since the official end of the original Clean Energy Jobs Act, and so that's very exciting. So we wanted to just take a second to talk a little bit about some of those five-year milestones that have been reached with this program as we then go forward into the next phase of the money being spent out after the end of first official five years. So we'll be hearing today about the

1 School Bus Program, which is a big piece of that; and then
2 some of the ongoing work happening at schools, of course,
3 that are still doing work from their grants from the
4 original program and then thinking a little bit toward the
5 future.

6 So just for those who have not been as deeply
7 steeped in this as those of us up here, you will remember
8 that in November of 2012 California voters approved Prop
9 39, the California Clean Energy Jobs Act, to create jobs,
10 save energy, reduce energy costs and greenhouse gas
11 emissions and provide job training and workforce
12 development. Those were all in the proposition as goals of
13 the program.

14 The revenue for this program came from a change
15 to the corporate tax code, which essentially switched us
16 from a dual factor to a single factor sales tax state. And
17 those revenues, the proposition allocated half of the
18 revenues from that change to the Clean Energy Jobs Creation
19 Fund for five years. And that started July 1st, 2013 and
20 just ended this past June.

21 So it was a long process from 2012 until now.
22 And it's gone through a lot of different guidance, a lot of
23 implementation. At the end of the day I think we can all
24 be really proud. Everyone, in fact, I know in this room
25 and up here and everyone who is out there who's worked on

1 the program, should be really proud of what this program
2 has accomplished.

3 We've seen over that five years, over \$1.7
4 billion to local education agencies for energy efficiency
5 and clean energy projects; over 220 million to community
6 colleges, for those types of projects and for work force
7 development and training classes; 26 million for energy
8 surveys and conservation activities and many of those
9 surveys have led to work being done beyond the scope of
10 this program, being done by leveraging other grants, by
11 looking at other state funds and by getting private
12 investment. And about \$12 million specifically for
13 preparing underserved communities including formerly
14 incarcerated individuals, folks from underserved
15 communities and veterans for training for clean energy
16 jobs. That's through the pre-apprenticeship programs at
17 the Workforce Development Board, as well as the California
18 Conservation Corps.

19 All of that has happened, as you guys know
20 through a combination of things: through our grants, loans
21 and technical assistance, which have leveraged an enormous
22 amount of more money, and job training work force
23 development programs.

24 And this -- you know as somebody who's worked for
25 a long time at that intersection of economic development

1 and energy this is one of the real success stories out
2 there of a program that actually did an intentional and a
3 good job of incorporating workforce development into a
4 program that also created jobs. And we have some real
5 outcomes that we can look at from these programs which I'm
6 really proud of.

7 So the funding ended this past June at about --
8 there were about \$117 million left over at the end of that
9 period. That means that they were not allocated to schools
10 that had applied in the application period.

11 And the Senate had passed SB 110, essentially
12 directing those funds to a combination of a School Bus
13 Replacement Program and the ECCA-Ed Competitive Loan
14 Program. And so all of those funds have been allocated and
15 we're going to hear today about the School Bus Program.
16 We've been getting great updates on that program and will
17 hear more about it today and then we'll hear more about how
18 ECCA-Ed is working -- what's happening with ECCA-Ed next
19 year.

20 We here, of course, were created to both kind of
21 pay attention to all of these different agencies working
22 together to implement this program. We do an annual report
23 to the Legislature that takes all of the underlying reports
24 from the agencies, synthesizes them, summarizes them and
25 provide our own recommendations to the Legislature. We

1 also of course perform the audit. We hire out to perform
2 the audit of all these programs through the State
3 Controller's Office.

4 And I think we have been in a unique position to
5 be able to sort of watch how this has played out and see
6 what works and what doesn't work over the past five years.

7 Currently, this Board has -- it's a nine-member
8 Board. It's supposed to be a nine-member Board. We have
9 seven members right now. Chelina Odbert's term recently
10 expired, I'm sorry to say. We sent her a note thanking
11 her. She was a really great voice on this Board for five
12 years.

13 I want to congratulate Randall Martinez, who was
14 reappointed by the Attorney General's office in early
15 November and is with us again. Randall, you just can't
16 escape us. I'm sorry about that.

17 BOARD MEMBER MARTINEZ: Thank you, Kate.

18 CHAIR GORDON: So we're glad you're here. We're
19 hoping to have two additional AG appointments in the near
20 future. Those are the two missing appointments. And I
21 just want to say thanks to Chair Weisenmiller's Advisor,
22 Michael Murza, who is here with us as well as Commissioner
23 Andrew McAllister's Advisor Bryan Early for being with us
24 today in their ex officio capacities. So thank you both
25 for being here.

1 I wanted to see if anyone else on the Board had
2 anything they wanted to share before we jump into roll
3 calls and agendas, any wise thoughts from anyone on the
4 Board? It's good to be here. I really appreciate
5 everyone's service and I just hope everyone shares with me
6 the pride in just what we've managed to accomplish through
7 this program over the past five years and what we can still
8 do.

9 So with that, I will turn it back to Jim for roll
10 call.

11 MR. BARTRIDGE: Very Good.

12 Chair Gordon?

13 CHAIR GORDON: I'm here.

14 MR. BARTRIDGE: David Dias?

15 BOARD MEMBER DIAS: Here.

16 MR. BARTRIDGE: Barbara Lloyd?

17 BOARD MEMBER LLOYD: Here.

18 MR. BARTRIDGE: Adrienne Alvord?

19 BOARD MEMBER ALVORD: Here.

20 MR. BARTRIDGE: Vice Chair Gold, have you joined
21 us?

22 BOARD MEMBER ROSENBERG: He's not here yet.

23 MR. BARTRIDGE: Okay.

24 Randall Martinez?

25 BOARD MEMBER MARTINEZ: I'm here.

1 MR. BARTRIDGE: And Heather Rosenberg?

2 BOARD MEMBER ROSENBERG: Here.

3 MR. BARTRIDGE: So Chair, we do have a quorum --

4 CHAIR GORDON: Perfect. Let's go.

5 MR. BARTRIDGE: -- at this point. So we only
6 have one voting item today, which is the minutes from July
7 19th. Unfortunately I was out on that day due to a racing
8 accident with my son and go carts, but I'm happy to be back
9 with you today. And this time Jack's out.

10 CHAIR GORDON: Oh yeah, I'm so sorry. I meant to
11 say this, it was not on my first page of notes but Jack,
12 who has been with us for this whole period of time, is out
13 because he just had a baby. So Jack's new son, Emmett John
14 Bastida was just born before Thanksgiving, on November
15 20th. He is six pounds, one ounce. He is very healthy.
16 Everyone is doing well. We're very excited to have a new
17 member of our Advisory Board team.

18 MR. BARTRIDGE: There you go. Perfect. Okay
19 well I have the minutes up. I trust you've all looked at
20 them.

21 BOARD MEMBER DIAS: I make a motion to accept the
22 minutes.

23 MR. BARTRIDGE: Very good.

24 BOARD MEMBER ALVORD: I second.

25 MR. BARTRIDGE: And can we have a vote?

1 CHAIR GORDON: Let's just --
2 MR. BARTRIDGE: Do a roll call?
3 CHAIR GORDON: Yeah, let's do a roll call. Yeah,
4 just (indiscernible) on the phone.
5 MR. BARTRIDGE: Chair Gordon?
6 CHAIR GORDON: Approve, yes.
7 MR. BARTRIDGE: David?
8 BOARD MEMBER DIAS: Yes.
9 MR. BARTRIDGE: Barbara?
10 BOARD MEMBER LLOYD: Yes.
11 MR. BARTRIDGE: Randall?
12 BOARD MEMBER MARTINEZ: Yes.
13 MR. BARTRIDGE: And Heather?
14 BOARD MEMBER ROSENBERG: Yes.
15 MR. BARTRIDGE: Okay. The minutes are approved.
16 CHAIR GORDON: Can we just periodically check
17 whether -- or actually Christina, (phonetic) can you just
18 tell us as soon as Mark shows up, so that we know when we
19 have him with us?
20 CHRISTINA: Sure. Yes.
21 CHAIR GORDON: Thank you. Just feel free to
22 interrupt whatever's happening. Thank you.
23 MR. BARTRIDGE: Okay so we have a full agenda --
24 UNIDENTIFIED SPEAKER: (Indiscernible.)
25 MR. BARTRIDGE: I missed that, sorry?

1 CHAIR GORDON: Was that you Mark?

2 UNIDENTIFIED SPEAKER: No. It was an editorial
3 about (indiscernible).

4 CHAIR GORDON: Thank you for that.

5 MR. BARTRIDGE: Okay so we do have a full agenda
6 today. We're going to just keep moving right through.
7 We're joined by members of the School Energy Coalition. We
8 have an update on the School Bus Replacement Program. And
9 then we have an update from the Community College
10 Chancellor's Office on some of their Prop 39 work and the
11 sustainability awards they've given. So let me just roll
12 right into item three, cost effectiveness.

13 You can come on up. And this is Tomas Ortiz from
14 the School Bus Replacement Program.

15 MR. ORTIZ: Hello.

16 CHAIR GORDON: Thanks for being here.

17 MR. ORTIZ: Yeah, no problem. How do I get full
18 screen on this? Can I get a full screen on this or just
19 keep it like this?

20 CHAIR GORDON: And Tomas, can we ask you
21 questions during your presentation or do you want us to
22 wait.

23 MR. ORTIZ: You can ask questions.

24 CHAIR GORDON: Great, so people should feel free
25 on the Board to jump in if you have questions.

1 MR. ORTIZ: All right, so my name is Tomas Ortiz.
2 I'm the Air Resources Engineer for the School Bus
3 Replacement Program. I want to thank you for having us
4 here today and especially thank you for letting me go
5 first. It's a little bit easier for me that way.

6 So I'm here to give you an update on the School
7 Bus Program. We've had some pretty exciting developments
8 recently. I also want to kind go over our cost
9 effectiveness model with you as well.

10 Okay. So Chair Gordon introduced Senate Bill
11 110 already, so that's where we get our funding allocation.
12 So we get \$75 million to replace diesel school buses with
13 electric school buses.

14 I highlighted some of the important parts of the
15 legislation for you. So these buses must be scrapped after
16 they're replaced. We don't want the diesel buses to stay
17 on the road. And these buses must be proven to be cost
18 effective over time. And to be cost effective, it doesn't
19 just mean that these are energy benefits. This can be
20 things such as health and safety.

21 So when we were constructing our program we
22 split it into three components. So the first component is
23 the actual replacement of the bus. So in order to do this
24 we kind of did a two-phase solicitation, so the first one
25 is actually done with. We've received all the

1 applications. They're scored. We published these within
2 the last two weeks.

3 So we had school districts, county offices of
4 education, and joint power authorities apply. They gave us
5 information about their bus fleet. And we were able to
6 kind of get some individual characteristics of these
7 districts and the regions that they're serving, so that we
8 could get the disadvantaged community score as well as
9 their participation in the free and reduced price meal
10 program. And we were able to score based on that.

11 So Phase 2 of this is a solicitation for school
12 bus dealers and manufacturers. We're trying to do bulk
13 pricing with them, so this is a procurement process to kind
14 of lock down a price. It's not out yet. I believe it's
15 routing, so I can't really give too much details on that.
16 So the second phase is really important as well. So we
17 have another program here at the Energy Commission called
18 the Alternative and Renewable Fuel and Vehicle Technologies
19 Program, or ARFVTP. It's a mouthful, so I'm not really
20 sure, which one you're more comfortable with. So we're
21 setting aside up to \$60,000 per electric bus awarded. So
22 this can go for all infrastructure related to fueling the
23 bus. This is charging, trenching. If they have money left
24 over, they can do solar panels or battery storage.
25 Anything that helps them save costs and charge the buses.

1 And then the final one is going to be we want to
2 provide workforce training and development for the --

3 CHRISTINA: Mark is here now, sorry to interrupt.

4 MR. ORTIZ: That's okay.

5 CHAIR GORDON: Thank you. Welcome, Mark.

6 MR. ORTIZ: Okay. So yeah, the third phase is to
7 provide workforce training and development for these school
8 districts. A lot of these buses are going to be coming
9 with warranties for it's usually up to five to eight years
10 depending on the manufacturer. But we want to make sure
11 that the districts that receive these buses are going to
12 take care of these buses for kind of the smaller things in
13 the interim and then also be able to maintain these buses
14 long term.

15 So I also want to point out the bottom left
16 image here is actually a CNG fueling station. We did have
17 some money through ARFVTP set aside for some CNG buses. It
18 was I believe \$3.1 million for infrastructure, is what we
19 ended up with and I want to say \$2.7 for school buses
20 themselves. So we should be using all that funding as
21 well.

22 Okay. So let's go over some of the key
23 milestones. Anything that's bolded has already passed, so
24 like I said GFO-17-607. That's how we accumulated the list
25 of the buses that were requested to be replaced, so that

1 opened in May of this year and it closed September 20th.
2 I'm going to be giving you some kind of high-level
3 statistics of the results that we saw through this
4 solicitation process. But the results were posted in the
5 last two weeks. You can find this on our website.

6 So some of the more notable upcoming targets,
7 we're expecting soon to come out with the second
8 solicitation targeting the dealers and manufacturers that
9 should be coming out any day now. And we're hoping early
10 next year to get Commission approval to move forward with
11 the NOPA for the CNG. And then shortly after that we'll be
12 releasing our results for both the manufacturer
13 solicitation as well as a final NOPA for the electric list.
14 And then we're going to start installing infrastructure.
15 We know that we need probably a least seven months lead
16 time on installing infrastructure to make sure that the
17 school districts can actually accept these buses. And then
18 we're hoping to get the first ones to start rolling out
19 about this time next year.

20 CHAIR GORDON: Tomas, can I just ask you really
21 quickly, when you did the solicitation for the rank list
22 did you get -- I mean, it sounds like it was sort of a
23 voluntary. Did you get good representation from across the
24 state? Do you have some big holes in that, or --

25 MR. ORTIZ: There were some holes. I have a

1 couple of slides that kind of go over this.

2 CHAIR GORDON: Thanks.

3 MR. ORTIZ: But it was really good
4 representation. We were really happy with what we got.

5 CHAIR GORDON: Great

6 MR. ORTIZ: So actually I think the next slide
7 pretty much goes over what you were just asking. Okay.
8 So there were -- I don't know the exact number off the top
9 of my head. There was a little over 1,000 possible
10 applicants, this is school districts, county offices of
11 education and transportation agencies, JPs. Not all of
12 them have school buses. We're not exactly sure who has
13 them and who doesn't. But we got about 200 applicants just
14 for the electric vehicle portion of it. So you can see of
15 the 200 about a quarter of them were in Northern
16 California. Half of them were in the Central Valley.
17 Southern California was 35 of them and we had just 12 from
18 L.A. County.

19 So this added up to about 1,500 electric buses
20 requested for replacement throughout the state. And of
21 those about 63 percent of them are 20 years or older, so
22 these are really old buses as well.

23 BOARD MEMBER ALVORD: Excuse me. Do you have a
24 sense of why the L.A. County participation was so much
25 lower? Was it (indiscernible)?

1 MR. ORTIZ: I'm not sure why the participation in
2 L.A. was so low. We were expecting a little bit more, but
3 it could be that they just don't have that many buses
4 outside of like L.A. Unified.

5 CHAIR GORDON: So it may be that they -- I mean
6 we experienced this with some of the earlier funding for
7 Prop 39 too. It may be they have passed a number of very
8 expensive bonds in the last few years and they've done huge
9 amounts of replacements of things. So it could be also
10 that they've done a big program down there, but we should
11 find out. It's a good question.

12 MR. ORTIZ: Yeah, and also --

13 VICE CHAIR GOLD: Yeah. Let's double check on
14 that, please.

15 MR. ORTIZ: Yeah, and South Coast AQMD also has a
16 -- or had a replacement program going on recently, so it
17 could be that some of the districts who wanted an electric
18 bus already got some awarded.

19 So kind of some more high level statistics, we
20 just kind of looked at the top 75 buses in each region.
21 And so what we saw was that most of these buses are going
22 to be 20 years or older, who are the higher ranking ones.
23 And then also the bus type characteristics. So about two
24 thirds of them are type D, which are the big flat-nosed
25 ones. I have a picture on the next slide that will show

1 this, actually not on the next slide, on a few slides. And
2 then Type A and Type C are requested at about the same
3 rate, so they're both about one-sixth.

4 So now I'm going to get into the cost effective
5 methodology. It is kind of appropriate that I kind of left
6 off talking about the requested types. So two-thirds of
7 them were Type D. This is the most expensive type of bus
8 as well, we assume based on purchase orders that we've seen
9 in the past.

10 So just kind of a brief overview of the
11 methodology, it's just a savings to investment ratio. It's
12 very simple. It's total project benefits over time divided
13 by total project cost. So anything one or greater is going
14 to be cost effective. Anything less than one is not cost
15 effective. And spoiler alert, the ratio that we came up
16 with was 1.15, so we determined that this is actually cost
17 effective endeavor.

18 And we also want to say that this was based on
19 some assumptions. So once we actually have these buses on
20 the road and we start collecting data, we can kind of firm
21 up our numbers and see across the board how correct we
22 were. And also this methodology, we went for the most
23 conservative numbers. We didn't want to assume something
24 that was way off base and then we end up having all these
25 buses funded that are not cost effective. So every chance

1 we got, we went with the most conservative estimate.

2 So it's a little bit hard to kind of compare
3 apples to oranges, so we didn't want to take something
4 that's a present cost like purchasing a bus and installing
5 the infrastructure and compare it to like annual values.
6 So I used a couple of equations. These are just economic
7 equations that allow you to take annual values or future
8 values and turn them into a present value cost. That's
9 what these two equations are representing.

10 And I'm going to go over the variables, each one
11 of them. But there is a report published on our website.
12 If you go to our webpage and look up cost effectiveness in
13 the School Bus Program, there'll be a ten-page .pdf.
14 Appendix A goes over the equations that we used, and then
15 Appendix B actually shows you how we used them, so that
16 that might be a -- for anyone who's curious about anything
17 that I may not have time to address today, that's a good
18 way to look it up.

19 So some of the assumptions for the cost
20 effectiveness, so like I said earlier we analyzed the most
21 expensive type of bus, which is a Type D. We used a life
22 span of 20 years. As I showed earlier, 63 percent of the
23 buses that were requested for replacement are 20 years or
24 older, so I feel like this was pretty fair. 2 percent
25 discount rate, so kind of think of this as inflation or

1 interest. And then I also assumed one battery replacement
2 at year 12 of operation. We've been told around year ten
3 is when it's typically going to be replaced. But school
4 districts can be a little slow on that just because it can
5 be kind of expensive to replace these. So they're going to
6 really do what they can to drag it out as long as possible.
7 And then the fuel efficiencies I pulled from the AFLEET
8 tool, so this is actually developed by the National Oregon
9 Laboratory. And then the vehicle miles traveled annually,
10 I pulled from a South Coast AQMD report.

11 So this is the Type D. I also have one on the
12 first slide. So there are more than one vendor out there
13 who are capable of producing this bus.

14 So these are some costs. We assumed about
15 \$415,000 for the cost of a Type D bus. And we're including
16 the cost of infrastructure in this as well, so it was
17 \$60,000 for that. So the total project costs are \$475,000.
18 These are present value costs. There's no need to assign
19 any equations to this.

20 I used five benefits for this, so these are the
21 defined benefits. So the first is going to be fuel
22 savings. We know that electric vehicles are designed to
23 save school districts money through fuel. They're more
24 efficient, as I showed in the last slide. And so it really
25 comes down to the cost of fueling it. Emissions

1 reductions, I think that's pretty straightforward.
2 Maintenance savings, there are far fewer moving parts. In
3 a diesel bus, you can have hundreds even thousands of
4 moving parts. In an electric vehicle, it's less than 20 I
5 think. Health benefits, people aren't breathing all the
6 particulate matter emissions. And economic benefits, so
7 I'll kind of go over each one of these in future slides.

8 So here are some other benefits that we
9 identified, but it was a little harder to quantify these
10 ones. So safety, these are new buses. We know that
11 they're going to be safer for students. And school buses
12 in general are actually much safer for students to travel
13 to school than private transportation is. Grid benefits,
14 we know that vehicle to grid is coming. We recognize that.
15 But we're not sure what the participation is going to be on
16 this, so we didn't want to include it in the model if it's
17 something that's not going to be heavily adopted.
18 Scrappage, I mentioned that this is a requirement of Senate
19 Bill 110. And some school districts have told us they can
20 receive up to \$20,000 just for the scrap metal of the old
21 bus. And job creation, this isn't part -- we're not the
22 ones who are calculating this, so we didn't want to include
23 this and then it be way off base.

24 So fuel savings, so the cost of diesel per gallon
25 is a little bit more expensive than the cost of

1 electricity. And I used U.S. Energy Information
2 Administration for current fuel costs in the State of
3 California for both types, as well as the forecasted kind
4 of rise of price annually.

5 So you'll see on the next slide exactly how I
6 kind of input these into the present worth equations. And
7 so what we ended up finding out is that over a 20-year life
8 span, the school districts end up saving about \$78,000,
9 just on fuel alone.

10 BOARD MEMBER LLOYD: I have a quick question for
11 you, is that all right?

12 CHAIR GORDON: Yeah, go ahead.

13 BOARD MEMBER LLOYD: I was a little confused as
14 to why the discount rate would be 2 percent and these
15 inflation rates are almost 4 percent, well 3.1 and nearly
16 four. What was your rational for that 2 percent discount
17 rate? Is it the cost of funds rate, as opposed to -- I
18 mean where'd you come up with that one, the assumption?

19 MR. ORTIZ: Yeah so the 2 percent. I used that.
20 That's kind of like the inflation of money over time, so if
21 you're looking at -- so let me kind of go back a slide.

22 BOARD MEMBER LLOYD: Sure, but what was the basis
23 upon -- I understand the concept, but what's the basis?

24 MR. ORTIZ: Of the 2 percent?

25 BOARD MEMBER LLOYD: What was your benchmark.

1 MR. ORTIZ: It's fairly standard, so that's just
2 one that I think --

3 BOARD MEMBER LLOYD: No. It's not fairly
4 standard. It depends on what's going on in the markets
5 over time, so where did you get the 2 percent? It's just
6 not a standard number. You have to make a decision about
7 it, so I'm just wondering is it because that's where
8 treasury rates are?

9 MR. ORTIZ: This was provided to me by one of our
10 economists. I can ask him for what his rationale was, but
11 --

12 BOARD MEMBER LLOYD: No, that's okay, because
13 he's looking at the life of the program and giving you a
14 number that's specific. Thanks.

15 MR. ORTIZ: Yeah. Okay.

16 BOARD MEMBER LLOYD: I appreciate that.

17 CHAIR GORDON: I actually think it would be good
18 to know the basis of the 2 percent. I had that same
19 question, so if you could ask him and just get back to us
20 that would be great.

21 MR. ORTIZ: Yeah absolutely I can do that.

22 Okay. So back to emissions reductions. So these
23 are LCFS figures, Low Carbon Fuel Standard. So as we can
24 see the carbon intensity of electricity is a little bit
25 more than diesel. But because electric vehicles are about

1 four times more fuel efficient, it ends up being one of
2 those things where we actually cut down on emissions by
3 quite a bit.

4 I also used current LCFS standards. So this
5 doesn't take into account the fact that we're incorporating
6 more renewables onto the grid, so we expect the carbon
7 intensity of electricity to drop over time. But I used
8 just a flat one.

9 Also cost of carbon, this is a Cap and Trade
10 figure. This is also expected to rise, but I just assigned
11 the 2 percent to it, so again going as conservative as
12 possible, so this one isn't quite as many savings. It's
13 about \$6,000 a year. Again, this is conservatively
14 expected to be much higher.

15 All right. Maintenance savings, so there aren't
16 really a lot of studies out about school buses right now,
17 so I had to use transit buses. It's not quite apples-to-
18 apples, but what we saw was about a 25 cent difference
19 between the two. In the study that cited the 88 cents and
20 it was actually initially 62 cents they didn't take into
21 account battery replacement. So I equated that using IEPR
22 numbers from CEC, so they expect that in 2030 that it'll
23 conservatively be about \$120 per kilowatt hour. So using
24 the same size battery and that cost, I came up with about
25 nine cents per mile and added that on. So replacement is,

1 yeah in today's dollars, about \$14,000. So again, I input
2 this into the present worth equation and came up with a
3 difference of about \$38,000.

4 Health benefits, so I used a tool developed by
5 the USEPA. It's a diesel emissions quantifier, so this
6 determines health benefits on a monetary basis through
7 avoidance of a lot of pollutant-based illnesses. So I
8 have some of the more notable ones listed on this slide,
9 but there a lot more. And this only accounts for community
10 based reductions. It doesn't actually go into onboard
11 emissions reductions. So we actually expect that this is a
12 fairly conservative estimate of what it actually reduces.
13 A lot of the internal combustion buses trap a lot of the
14 emissions onboard, so a lot of these students are actually
15 breathing this in as they're riding to and from school.

16 CHAIR GORDON: I was going to ask about the
17 geographic scale. Do you know how big it is? Like when
18 they say "community scale" what area does the tool look at?

19 MR. ORTIZ: So it's looking at the whole county
20 and it's doing it based on population as well. So I think
21 have the equation somewhere. But I believe it takes the
22 amount of people and divides by the square mileage to
23 determine that. Yeah, I can find that. I can provide that
24 for you too if you want.

25 CHAIR GORDON: That's okay.

1 MR. ORTIZ: No, okay. So when I was setting up
2 the model, again I was trying to give as conservative as
3 possible. This is a statewide model. We're not looking at
4 any particular region at the moment. So what I did is I
5 assigned 25 percent usage to each of the four regions and I
6 identified the county in each region that had the lowest
7 annual health benefits. And then used that to determine
8 just what we assumed the average health benefits could be
9 over the lifetime of this bus. And that came out to a
10 lifetime benefit calculation of about \$145,000.

11 And then finally I used economic benefits, so
12 this is provided by the Bureau of Economic Analysis. These
13 are economic multipliers. So you can kind of think of it
14 as if you spend a dollar on a project based on what you're
15 spending it on, it turns into \$1.45 for construction is
16 what's actually felt in the economy. And this is local
17 economy.

18 BOARD MEMBER LLOYD: Could we go back one slide?
19 It's actually the DEQ outputs and analysis slide. I was a
20 little slow to take in what you were saying. If two of
21 those regions did not have applicants then why are they
22 receiving 25 percent of the benefit calculations in your
23 program level summary?

24 MR. ORTIZ: So at the time that I wrote this, or
25 set up the model, we hadn't yet seen the applications. We

1 didn't know that we hadn't received any applications from
2 them. But we also wanted to go conservative, so this is
3 again to show that we expect that these numbers will be
4 higher. But these were the lowest ones in that region.

5 BOARD MEMBER LLOYD: Right. And those regions
6 that didn't have it were very low. So you're saying that
7 that's again conservative, but almost to the point of --
8 yeah, okay.

9 MR. ORTIZ: Yeah. And if we moved on to the next
10 one, to each one, I think it's actually it's -- that
11 actually received or that submitted applications, it goes
12 up higher. I'm not sure exactly how much.

13 Okay, so here's the input for the economic
14 multipliers. So for construction we had \$60,000 for
15 infrastructure. I assumed 5,000 of that for a charger, the
16 other 55 thousand for actual trenching and things like
17 that. For motor vehicles, bodies and trailers and parts
18 manufacturing, I gave the 5,000 for the charger here and
19 assumed that only 25 percent of the actual cost of the bus
20 was staying in state. The other 75 percent would be out of
21 state, with 10 percent coming back. This is because a lot
22 of the bus manufacturers are based not in California, some
23 of them are in Canada, we have Georgia. But they do have
24 business presence here. And a lot of the final touches are
25 done in California.

1 So putting all those numbers to the multiplier,
2 what we see is an economic benefit of about \$278,000.

3 CHAIR GORDON: Just really quickly, because
4 you're thinking about this, manufacturing kind of comes in
5 here. Have there been impacts on your cost estimates or
6 are you hearing about potential impacts from the tariffs?
7 Because of course they are affecting other vehicle
8 manufacturers, all over the place and we're seeing that.

9 MR. ORTIZ: Yeah. So we assume there are going
10 to be some impacts of the purchase price of these vehicles,
11 based on the steel tariffs. I believe at *STN News*,
12 (phonetic) recently they interviewed the Blue Bird CEO and
13 he said that they did have to raise the prices of their
14 buses in the last quarter. So we expect that there will be
15 some impact. We conservatively went with the price on
16 this. We do expect that a lot of these buses will receive
17 outside funding, such as AFIP, HFIP (phonetic) that will
18 drastically reduce the cost of these buses.

19 So it should make up for that. We're not exactly
20 sure how much it's going to affect the price until we
21 actually see the applications for our next phased
22 solicitation.

23 So I tabulated the results. So these are all the
24 savings for each of the benefits that we identified. And
25 what we ended up finding is that total benefits of about

1 \$546,000. So when you compare that to the costs of the
2 project we end up finding out that the total project
3 benefits exceed the total cost by about \$71,000 over the
4 course of 20 years. Again, this is using very conservative
5 numbers. We do expect these numbers to hopefully rise when
6 we actually start getting the data from individual
7 districts.

8 All right, so I want to thank you all. This is a
9 picture of our unit that's been working on this in front of
10 one of the Type D electric buses.

11 CHAIR GORDON: Thank you. I want to give folks
12 on the phone a chance to ask questions if you have any.

13 BOARD MEMBER MARTINEZ: No questions here.

14 CHAIR GORDON: All right.

15 BOARD MEMBER ROSENBERG: Like Mark just said I'm
16 good, yeah.

17 CHAIR GORDON: You're good, okay great.

18 In the room, Barbara any other?

19 BOARD MEMBER LLOYD: Yeah, I just wanted to
20 compliment them on their thoroughness in which they went
21 about and the methodology in using a lot of verifiable
22 sources, despite my question about the discount rate. It's
23 only because it was there to see, so thank you for that
24 transparency.

25 MR. ORTIZ: Yeah. I can run this model any way

1 you want, with whatever discount rate as well.

2 CHAIR GORDON: That's good.

3 BOARD MEMBER DIAS: What are the costs for the CN
4 and what's the other ones?

5 UNIDENTIFIED SPEAKER: CNG?

6 BOARD MEMBER DIAS: No, the other buses. Do you
7 have an estimate on those?

8 MR. ORTIZ: Oh, for Type A and Type C?

9 BOARD MEMBER DIAS: Yeah.

10 MR. ORTIZ: They're all going to be less. Type
11 A, we haven't gotten anything solid on that. We expect
12 them to be about \$200,000. We don't know until we actually
13 get the applications. And then Type C I think we're
14 expecting up to \$350,000 on those.

15 BOARD MEMBER DIAS: Thank you.

16 CHAIR GORDON: Well, thank you. This is really,
17 really helpful. And I appreciate. I echo Barbara on being
18 happy about the methodology. It's not super easy to do
19 this stuff conservatively, because you get a lot of
20 pressure to do it otherwise. So thank you for doing that.
21 It's always better.

22 And we look forward to seeing what happens with
23 where people are getting the buses from and what they look
24 like and what the benefits actually are. And we will have
25 you back I'm sure, to talk about that at some point in the

1 future.

2 MR. ORTIZ: Any time.

3 CHAIR GORDON: Thank you.

4 MR. BARTRIDGE: Okay. Next up we have a
5 presentation by the School Energy Coalition on the various
6 Proposition 39 funded projects and advocacy efforts, so
7 Anna, Nikolai and Bill McGuire if I could have you come up
8 here to the table and speak. The microphones are on red.
9 You have to press them to turn green and speak. And if
10 you'd like to come up, I can either advance your slides for
11 you or we have the clicker? Okay. And then, Darin,
12 you're remote, so when they're finished, we'll bring up
13 your presentation as well.

14 CHAIR GORDON: Hi, Anna. It's good to see you
15 back.

16 MS. FERRERA: Hello.

17 CHAIR GORDON: I just want to say thank you to
18 you guys and for the schools we'll be hearing from. This
19 is really the work of this whole program has really been
20 done on the ground and you've been a huge part of it, so
21 thank you for all of your efforts, over the last five years
22 and ongoing.

23 MS. FERRERA: We're very excited to be here, so
24 good afternoon, Chair Gordon and members. I'm Anna
25 Ferrera, Executive Director of the School Energy Coalition.

1 We're an organization that was formed in 2011, right before
2 Prop 39. I'd like to say we were a visionary on that
3 front, but just lucky I think. But we were seeing a trend
4 in schools going in the direction of wanting to save energy
5 and utility on their utility bills. So we're made up of
6 school districts throughout the state, with a focus on
7 better energy and water consciousness and to advocate for
8 more opportunities and funding for energy efficiency and
9 renewable projects on school sites.

10 We appreciate the invitation from the Citizens
11 Oversight Board to provide an update on where schools are
12 with Prop 39, which has had a tremendous impact on school
13 districts statewide. Not only has it informed them, some
14 of them didn't even know what their baseline energy usage
15 was.

16 But also has had a wonderful experience, I think,
17 for some of them. In looking at options a lot of them went
18 with lighting. Some went HVAC. But others went beyond and
19 you'll hear kind of a number of different areas where
20 schools have had lots of use and then others not so much.
21 And I'm sure we'll have other schools on the phone as well,
22 because we've let our membership know to call in.

23 So SEC has been involved from the start, from the
24 initiative start with its passage and implementation and
25 then school facility focus. We've worked hard to keep

1 California schools informed regarding the resulting program
2 and now, in preparation for audits. We appreciate the work
3 and availability of the CEC staff as the program developed
4 and amending the program to make it work better for school
5 districts as we discovered together what tweaks were
6 needed.

7 We especially call out Liz Shirakh (phonetic) and
8 Haile Bucaneg and many others at the CEC, their Prop 39
9 team, for that. And more recently thanks to Jim Bartridge
10 and Jack Bastida who staffed the Board, as you know.

11 I'm pleased to have three of our members here
12 today. And I'm sure more of our districts, as I said, are
13 on the phone. They'll share their progress so far from an
14 individual district perspective. What are you all saying
15 over there? Each come from different parts of the state
16 with very different climates, so you'll get a good feel for
17 some of that as well.

18 I'm also here to share that that the SEC
19 continues to advocate for additional funding to be added to
20 the Clean Energy Jobs Creation Fund and the state's annual
21 budget process, which has already begun. The budget
22 process has already begun with the new administration. As
23 you know, the sunsets were removed from the program,
24 through Senator de Leon's SB 110 a couple of years back.
25 And the Legislature is free to add funding to this program

1 should they choose to.

2 When I talk to legislative members about adding
3 funding, I give them three reasons. One, the corporate tax
4 funding source that provided an average of 349 million
5 annually for the five year program is still in place and is
6 providing that additional funding to the state. It had
7 been projected to be a billion dollars annually, if you'll
8 remember. Half of which was to go to public energy
9 projects, per the initiative.

10 The second one is data. We need to start more
11 projects while the baseline and benchmarking data is still
12 fresh and applicable.

13 But the third reason is the best reason. And we
14 are sharing that, thanks to CEC's great record keeping and
15 our own individual stories, we can show that projects are
16 successfully moving forward and we are generating savings
17 as projected. Schools have proven that the funding is
18 sought after as school districts went out for 98 percent of
19 the Proposition 39 award dollars.

20 We started our advocacy efforts last year with
21 the budget process as the original five program years were
22 reaching completion. And we are continuing to speak to
23 legislators and staff about why we believe that is funding
24 well spent and deserving of another installment.

25 We are including in this discussion potential

1 tweaks to the program and with the new demands for
2 resiliency in the face of natural disasters and utility
3 rate increases along with proactive outages that now will
4 occur when weather conditions are ripe for wild fires.
5 That schools may also look at energy and water projects
6 that allow them to stay functional and provide shelter to
7 students and communities.

8 We appreciate the Citizens Oversight Board has
9 also included a recommendation in their reports that
10 additional program funding is worthy -- and we urge you to
11 continue to include this in your recommendations in the
12 upcoming months.

13 So to the matter at hand, let me now introduce
14 our three SEC members who will present today.

15 First we will have SEC Executive Member, Nik
16 Kaestner from San Francisco Unified School District. Nik
17 is the first Director of Sustainability at SF USD where he
18 has collaborated with teachers, students and staff to
19 develop a nationally recognized Sustainable Schools
20 Program. His staff of five is busy promoting -- I can
21 vouch for that -- energy efficiency, water conservation,
22 waste reduction, green school yards and low-carbon
23 transportation in the District's 180 sites. Since Nik was
24 hired, SFUSD's energy usage has dropped by 30 percent.
25 Water usage is down 28 percent. Waste diversion has been

1 doubled to 66 percent. SFUSD has been recognized as a
2 green ribbon district by the U.S. Department of Education
3 and received the best of green schools award for industry
4 transformation from the USGBC's Center for Green Schools,
5 the Green California Summit's leadership award and the
6 Green Culture leadership award at the California Green
7 Schools Summit.

8 Next, we'll have our esteemed SEC Chair, Bill
9 McGuire from Twin Rivers Unified School District. Bill is
10 the Deputy Superintendent of Administrative Services for
11 Twin Rivers where he oversees business services,
12 communications, physical services, general services, human
13 resources, information and education technology, nutrition
14 services, police services, purchasing and transportation.
15 (Laughter.)

16 This is how we roll in school facilities wearing
17 very, very many hats, which is why this has been such a
18 wonderful endeavor and very helpful to our school
19 districts.

20 In addition, Mr. McGuire has held the position as
21 CBO and Assistant Associate Superintendent at four other
22 school districts. And Bill is the recipient of the
23 Association of School Business Officials International
24 Pinnacle of Achievement Award.

25 Third up will be SEC member, Darin Vey, from San

1 Diego Unified School District. Darin is the Energy
2 Utilities Program Supervisor at SDUSD, consisting of over
3 200 sites. SDUSD is the eighth largest school district in
4 the nation and the second largest in California. Mr. Vey
5 leads a team of energy coordinators, management and
6 recycling specialists. Mr. Vey's team implements energy
7 saving projects funded by Prop 39. His team also
8 coordinates demand side management, utility budget
9 forecasting, implementing conservation projects, ZNE and
10 solar programs.

11 Currently SDUSD manages 37 solar sites with 20
12 more solar sites being installed this year. With over 20
13 years of management experience in the energy and utilities
14 industry, Mr. Vey had the position of Energy Conservation
15 Manager at Carlsbad Unified and Fallbrook Union High School
16 Districts.

17 So now, let us begin today with Nik from SFUSD.

18 MR. KAESTNER: You know how it is.

19 MS. FERRERA: Yes, welcome Nik.

20 MR. KAESTNER: Thank you, Board Members. I'm
21 excited to be here to share what we've been doing at San
22 Francisco Unified and to help you understand how Prop 39
23 fits into that bigger picture.

24 So, as you know we are a dense urban school
25 district, the seventh largest in California. We have

1 55,000 very diverse and mostly low-income students. Voters
2 can certainly support the school district and its
3 facilities' efforts, although I should note that about a
4 quarter of the students in San Francisco do not attend SF
5 Unified.

6 Our schools look mainly like this. They can be
7 100 years old, some 60, 50 etcetera. We have very few new
8 buildings. That's something to keep in mind as we're
9 trying to think about how to improve the efficiency of our
10 building stock.

11 We have a municipal utility in the San Francisco
12 Public Utilities Commission that provides electricity and
13 water. And the PUC is engaged in a lot of water and sewer
14 projects right now, and has decided that it needs to start
15 recovering more of the cost of producing power. So as you
16 can see our water and electric rates have been going up
17 recently, which provides somewhat of a mandate for us to
18 improve the efficiency. For many years we were paying 3.75
19 cents a kilowatt hour and so the drive to do a lot of this
20 work wasn't there, although I will credit the City of San
21 Francisco for hiring or for creating my position back in
22 2008, long before these price increases were being
23 discussed.

24 On the gas side, as you know, there's a lot of
25 things happening with natural gas across the country right

1 now. So those rates tend to fluctuate. Right now we're in
2 a period where the gas prices are a little bit lower.

3 But as a result of these price increases we're
4 definitely interested in how we can improve the efficiency
5 of our building stock. And to keep costs down we like to
6 do that as part of our normal modernization cycle.

7 The outer ring here represents kind of your big
8 bond capital projects. The inner ring represents
9 facilities-driven deferred maintenance projects that we
10 might do on a one-off basis. So instead of going out and
11 essentially implementing Prop 39 through a particular
12 project manager with a particular mandate, we've decided to
13 actually add funding to existing projects and therefore add
14 scope. And that scope will help bring the energy use of
15 those projects down.

16 So that was kind of a first round of Prop 39
17 projects, which included separation of domestic hot water
18 from the space heating systems, so that the hot water could
19 run independently; adding occupancy sensors to Visitacion
20 Valley Middle School. At El Dorado Elementary School we
21 replaced the boilers entirely including the piping system.
22 And we added refrigeration in the kitchens. And at John
23 Yehall Chin Elementary School we also installed condensing
24 boilers, new fan-coil units and a water heater.

25 So classic efficiency work, we saved about 23,000

1 kilowatt hours. We're projecting to save 23,000 kilowatt
2 hours and 2.1 thousand therms or about \$3,700 a year.

3 So these are great projects. But at that point,
4 our Governor decided that he wanted to increase our
5 leadership as a state in terms of tackling climate change.
6 And what that means for us, remember our building stock, is
7 that 50 percent of existing commercial buildings should be
8 retrofitted to ZNE by 2030, a very ambitious goal. In
9 fact, much more ambitious than the goal for new
10 construction, because we're designing ZNE buildings right
11 now and we have until 2030 before the code that will likely
12 mandate commercial construction in ZNE.

13 So as a district we thought how are we going to
14 prepare ourselves for this future world by changing the way
15 that we do business right now? And what we've decided to
16 do is to first look at how our previous bond treated the
17 topic of energy. As you can see in this graph the dark
18 purple lines are the post modernization energy use
19 intensity of the buildings that were part of the 2011 bond.
20 And the light purple lines show you how much energy they
21 were using before.

22 From the top half of this graph, you'll notice
23 that a lot of our buildings significantly dropped their
24 energy usage just by virtue of the fact that they were
25 meeting code during the modernization process. And for

1 those of you who know what EUI means kBtu postscript
2 (phonetic) or per year, a lot of those buildings actually
3 dropped down to the EUI of 20 or even lower. And
4 admittedly that is partially because we're in a very mild
5 climate. That's also why we have higher energy standards
6 than you might expect if we were the Tahoe Unified School
7 District.

8 The bottom half of the graph though is obviously
9 cause for concern, because some of our buildings increased
10 their energy usage as a result of modernization. Mostly
11 not by a large amount, but the one at the bottom, Creative
12 Arts Charter School, almost doubled its energy.

13 So we decided to look to the DOE to provide
14 guidance for what kind of an energy target we should use in
15 San Francisco Unified. For elementary schools DOE
16 recommends 21.6 kBtu/ft₂.yr and for a high school something
17 on the order of 19. So we split the difference and
18 basically mandated that all new construction needs to have
19 an EUI of 20 kBtu/ft₂.yr.

20 The other thing we did is we modeled how we would
21 achieve zero net energy-ready buildings in some of these
22 new modernization products that are part of the 2016 bond.
23 And what we noticed is that the two biggest impacts come
24 from the switch to LED lighting, which is a no brainer
25 nowadays, because the controls are so much cheaper. So

1 it's actually the most cost effective way to do lighting.
2 And then at the very end of the far right side of the graph
3 you can see that switching to electric heat pumps or VRF
4 systems is also essential for us to get below that pink
5 dotted line, which is the top of the two dotted lines.
6 That's the EUI target of 20 that we've set for ourselves.
7 So basically the name of the game is electrification, in
8 San Francisco, at least.

9 We also discussed -- I'm not going to go into
10 detail here, but we discussed all of this project of
11 getting to ZNE-ready status by 2030 with our Buildings and
12 Grounds Department. They pointed out that all of their
13 staff is not equipped to deal with electric heating right
14 now, so we need to manage this transition slowly. That's
15 why a lot of our focus was intended to be on lighting and
16 envelope measures first that reduced the load. That would
17 give us time to have boiler guys retire and electric heat
18 pump guys join the shop.

19 We also noticed that renewables for us, because
20 we obtain our power from the Hetch Hetchy Electric Power
21 System, renewables is not a priority. We're not putting
22 solar like crazy on all of our rooftops. There's two
23 reasons for that. One again, is that our power is clean
24 right now and secondly that because of a low electric rate
25 none of the PPAs, and that because of a low electric rate,

1 none of the PPAs and those similar mechanisms will work
2 cost effectively for San Francisco Unified. We do think
3 that as our electric rate goes up that those kind of
4 financial mechanisms will allow us to localize our energy
5 production. And that will allow Hetch Hetchy Power to go
6 onto the grid and help green other customers.

7 Well, finally just to sum up here our Carbon
8 Reduction Plan was our public facing (phonetic) document
9 that describes our process and where we've landed. We also
10 have a separate document, our district-wide Owner's Project
11 Requirements, our OPRs, which are an eight-page document
12 that we give to every architect to explain how we want them
13 to design our buildings.

14 And then the Board of Education adopted a
15 resolution that basically called for the school district to
16 eliminate all fossil fuel emissions by the year 2040 and
17 we're working towards that goal, as you've already heard
18 from Anna's introduction.

19 The reason I mentioned all of this is because the
20 way that we're doing Prop 39 now is different from the way
21 we did it before. We are still piggy backed on existing
22 projects, but we now have a new internal goal that we're
23 trying to meet. And so we will do projects like LED
24 lighting, lighting controls, windows, heat pumps, these are
25 projects that move us towards our ZNE goal as defined

1 through our energy studies.

2 We're a little more cautious, and I don't know
3 why I broke it down this way, but a little more cautious
4 about doing those items in orange, which are improvements
5 to existing gas based heating systems. We will do those to
6 improve the efficiency of those legacy systems when we
7 think that those systems will still around for a decade or
8 so. But if it's a gas-based heating system we think we
9 might replace in two or three years we're not going to put
10 a lot of money into that system. And then as a result of
11 our electrification efforts we're absolutely not putting in
12 any new gas boilers, which did, you'll remember, in our
13 first round of Prop 39 projects.

14 So we're moving away from how do we improve the
15 efficiency of buildings and moving more towards the lens of
16 how do we get to our zero net energy goals? And that has
17 completely changed the way that we apply to our projects.
18 The rest of the projects, I think we've had another four
19 applications come in with 475,000 kilowatt hours or 26,000
20 therms. We hope that will save us about \$60,000 a year.

21 So I think that was the last slide. I did have
22 one that unfortunately was hidden in the PowerPoint, just
23 to explain that we were not able to take -- there it is --
24 were not able to take advantage of the school bus dollars,
25 because we don't own our own fleet, but we're working on

1 incorporation electric vehicles into our contract with our
2 current vendor.

3 And the other thing I want to point out is,
4 that's not on any one of these slides, is that we have
5 spent every year some funding from Prop 39 for an Energy
6 Manager. And that Energy Manager has provided invaluable
7 benefits throughout the last five years. And it's not just
8 about coordinating our Prop 39 process. Once you have a
9 staff member whose mission it is to reduce energy usage you
10 find energy waste all over the place.

11 We now have regular reports to Buildings and
12 Grounds about leaks that are happening thanks to our data
13 collection tools, which our Energy Manager created. We
14 have reports going to Buildings and Grounds about energy
15 waste, like fans that might be running or not. So we're
16 constantly making adjustments on the fly. And fortunately,
17 as you probably know at the end of next July the funding
18 for Energy Managers goes away. So this is just a quick
19 plug to remind you that as we start looking at how the
20 Legislature might fund that program in the future, the
21 people are actually I think in my opinion, way more
22 important than the projects. Because a lot of schools will
23 have bonds that can pay for the construction piece of it,
24 but what we need is somebody to coordinate the process.
25 And if we want other districts to start thinking about zero

1 net energy and just take these longer timeframes, look at
2 them in longer timeframes, I think that it is a mistake to
3 just focus on project completion.

4 So with that I will finish. And I'll thanks for
5 your attention and at the end I guess I'll have time to do
6 questions.

7 CHAIR GORDON: That is great, Nik. Thank you.

8 And actually just a quick question right now on
9 your last point, my understanding just from other
10 presentations we've had is that one of the things about
11 Prop 39 funding is unlike bond funding and some of the
12 other funding from the state, when you have energy savings
13 from some of these measures, you can actually put those
14 savings back into your operational budgets or your
15 maintenance budgets, right?

16 How are you thinking about what have you done
17 with those savings and is there some potential to use some
18 of that for ongoing energy management?

19 MR. KAESTNER: Theoretically or conceptually, yes
20 that's true. It gets to be a little messy because the
21 utility budget, as provided by the district office, will
22 change based on need. So getting the district office to
23 agree that it will keep the utility budget at the same
24 level that it was last year and that basically you as a
25 facility department get to keep the dollars that you won't

1 need to spend next year, has been an uphill struggle for
2 us.

3 And I think part of it is that fiscal officers
4 are very conservative. And so even if they can understand
5 your logic, that money is really money that was created
6 through the Prop 39 Program through other efforts that were
7 taking independent of Prop 39, I think it has been
8 difficult for us to guarantee that that funding will come
9 back to us.

10 Having said that, our Fiscal Officer has been
11 very impressed by our ability to understand the utility
12 database, and has basically assigned utilities to the
13 Sustainability Office in San Francisco; it used to be
14 somewhere in the Budget Office. So I think we are at least
15 slowly winning her over and explaining the importance of
16 having some of those dollars come back to us, so that we
17 can do more of this work. But you're right. In concept,
18 it's true.

19 CHAIR GORDON: Thank you. I know that game,
20 having had the same thing happen with foundation funding
21 for nonprofits, so I get it. Just since I disrupted
22 everything and asked a question, any other questions from
23 the Board to San Francisco before we go forward?

24 I'm excited to hear about Twin Rivers, I feel
25 like you guys are like a -- we hear about you a lot.

1 You're one of the success stories of Prop 39.

2 MR. MCGUIRE: I like am upset that we're
3 following Nik. (Laughter.) We don't look that good. We
4 don't have that --

5 CHAIR GORDON: No but you have more titles than
6 he does.

7 MR. MCGUIRE: -- kind of money. We don't' have
8 any of that stuff. Wow, I'm like just going to go home
9 now.

10 So Twin Rivers, as you know, 27th largest school
11 district in North Sacramento. We have 26,000 students,
12 speaking 46 different languages, 3,000 employees, 52
13 schools, the same as a lot of schools in comparison as we
14 go through that.

15 But when we think about just totally Prop 39 as a
16 whole is \$8.5 million, including our charter schools --
17 I've been before you before to talk about charter schools
18 and how they are not separate entities and they need to
19 work collectively with the school districts -- and we were
20 able to do that with all of our independent charters and
21 work together to implement some great things.

22 Our average age is 45 plus, so now I feel good
23 that we have an 84-year-old school, since he has a 100-
24 year-old school. So I'm not going to complain about that
25 anymore. We also are partnered with SMUD and CCC. In

1 relationship to that, I had a great partnership during all
2 of Prop 39 to work with.

3 Unfortunately, Twin Rivers doesn't have bond
4 funds or other things and what we went with was the biggest
5 bang for the buck, not lighting, not other things. We
6 really invested heavily in HVAC and used all of our
7 available funding to match the Prop 39 money. And we're
8 very creative in doing that. That said, we did do control
9 and lighting at places where it made sense, but really
10 we're one of the first and heavily invested in HVAC work.

11 And some of those schools are Grant and Harmon
12 Johnson at Foothill Ranch Middle School, which are their
13 very large projects. And when we go to the did we save
14 money? The answer is no, because they had a working
15 system, so they started using them more. And but the good
16 news is it provided a safe and secure, warm and dry
17 environment for the students.

18 Again, especially with our charter schools, we
19 have seven charter schools that are depended in Twin Rivers
20 and seven that are independent. Of those, as you know, the
21 charter schools would get an individual grant, but they are
22 in our schools. And so we worked very hard this last two
23 years to collectively work together to utilize the funds in
24 the most efficient way possible and entered into agreements
25 with the charter schools to facilitate all of the

1 improvements on their behalf. And did all of the
2 purchasing, all of the contracting, everything for the
3 charter schools.

4 And that work is in progress. And you can see we
5 also have continued with other schools, Del Paso Heights
6 Elementary, Fairbanks, Foothill, Hagginwood and Hazel
7 Strauch. And so clearly you can see that what we were
8 trying to do was impact full schools in the HVAC realm
9 anyway that we could and also do the lighting. And of
10 course we had to create a team for that, which feeling the
11 difference created a new climate in our classrooms. And we
12 gave a lot of credit to Prop 39 to be able to do that.

13 Just some results in relationship to Harmon
14 Johnson and Grant, you might remember five years ago we
15 were in the news about not having any heating and air in
16 those schools. And so we are appreciative of that, that we
17 do have them based on leveraging Prop 39 dollars to make
18 that happen.

19 And most importantly, that all of these projects
20 that we are talking about happened in the summer over a
21 ten-week time period. These are not projects we were
22 coming in and doing them during the year. We had a very
23 finite, over the last five years, tremendous effort. And
24 when you're doing that in a 10 week period, there's
25 overtime. There's lots of employment to make that happen,

1 with the results of that.

2 Continuing down that thought process of Prop 39
3 and some of the things that are coming to the future, Twin
4 Rivers currently the largest fleet deployed in the nation
5 with 16 zero energy buses and we work together with the Air
6 Board and a variety of other things to bring those 16 buses
7 together. We worked with SMUD, who provided a grant to put
8 the installation in. And as you heard this installation is
9 a big deal. Having an electric bus without a way to charge
10 it doesn't make a lot of sense.

11 We, like San Francisco, have a local municipal
12 provided utility district and our rates are lower than
13 most, so solar and alternative doesn't pencil out for us.
14 So it's big deal that SMUD came to us and came to the table
15 and said we're willing to help you establish these stations
16 for the 16 buses that we have.

17 And more importantly, we're really excited --
18 well we're disappointed that our school buses are on the
19 top of the list and scored out with scores of 98, like
20 second or third highest in the State of California. In the
21 northern region, we have 15 school buses that scored at 80
22 points or more. And so we're really looking forward to
23 expanding that fleet with the next phase of the work that
24 CEC is doing relative to zero emission bus programs. And
25 our Director of Transportation, Tim Shannon, has been

1 working very closely with CEC because of the experience
2 that we had. And it's a testament to CEC, they're reaching
3 out to the field and getting input from the field about
4 what's really happening from those that already do have
5 electric buses.

6 But with that as Anna said there's a lot going on
7 out there. It just doesn't stop because Prop 39 funding is
8 still within the state budget. You know me, I'll tell you
9 the truth. And somebody else is taking it away to solve
10 their problem rather than save our problems, right? And we
11 probably need to point out to them that that \$500 million
12 is just solving someone else's budget problem or giving
13 somebody else additional funding rather than schools.

14 But as part of that, we have Title 4 Regulations.
15 We have zero net energy. We, in Twin Rivers, are never
16 going to get there. We will never get there with the fact
17 that we don't have a facilities bond. We're not going to
18 have one on the ballot for years to come. We don't have
19 additional funding. We are, and I'm just like his
20 financial person that won't give them the money, because we
21 have to balance our budget based upon STIRS and PIRS
22 (phonetic) increases and all those things that take every
23 dime that we can have.

24 And so this idea of zero net energy without
25 advanced stated funding will never happen. And for the

1 governor and anybody who thinks it is going to, it's a pie
2 in the sky without funding to help us do it. Schools do
3 not have the funding to be able to do this unless they're
4 diverting funding from another area. It's a great concept,
5 great thing that we should do, clearly I do believe in it
6 100 percent. But it won't happen without that.

7 And the idea that quite frankly our rates are
8 still going up and whether we're in the PG&E territory or
9 not, as rates go up our ability to pay for those things are
10 going to go down as we go through that as part of it.

11 Also, things that we've got to be talking about
12 is water supply, drinking water. We've, in fact had Grant
13 Union High School water system closed down for the last
14 four months, because of lead in the water at Grant Union
15 High School of course, because it's 84 years old and a
16 variety of other things. But all of these things are out
17 there with no ability to have any resources rather than
18 what we have to handle.

19 So you can imagine thinking about Grant Union
20 High School in 1934 right, and then redoing all the pipes
21 in that school because there's lead in the water. So we're
22 currently providing bottled water for every student at
23 Grant, because of that. That cost would be millions of
24 dollars to us to re-pipe that with no bond, no assistance,
25 no anything. How are we going to be able to do that? Now

1 again, we're going to come up with solutions. We're going
2 to make it work. But we all need to realize that this is
3 going to happen not just in Twin Rivers and not just at
4 Grant High School, but every school in the state that is in
5 that age of 40 years old and the different issues that
6 happen.

7 And so it's costing money to have bottled water
8 there. It's costing us money to test and test and test and
9 retest and fix things along the way until we can resolve
10 that issue. The good news is we do believe it was
11 resolved. And I come here every year and tell you all
12 these horrible things that are happening to us.

13 (Laughter.) And I'm more than willing to do it in the
14 future, but I don't think Anna is going to ask me back.

15 CHAIR GORDON: Thank you, Bill. No. It's always
16 a pleasure to have you here. I think it's just for those,
17 particularly who haven't been on the Board as long as some
18 of us, these presentations are -- and I think San Diego
19 will be the same -- really underscore some critical things
20 that people often forget, which is one, many schools in
21 California have not had a bond on the ballot since 1983. I
22 think we did a study back in the day. And don't have any
23 real hope of having a bond on the ballot any time soon.
24 And so we think that facilities bonds solve all these
25 problems, but in fact many places do not pass facilities

1 bonds. And they are off in the small rural districts,
2 right? I mean, this is what happens.

3 The other thing that you underscored, and we've
4 talked about a lot as a group and we thought about a lot
5 with CEC in the early days, is this issue that you had of
6 using more energy when you do the fix because you put in
7 HVAC when there wasn't HVAC, right? It was a real point of
8 discussion in the early years is the program and something
9 that was eye opening for all of us too, that that was --
10 you can't have a kind of a one size fits all approach,
11 because these schools are radically different from each
12 other. So I think it's always incredibly helpful to hear
13 that perspective. So thank you and you've done an amazing
14 job with the money you've gotten. So if it was up to us,
15 we would have put more money into the program, so we're
16 trying.

17 Other questions for Bill from the Board on the
18 phone, anybody? I also didn't turn to you regarding San
19 Francisco yet, so do you have any questions before we hear
20 from San Diego?

21 BOARD MEMBER ROSENBERG: I just have one
22 question.

23 CHAIR GORDON: Yeah. Is that Heather?

24 BOARD MEMBER ROSENBERG: This is Heather. Yes,
25 hi. You listed microgrids on the list and I'm thinking

1 about emergency backup water and emergency power. Do you
2 have projects underway or plans to move this forward?

3 MR. MCGUIRE: We currently do not. But we know
4 that it's going to be an issue. And so we've got to think
5 about how to address it when it hits us.

6 MS. FERRERA: This is Anna Ferrera. I would say
7 also that is a broader discussion that's going on for many
8 schools as we have more of these demands on the school
9 sites, is looking at resiliency, energy battery storage,
10 all of those things that may make us able to keep the
11 lights on should an outage or a natural disaster occur.

12 CHAIR GORDON: So school sites as emergency
13 shelter or something. Yeah, right. That's a really
14 important point.

15 Barbara, did you have a question?

16 BOARD MEMBER ROSENBERG: Thank you.

17 BOARD MEMBER LLOYD: My only question is probably
18 to Jim, is are we able to get a copy of the
19 (indecipherable) after.

20 MR. BARTRIDGE: Yes, sorry. I got that one late
21 Friday. So I'll get that posted to the web right after the
22 meeting. And I'll email it out to the Board.

23 BOARD MEMBER LLOYD: It was interesting enough I
24 wanted to be able to refer back. Thanks.

25 MR. BARTRIDGE: Very good.

1 And we did have one question on the phone for
2 Nik, but let me hold that question and let me hold that
3 question and let's go to Darin Vey, Energy Utilities
4 Program Supervisor at San Diego. So Darin if you're on the
5 line?

6 MR. VEY: Yes.

7 MR. BARTRIDGE: Okay. And I'll go ahead and
8 advance your slides for you, so just give me a yell.

9 CHAIR GORDON: And just sorry, a good reminder
10 from Jim, we will have the ability for comment after
11 Darin's presentation on any of these presentations. And I
12 forgot to call for a public comment on the school buses, so
13 on the school buses as well.

14 MR. VEY: Okay. Well thank you so much for
15 enabling me to -- and I'm getting a lot of echo. I don't
16 know if that's a problem or does everybody else hear that
17 on the phone?

18 CHAIR GORDON: You sound fine to us actually.

19 MR. VEY: Okay.

20 MR. BARTRIDGE: I can hear the echo as well.

21 MR. VEY: Yeah. I'll just try to ignore it and
22 not listen to myself talk. Okay.

23 So the Prop 39 Program Update, I just wanted to
24 thank the committee for enabling me to speak and talk about
25 what we're doing here in San Diego. I thought that San

1 Francisco and Twin Rivers did an awesome job and what they
2 presented. We were told to have about five or six slides,
3 so I did that. And so they have more than that and that's
4 okay. I'm going to talk through most of our numbers and
5 what detail we have in our information.

6 And the first thing I wanted to discuss is where
7 we're at with the program. We're somewhat unique where we
8 have hired full-time energy coordinators to do the full
9 program, ever since 2015. And there are still employed.
10 They're more playing a project management roll at this
11 point getting the projects built, as opposed to doing the
12 plans and getting the funds and doing the energy manager
13 side of it.

14 They are still working it and it's been going
15 well. We are on track to finish, and as long as our
16 contractor gets everything done they're supposed to get
17 done, we'll talk later about some of the challenges that
18 we've had. But we're pretty excited about the results
19 we've seen so far. And some of the things I've noticed
20 with San Diego, with San Francisco, I mean, is that he was
21 saying that they had about eight cents per kilowatt hour.
22 And gosh, I wish it was that low here. We're looking at a
23 blended rate of about 29 cents a kilowatt hour in San
24 Diego. It's one of the highest in the nation.

25 So our paybacks and our effectiveness and our

1 programs are a lot more dramatic, because we're able to
2 save that much more every time we save a kilowatt. So
3 let's keep that in mind when we talk about some of these
4 numbers. So would you go to the next slide please? Thank
5 you.

6 So as Anna did in the introduction we have over
7 200 sites, that doesn't include charters, with over 100,000
8 students. With charters it's about 130,000 students.
9 We're the second largest school district in California and
10 we have a lot of people calling us, saying they want to do
11 business with us. And we do get a lot of calls. I know I
12 get a lot of calls and it's pretty time consuming. But
13 because we're a big target we have a -- you know, you saw
14 the dream big picture on the previous slide. We have a
15 very supportive Board that did an initiative back in 2013
16 to "Dream Big on Sustainability." Thank you for going
17 back, so that's really their slides and their graphic that
18 they put in there.

19 But this Prop 39 just so happened to come out
20 right when they were doing this initiative. And it was
21 really good timing because we as a Board, they knew we had
22 to be more sustainable. They came up with several measures
23 that included solar and ZNE and very forward thinking. And
24 so we just took the Prop 39 Initiative and implemented what
25 they wanted to do as a Board. So we did that. Could you

1 go to the next slide? Go back one. Okay thanks.

2 So we spent about \$19.4 million in energy spend
3 last year, which is about 75 million kilowatt hours. It's
4 quite a bit. And we are one of those districts that's
5 adding HVAC like it's going out of style. I mean we're
6 putting so many in, thousands and thousands a year, and
7 we're about 75 percent there. So we got more to go. We're
8 supposed to be done by 2019.

9 But ironically we have seen the kilowatt hours go
10 down, because of various reasons. But a lot of it has to
11 do with the Prop 39 projects offsetting that increase in
12 load as well as we are putting up PV solar. We do have
13 bond funding that they're doing for that, but the bond
14 funding as you were talking about, is very specific to
15 certain kind of projects, like they'll use it for doing
16 stadiums and new HVAC.

17 And then they saw my concern which is hey, HVAC
18 is going to add quite a bit of load here, you guys. And
19 instead of paying \$20 million a year we're going be
20 spending more like 30 million a year before it's all over
21 with if we don't do something. And they agreed and they
22 said, "All right, so we'll put in these million-dollar
23 solar projects using bond funding to help offset the cost."
24 And it has helped although the rate in which they're
25 putting HVAC in is a lot faster than the rate that we're

1 putting in solar. For example, we've put in close to 4,000
2 units just in the last two years, and just in the last two
3 years we've put up eight solar sites.

4 So it's not enough to offset the load. And I
5 know I like the model. It sounds real good, but it's a
6 cash flow problem. So since I'm the one that manages the
7 budget and does the forecasting and all that, I have a lot
8 of pluses and minuses when we try to figure out well what
9 are we going to spend next year. And I'm usually wrong,
10 because it's really hard to guess the weather and the HVAC
11 going in and the solar and so forth, so it's really an
12 interesting phenomenon that happens there. So could you go
13 to the next slide? Thank you.

14 So the CEC approved 98 projects on 59 sites. So
15 just to give you an idea we're getting about 25 percent of
16 the sites in our 200 sites that we're penetrating, when we
17 do the Prop 39 Fund. That represents about \$25,336,149
18 dollars that we're allocated for the five years, so some of
19 that money goes towards energy managers. Some of that
20 money goes towards auditing. And most of it goes towards
21 the projects.

22 So we have six full-time district staff
23 exclusively on Prop 39. And you know, as Bill was talking
24 about having an energy manager, and I think Nikolai
25 mentioned it as well, it is paramount that we continue to

1 fund energy managers, because if the bonds don't fund them
2 -- We do have a bond program, but it doesn't pay
3 operational costs. And so we have to deal with that. What
4 do we do with these people? They're very good at what they
5 do. And if we continue what we're doing since we only have
6 25 percent penetration into our district so far, dealing
7 with energy projects, we have a long way to go. And these
8 guys know exactly what the sites are, what next we would do
9 if we had more money and so forth.

10 We expect to save about 5 million kilowatt hours
11 with our projects and we expect to save about 1.4. That's
12 very conservative. We think we're going to do more than
13 that, depending on demand charges and that.

14 We've created 119 jobs and with what we expect to
15 do on CO2 offset is about 4,000 metric tons of CO2 that
16 won't be expended into our precious climate here. So
17 that's kind of what the numbers look like as a whole. Next
18 slide, please.

19 A lot of the projects that we spent is LED
20 lighting. We've put in about 32,000 fixtures in
21 classrooms, libraries, admin building since 2016. We spent
22 about \$9.1 million on just doing interior and exterior LED
23 lights. We did receive over \$2 million in rebates from
24 SDG&E. That money went back into the program. And we used
25 that to help fund more projects. We get about 19 percent

1 savings when you have the HVAC. That's how much savings
2 we're seeing with doing off the bill itself, the whole bill
3 to the site, when we do LED lights.
4 As a measure, it's over 50 percent if you looked at just
5 LED lights and how much it saves.

6 Exterior lighting is another area. We're doing
7 about 11 sites, doing exterior lighting. Those are going
8 to be done by 2020. And then we do use some district
9 labor. We use our in-house people to do some of this work
10 as well as some contracted labor to do that. Next slide.

11 A big portion of what we're doing is we're
12 replacing 20-plus year old HVAC units. Some of these are
13 rooftop units, barred units, just replacing them with a
14 higher SEER rating. We're doing that on 22 sites. We're
15 doing the design this year and we're installing this next
16 year and into 2020. So we're going to go right up,
17 probably right up to the June of 2020 deadline date, just
18 because of other reasons that I'll get into later.

19 HVAC controls is a big part of it. We use a
20 centralized EMS system. And being able to centrally
21 control our air conditioners is key, making sure that all
22 the set points are set right, that the schedules are in
23 right. We're shut down over holidays and breaks and summer
24 and so forth, so having that control really saves us a lot
25 of energy.

1 And they are putting in standalone thermostats in
2 some of the bond projects and then we are going in and
3 augmenting that with an EMS type setup. And that's because
4 mainly they just put it in and make it operate and then
5 leave it up to operations to deal with how they want to
6 have it hooked up and operate to the EMS. So we're working
7 through that. Next slide, please.

8 So some of the challenges that we ran into, the
9 RFP process was a lot longer and a lot more complicated
10 than we thought, the contracting process and it's mainly to
11 do with this district. Every district is a little
12 different, but this one's really big and there's some
13 bureaucracy and some hoops to jump through. It just took
14 way too long. And therefore, we ended up doing a lot of
15 our projects this year and next year. So we are concerned
16 about the time to complete installations by June 30th,
17 2020. I mean we have the projects being in design. Some
18 of them are going through DSA. That does take time to get
19 through all that.

20 And then the reliable and consistent data is also
21 another challenge from our IOU. They've been having some
22 problems with their programs and what used to be a
23 downloaded system. They've provided a computer program and
24 now they're having problems. And it's not reporting all
25 the time. And so we're trying to get our best marking as

1 accurate as possible, but unfortunately, we've been having
2 challenges in that area. We're trying to just get some
3 good data out of the IOU has been a challenge. And we're
4 working with them on that and they've been very helpful,
5 but I think their hands are tied too with the CPUC so they
6 say.

7 So if we got additional funding, let's say that
8 the 110 Bill would be funded, the goal would be to take the
9 remaining 80 percent of our sites for interior and exterior
10 lighting and just get that done. Like the other guys were
11 talking about it's quick. It's probably the fastest pay
12 off that you can do on a project. And we would take and
13 basically see that 19 percent savings. So if we're
14 spending close to \$20 million, and if you saw a 19 percent
15 savings across the board, do the math, you're looking at
16 just under \$4 million a year that's sustainable for our
17 district.

18 Additional ZNE projects to reach our 50 percent
19 2030 California goal, I think Nikolai mentioned that as
20 well, that we need to make that goal. And to do that
21 realistically 50 percent of our buildings is about 100
22 sites, if you do the math we're looking at about 8 to 9
23 sites a year. That's almost one a month that we would have
24 to do in terms of to reach that goal. So I just don't see
25 that happening. Either we change the goal or we throw a

1 bunch of money at it because realistically, if you do the
2 math it's very difficult to reach that goal, especially in
3 a district this big.

4 I mean we can do our best. We do have a ZNE
5 project and pilot that we have through SDG&E over at Vista
6 Grande Elementary School. And we're putting in almost \$2
7 million into that ZNE project, but it's placing the
8 chiller, putting in solar, we did interior LED lighting,
9 exterior LED lighting. Everywhere we can reduce the load
10 and we expect to get about 14 kBtu/ft₂ on that site once
11 we're done with it next summer. So we're pretty excited
12 about that ZNE pilot. We'll probably get some press on
13 that. We're hoping to get some good news on that one.

14 The remaining 78 percent of the sites for PV
15 solar generation, not every site can have solar. There's
16 some inner city schools that don't have much parking and
17 they don't have much roof space. So real estate is a
18 problem and solar doesn't solve everything. So we're going
19 to have to do some stuff beyond just doing solar
20 generation. We're looking at batteries. We're looking at
21 fuel cell.

22 But I think the biggest thing that everybody so
23 far has not really kind of talked about although Bill
24 mentioned it a little bit in his presentation was what we
25 call a Staff Behavioral and Student Energy Savings Program.

1 This is where you -- and I did this when I was at Carlsbad
2 Unified and at Fallbrook. You basically say, "Okay, staff.
3 Here's the things that you can do to save energy." And we
4 have almost 13,000 people on our staff. And we predict
5 that if everybody did what they were supposed to do to save
6 energy, and met the energy goals, that we can save anywhere
7 between 15 and 20 percent of savings just on behavioral and
8 student energy programs.

9 So we like to get students involved. We send
10 them data. We share the data, the benchmarking
11 information. They do analysis on it. We show them how to
12 do the technical side of it. And then the teacher
13 obviously gets involved, because we're not teachers. But
14 we're more operational guys. And then we provide that
15 information to them so they can see wow, we're using a lot
16 more energy than we thought, especially since we added
17 these air conditioners. What have we got to do?

18 And one of the things that we've discovered is
19 for years and years and decades they didn't have air
20 conditioning in a lot of these coastal schools, here in San
21 Diego. The weather's real nice here, so they really didn't
22 need it. Well, you know, the weather's getting hotter and
23 everybody else on the coast has HVAC and so hey, we should
24 have it too. They're outfitting 100 percent of the
25 district in air conditioning.

1 By doing that, these teachers are used to keeping
2 their doors and windows open to bring in the fresh air over
3 the years. And now slap in air conditioning. That
4 behavior doesn't change. And so now you have a bunch of
5 air conditioning running with doors and windows open and so
6 there's some things we have to do to ensure that they save
7 energy when they get these new systems. And this is
8 something that the energy managers would do and we do have
9 a plan for that.

10 Benchmarking software is a challenge, trying to
11 get -- because we have so many sites and so many different
12 uses and a lot of moving parts. Being able to measure that
13 and measure it with effectiveness, we need to do a better
14 job at our district of getting benchmarking software and
15 analysis tools. And they're not cheap and it does take
16 operational money to do that. Bond funding typically
17 doesn't pay for that.

18 And then the other thing is, because we're having
19 reliable problems with IOU we'd like to put in our own
20 automatic meeting reading sub-meters for better accuracy
21 and actual use. So we can get a better job of measuring
22 what we're doing in particular buildings and particular use
23 areas.

24 So that's kind of what we'd like to with
25 additional funds and how we could spend that and spend it

1 in a way that we can save up to 20 and maybe up to 30
2 percent if we do a behavioral program between the equipment
3 and the staff doing what they're supposed to do. So that's
4 our goal and that's what we're trying to head for.

5 And we just really appreciate the opportunity to
6 talk about what we're doing with our program and let me
7 know if you guys have any questions.

8 CHAIR GORDON: Thanks, Darin. That was a great
9 overview. It's such a radically different three school
10 districts, that was a great reminder of how different
11 things are in different places.

12 I could see Bill's face when you said you had six
13 full-time staff. He was like what I could do with six
14 full-time staff. No that was really great. Thank you.

15 MR. VEY: Well, thank you for explaining his
16 face, because I didn't know what his face looked like.
17 (Laughter.) I appreciate that.

18 CHAIR GORDON: It was yearning, I think is the
19 word.

20 All right, so I know we have a question from the
21 phone. Is that right, Jim?

22 MR. BARTRIDGE: We did have a question for Nik,
23 from Jay, who asked if you could explain how electric
24 heating is more efficient than natural gas. And I'll let
25 you answer that while I look for the next presentation.

1 MR. KAESTNER: Well, we really should have
2 somebody from the CEC explain this, but in a nutshell it
3 used to be that when you said electric heating you were
4 referring to electric resistance heat, where the heat is
5 being generated by a coil. And when you compare electric
6 resistance to natural gas-based heating like a furnace and
7 you account for the fact that you have to generate that
8 electricity at a power plant that might be operating at 33
9 percent efficiency, electric resistance heating, i.e.
10 electric heating, use to be less efficient when looked at
11 on a systems wide perspective.

12 Heat pumps do something different. They actually
13 take heat from one location and move it to another and so
14 for every BTU of heat that they move, they actually only
15 use like a third or a quarter of BTU of energy to do so.

16 So whether we're talking about a heat pump water
17 heater or a heat pump space or a VRS system, a variable
18 refrigerant system like the ones that we're putting in now,
19 the economics has now flipped so that electric heating is
20 actually more efficient than gas heating even when you
21 include the climate emissions of generating that
22 electricity. And of course as our grid gets even cleaner,
23 as San Francisco is using Hetch Hetchy Power we have even
24 one more reason why electricity is kind of the preferred
25 climate option now.

1 It's a very good question, because it definitely
2 was not the case if you asked the same question 10 or 20
3 years ago.

4 CHAIR GORDON: Thanks for that question.

5 Board Members, including on the phone, questions
6 for any of these, Adrienne?

7 BOARD MEMBER ALVORD: So I was really intrigued
8 when, Mr. Vey, you were talking about staff behavioral
9 elements. And Mr. McGuire talked about feel the
10 difference, which it looked like the sort of a way of
11 trying to communicate some of this. And I know we're
12 primarily looking at cost and energy and carbon
13 performance. But I wondered whether and how your
14 respective districts had communicated these projects to the
15 school community? And what kind of response you're getting
16 from the community, teachers, students, parents, if there's
17 a fair amount of awareness.

18 I would imagine it varies from school-to-school,
19 depending on the level of project intensity. But I'd
20 really love to hear about that.

21 MR. MCGUIRE: Well it does vary from school to
22 school and you can see with 53 schools, we did not touch 53
23 schools and even in San Diego where there's 200 schools.
24 So we're not doing systematic approaches across them. We
25 have an energy specialist, energy management person, who

1 does the same thing as their six. Only how can he get out
2 to 57 schools and preschools and make it all work?

3 So the environmental issue relative to staff
4 training and organizational behavior, with that the issue
5 is always that's the first thing we should be doing.
6 That's always the first three legs of the stool. And we
7 need to reduce consumption first and we can reduce
8 consumption with organizational behavior change. Then you
9 do everything else.

10 The problem is that is the hardest one to do. So
11 they were commenting about the teachers who leave their
12 door open in San Diego. Teachers have air conditioning
13 running and leave the door open when it's 110, right? In
14 Sacramento, it's just things that happen. And so with
15 that, if we could do that first that should always be done.
16 That should be done before any renewables, because then
17 you're right-sizing your renewables, not doing it for way
18 up here, but way down here. Again, this is the hardest
19 part.

20 This part is the easy. It's easy to change out
21 lights. It's easy to change out equipment. It's much
22 harder to change people's behaviors within any governmental
23 system.

24 BOARD MEMBER ALVORD: Well, before I hear from
25 the next one, I was remiss in not saying that I really

1 appreciated all of your very detailed and rich
2 presentations. So thanks for that.

3 MR. VEY: Yeah and I'd like to add to what Bill
4 was saying. He's right. You know, it's very hard to do
5 that. The good news is it doesn't take a lot of funding,
6 except to pay people to do that. And there are systems and
7 very predictable check lists and processes to make this
8 happen. So again I've done it before in other districts.
9 I know it works.

10 The tricky part is, is we haven't done it yet
11 with Prop 39, because Prop 39 funding doesn't support that.
12 We're supposed to be doing projects, not behavioral
13 programs. So even though I know how to do it and we even
14 have the people in place, that funding if you look at the
15 regulations is very specific, and says no. I even talked
16 to the Commissioner. It's not really meant to do
17 behavioral programs. You should be doing projects with it
18 and using project money, so we haven't been really doing
19 that.

20 We did a press release with the ZNE pilot, with
21 SDG&E over at Vista Grande Elementary School. We did that.
22 The staff was interested. The students are interested.
23 But it's very little. And that was more of a just of a PR
24 thing, so we're really limited in what we can do with Prop
25 39 money. Therefore if we do move forward and fund another

1 round of this, I think we should put in a behavioral
2 element into this, because it's an important part of like
3 what Bill said. It's the three-legged stool and there
4 might even be a forth leg, which is batteries now.

5 And so I just wanted to give you some feedback on
6 why we haven't really pushed that to date.

7 VICE CHAIR GOLD: This is Mark. I wanted to ask
8 sort of a follow-up question on that.

9 So for the 3 great presentations on the school
10 districts, so from those representatives I'm just wondering
11 with the installation of all the HVAC units and the LED
12 lighting, etcetera, what are you doing or what have you
13 done to sort of optimize the efficiency of those systems to
14 ensure that you're using minimum electricity, and
15 definitely only when on the students and the faculty and
16 staff need it, as opposed to running all the time?

17 And I'm bringing that up, sort of bringing up my
18 own university. As it's pretty surprising just recently
19 we've, five years ago started shutting down over winter
20 break. Shutting down a lot of our systems in laboratories
21 overnight that didn't really need to be on. It took us a
22 long time to get there. I'm just wondering what you guys
23 are doing to sort of optimize that system now? You're not
24 required but obviously it's in your financial best
25 interests.

1 MR. VEY: Yeah, so with San Diego Unified we
2 have, like I mentioned before, an EMS solution where we go
3 in and we set schedules and for the ones that we can
4 control and we go in and optimize that. We do shut down
5 for like -- we shut down for Thanksgiving break here
6 recently and we'll shut down for a couple of weeks at
7 Christmas, spring break. We'll do the summer. And there's
8 other things that we can do to encourage people to save
9 energy like shutting off mini-fridges when they're not
10 there and not having space heaters and that, which is a
11 whole other conversation.

12 We don't take away the appliances from people.
13 L.A. Unified tried to do that in 2009. It was a disaster,
14 so we learned from that and we don't take away their
15 heaters or take away their refrigerators, but we ask them
16 to be responsible with them.

17 So those kinds of things we're doing, kind of
18 surface level stuff, but the real deep program where you
19 send a guy out there every week and they do an audit and
20 they report on the audit. And they do work orders and
21 track it and it's a whole system that you would have to do
22 in order to really make it effective. And so right now, I
23 just think that we're not even 10 percent effective as we
24 could be, running a program like that at other districts,
25 is what I'm comparing it to.

1 VICE CHAIR GOLD: Thank you.

2 MR. KAESTNER: This is Nick chiming in from San
3 Francisco. Unrelated to Prop 39 we had a shared savings
4 program in the district where we would encourage schools to
5 reduce their energy usage and they could keep half of the
6 savings. And that program regularly paid out, I would say
7 up to 20 schools, with kind of a bonus at the end of the
8 year out of about 105 schools that we have that aren't
9 charters. So it wasn't wildly successful, but I think it
10 did play a role in kind of raising the awareness of the
11 school district as a whole. We've now actually
12 incorporated that program into something broader that
13 promotes sustainable education in schools in general,
14 called Earth Day Every Day. And so that program is no
15 longer a standalone program.

16 But I will say that Prop 39 has allowed -- the
17 Energy Manager provided by Prop 39, as one of those side
18 projects and side benefits I mentioned earlier, has gone
19 out and done presentations to schools that want to know a
20 little bit about their energy use or ways that they can
21 reduce their energy use.

22 So I think there are ways, once again, provided
23 you have an energy manager paid by Prop 39, there are ways
24 that behavior piece can be tackled, even though the focus
25 will obviously still be on projects.

1 CHAIR GORDON: That's a great point and those
2 competitions can sometimes be or having divisions can
3 compete against each other and things like that can
4 sometimes work.

5 I know we have to move on soon, but I know both
6 Barbara and Dave have questions. So I want to go to
7 Barbara, go to Dave first.

8 BOARD MEMBER DIAS: I've been in the HVAC
9 industry 35 years now. So it's really good to hear all the
10 new equipment and everything else being put in. I just
11 want to make sure that or ask if you guys are maintaining
12 it because that's a huge energy waste if you have some
13 issues with HVAC. If an economizer is stuck open, filters
14 aren't being changed out right, the newer equipment
15 somebody might not know if you have staff on that go to
16 maintain it, you might not know how to check a fault
17 detection or whatever it is.

18 And so is there funding for that in your school
19 districts?

20 MR. MCGUIRE: All schools have routine restricted
21 maintenance accounts, 3 percent of the budget. Most
22 schools are funding that at that level. And that's where
23 it comes from. Unfortunately that is not enough. And
24 getting highly trained HVAC technicians in school districts
25 is difficult based on what's going on in the economy. And

1 that you can make more money somewhere else, so we've had a
2 difficult time finding qualified HVAC technicians to be
3 able to do that work. But it's a continual struggle. Then
4 we have air quality issues that we've got to change out
5 more filters more often, as we said with the fires.

6 So absolutely every district is doing it, but
7 they're doing it to all different levels. And some
8 districts don't have HVAC technicians at all. They have to
9 contract out with other school districts from the largest
10 that have lots to small tiny ones that have none. So it's
11 going to be everything in between with 1,000 school
12 districts and 10,000 schools.

13 CHAIR GORDON: Barbara?

14 BOARD MEMBER LLOYD: So my question goes back to
15 something that I think it was Darin mentioned the
16 benchmarking data, and I'm wondering whether others feel
17 like having a robust and readily accessible set of
18 benchmarking data, whether it be regionally or statewide
19 would have a material impact on your ability to do even
20 more, or whether that's just a nice to have?

21 MR. KAESTNER: I think that's going to be up to
22 each district, but I think for us it's somewhat of a nice
23 to have, because we have this 2040 goal that we're working
24 towards. And EUI is kind of the target we're using to
25 decide if we're effective or not and if we've reached the

1 goals for any particular building.

2 We have been pushing the Public Utilities
3 Commission to provide their water and electricity data and
4 for PG&E's (indiscernible) gas data. So it is helpful in
5 identifying locations where we're currently wasting energy.
6 But in terms of making decisions around Prop 39 work since
7 we as a district tend to piggy back on existing work, we
8 have not used benchmarking to decide where do we need to go
9 next. Because where do we need to go next is determined by
10 other things like deferred maintenance.

11 Again, that's a San Francisco perspective,
12 there's probably other districts that think that way. But
13 as we've heard other districts are doing it differently,
14 where they do focus the dollars on a particular energy
15 project. And then the benchmark data would be very
16 important, because you need to know where you can get the
17 most bang for your buck.

18 MR. VEY: And I just want to add to that, Nik.
19 You're absolutely right. And we find it vital, because
20 it's simple. You've got to know where you're at now and
21 how you compare so that you know how you can improve and
22 how far have you improved. And so having that benchmarking
23 data helps.

24 But just the analysis side, just to be able to do
25 the analysis to say why is the this building so high and

1 where is it wasting energy and what steps do we have to
2 take to make that happen, whether it's going in and doing
3 preventive maintenance or retro-commissioning on HVAC
4 equipment, because the economizer is broken or whatever.
5 But the data usually leads you over to that area, and of
6 course if you had sub-meters then you would even know
7 exactly where it would be, and then you could even focus in
8 and laser beam the problem. So I just wanted to add that
9 to what you were saying, Nik.

10 MS. FERRERA: This is Anna Ferrera. I know DSA
11 also, it's not like benchmarking, but they did their seven
12 by seven by seven, where they had you know different
13 schools and then they put in different types of energy
14 measures. And so that the goal was that schools could then
15 pick and choose and take a look at maybe the same climate
16 zone or something like that. I don't know what kind of
17 progress they've had with that but I think because every
18 school is different, they really do kind of look inward.

19 But the other thing that we've been talking about
20 also are looking at energy to get to your issue too, David,
21 is this look at five-year master planning and maybe looking
22 at having energy as a component of that. So that you're
23 checking and you're putting in different projects over time
24 from a planning perspective, but there are always things
25 that happen or things that influence. But it's good to be

1 able to look at those things from a longer-term
2 perspective.

3 It's just we've had this funding come. We never
4 knew how much would actually be in any given year. And it
5 took us a while to get started. And all of it's been input
6 on a lot of what every school does.

7 MR. KAESTNER: Quick piggy back on that, we're
8 expecting that during the modernization process we would do
9 an energy -- basically a ZNE assessment, an energy model
10 for each one of our buildings to help us inform which
11 measures to implement. What we discovered though after
12 about eight of ten of these is that they all basically look
13 the same. That sample chart I showed with the LEDs
14 dropping a lot and the heat pumping essential. So we
15 stopped doing those because in our climate, we felt like we
16 knew what the -- we'd done it on some elementary, some high
17 school, something elses, we kind of knew what our game plan
18 was.

19 I think there is value though, to doing those ZNE
20 assessments. And then once you do a few of them I think
21 you can probably stop and say okay this is our tool of
22 tricks that's going to get a typical San Diego school or
23 Twin Rivers school or L.A. school to become ZNE ready. And
24 I know L.A. Unified has done the same thing.

25 CHAIR GORDON: Great. Thank you. I do want to

1 ask if anyone else on the phone or on the Board who's on
2 the phone or on the phone generally has any questions or
3 comments for either this part of the agenda or for the
4 earlier part where I forgot to call for public comment on
5 the school bus cost effectiveness program.

6 Do we have anybody, Jim, on the phone?

7 MR. BARTRIDGE: So if you have a question on the
8 phone can you raise your hand? It doesn't look like it at
9 this time, but we'll ask again during public comment.

10 CHAIR GORDON: Great. Thank you.

11 Thanks again to all of you, Anna, for all the
12 work you've done with all the school districts, but also
13 Nik and Bill and Darin for all your work. We really
14 appreciate hearing what's happening actually on the ground
15 in these very diverse schools.

16 And just want to say again, and Anna said this at
17 the beginning, that our official Board recommendation to
18 the Legislature last year was also to continue funding the
19 program. We continue to think that is true and we will be
20 doing another report to the Legislature in March. And
21 we'll definitely take everything we've learned as input
22 into that report. So thank you.

23 MR. BARTRIDGE: Okay. And next up is Hoang
24 Nguyen from the Community College Chancellor's Office.

25 MR. NGUYEN: Good afternoon Chair Gordon and

1 fellow members of the Board. My name is Hoang Nguyen from
2 the California Community College Chancellor's Office, here
3 to present today on how we're doing for Proposition 39, the
4 Clean Energy Jobs Act. Presenting on year five, a brief
5 overview of what we did so far; go over our Board of
6 Governor's Energy And Sustainability awards; and presenting
7 today from a district we have Joe Fullerton from San Mateo
8 CCD. He's the Energy and Sustainability Manager. And he's
9 going to tell us about the impact that the proposition has
10 had at his district.

11 I just want to confirm that Joe, are you still on
12 the line?

13 MR. FULLERTON: I am still on the line, yes.

14 MR. BARTRIDGE: Great. Thank you.

15 CHAIR GORDON: Thank you, Joe, for being patient.

16 MR. FULLERTON: It's my pleasure. I'm learning a
17 lot. Thank you, so going over a year five budget from '17-
18 '18, the allocation, 12.8 percent of that went to the Work
19 Force and Economic Development Division and some 5.9
20 million our Facilities Planning Unit. We got the rest of
21 the funding and it turns out the district, we allocated
22 38.9 million to this system and 1.58 million goes to our
23 consulting contract. This consulting contract's a little
24 bigger than prior years, mainly because we extended it out
25 to a year-and-a-half to help close out the program.

1 For the projects that closed out this past year,
2 we had 38 districts totaling 139 projects. Total project
3 costs is roughly 28 million. In terms of savings for
4 kilowatt hours is 11.6 roughly. As you can see 1,200
5 kilowatts savings; 328,000 in therms. For the system as a
6 whole, roughly 1.9 million in energy cost savings across
7 the board, from those 38 districts.

8 For jobs, 155 direct job years for training job
9 years and totaling 322,000 direct job hours and almost
10 9,000 apprentice direct job hours.

11 And for the IOUs, they paid out roughly 1.2
12 million in incentives.

13 The energy saved from all this roughly could
14 power 2,200 homes for this past fiscal year.

15 What does that mean in terms of types of
16 projects? Again lighting seems to be the top runner for
17 the past five years being at 60 percent of the projects.
18 In the beginning of Proposition 39 they were mainly outside
19 lighting. Now, we're working towards the actual
20 facilities themselves, from what I've been told so
21 districts are working on the interior lighting for the
22 campuses, the buildings themselves.

23 HVAC, 25 percent controls, etcetera, etcetera,
24 totaling 139 projects; MBCBx/RCx self-generation and other
25 energy efficiency measures. They're on the lower end,

1 mainly because they're longer types of projects, which
2 districts don't seem to have the time to do, mainly because
3 some districts don't get enough money to do the big
4 projects or others just take too long.

5 Our program is based off of one year at a time
6 kind of a deal versus five years as a whole, because we
7 don't really know how much money we're going to get next
8 year. So just don't want to hedge their bet on trying to
9 cover those costs.

10 I told Jim that we had an awards system. And he
11 thought it would be nice to present to the Board what we've
12 been doing for the past several years on it. It started in
13 2012 just like to honor leaders in energy and
14 sustainability efforts. Since 2012 it's evolved from there
15 to what it is now and the different categories we had are
16 in Proposition 39 projects, faculty-student initiatives and
17 a sustainability champion.

18 As you can see in 2012, before Proposition 39
19 took affect we had district leadership, which Citrus
20 College won that one. They helped write a sustainability
21 template that we could share across the system for them to
22 take a look at and just take that and move forward with.
23 As Citrus was writing their own sustainability guide for
24 their district they just took that and helped clear out
25 some of the language and made a generic one that our office

1 could share across the system.

2 For Facilities in Operations, Butte College, they
3 did a solar PV project and that won that year and
4 Faculty/Student Initiatives was from Cuyamaca.

5 In terms of honorable mentions we have seven
6 districts. I would have listed it, but it took way too
7 much screen. In 2013, as Proposition 39 was coming on
8 board we kept the 2012 formatting. Victor Valley won that
9 year as the District Leadership Facilities and Operations
10 from Santa Monica and West Valley took Faculty/Student
11 Initiatives.

12 Not many projects in terms of what's going on in
13 campus with HVAC or LED or anything like that. Most of the
14 projects were something that the districts used mainly
15 guidance for their campuses versus actual projects.

16 That all changed in 2014 when Proposition 39
17 really kicked into gear and districts were completing out
18 projects. We started getting projects for campuses and
19 buildings themselves. Retrofit Project Winner, Copper
20 Mountain won that year for a campus-wide exterior lighting
21 retrofit, Commissioning Project at College of the Desert
22 for the RCx project they had at the library, Cañada College
23 at San Mateo Solar Photovoltaic Installation, Imperial
24 College, Gym Boiler Replacement.

25 We kept the Faculty/Student Initiatives because

1 that a good one between just to get the students involved
2 on the campuses. So Skyline won that year for their Green
3 Gorillas, it's a waste diversion that the students came up
4 with, mainly a recycling program for the campuses. And the
5 sustainability champion for that year was Fred Harris.
6 Fred retired and moved on to a district and he's been the
7 front runner for the system in terms of being sustainable
8 across the 72 districts.

9 As we roll into 2015, we evolved it even further.
10 There was no distinction between small and large districts
11 in the way we gave out awards. So this year we started
12 splitting up between large and small. A large district I
13 believe is like 20,000 FTS (phonetic) versus the smaller
14 portion of like zero to 20 FTS for small districts, I
15 believe.

16 Mt. San Antonio won that year for a Central Plant
17 Tie-In. Sequoias won for Exterior Lighting Retrofit as a
18 small district. Retrofit winner Coast CCD for Interior.
19 And the commissioning was Rancho Santiago. For that year,
20 we didn't have any submissions from the Faculty/Student
21 Initiatives although we sent out plenty of emails, but
22 that's just like a submission based kind of on award.

23 For that year we had Fred Diamond from Citrus
24 College as a sustainability champion. He led the front on
25 the sustainability template that you saw earlier back in

1 2012. And he continues to move and push the system into
2 being energy efficiency sustainable.

3 And in 2016, no real changes. We had less
4 projects in terms of commissioning. We had, I think
5 commissioning projects were taken off the board for list
6 and we didn't have any renewable energy winners that year,
7 but everything stayed the same, large districts, small,
8 Rancho Santiago for the Interior Lighting; Solano for the
9 Exterior, for a small district. Retrofit projects winner
10 was Long Beach CCD with their HVAC. In terms of the
11 Faculty/Student Initiative that year we had Marina Elena
12 Anguiano from Butte, they have a MESA Sustainability
13 Program, which is pretty fascinating. That year also for
14 Sustainability a Champion we had Ken Albright leading the
15 charge for the system.

16 For 2017, we evolved even further. We added the
17 medium district category. Bringing up more of a fair
18 playing field, you know, just to bring out the small,
19 medium, large across the board. Coast won that year,
20 Palomar for medium. Solano won again for being a small
21 district. Retrofit winner was Butte-Glenn for their EMS
22 upgrade. The Commissioning Project came back and I guess
23 they're finished off with Cerritos RCx at Math/Science
24 Building.

25 Renewable energy winner was Cabrillo for a Solar

1 Thermal Pool Heater. Mark Padilla of Chaffey for Living
2 Lab. And for the energy sustainability winner that year,
3 we had Joe Fullerton, who is on the phone. He helped out a
4 lot over the past few years with the system, a lot of great
5 insight into what we can do as a system to move forward and
6 be sustainable.

7 So for all our funding that we have allocated
8 throughout years one through five, it has all been
9 encumbered by the districts. We're in the process of
10 trying to close them out by June 2019. Years four and five
11 projects have become more complex, so they take a little
12 more time to try to complete.

13 As far as the DSA reviews have been longer, so as
14 we move forward and possibly get future funding for this
15 program or some variant of it we want to take that into
16 consideration. Because a lot of districts are having a
17 hard time trying to move from one year to the next when DSA
18 reviews are taking longer and longer for their projects.

19 And we hope we'll have the Citizens Oversight
20 Board Report next year for that as well. Just to say that
21 districts have definitely appreciated it, the funding to do
22 energy efficient projects on their campuses. I get that at
23 least once or twice a month via phone call or email. So
24 moving forward if we could advocate for more funding,
25 either the Board or let our office know, we could

1 definitely help out in doing so.

2 Especially with ZNE on the table, EOB-1812
3 (phonetic) we're starting to tackle that in trying to
4 figure out to write a guide for the system, but as
5 (indiscernible) mentioned definitely a lack of funding at
6 community colleges, so a lot of them are struggling and
7 kind of wary of trying to meet those deadlines.

8 As for Workforce and Economic Development
9 Division, they're a different unit. They have six sector
10 navigators that are scrambling to get us data. I think it
11 was mentioned in the year one report that they're about a
12 half-year lag behind our program, mainly because they've
13 got to go out and get contracts with their such navigators
14 to go out and oversee those districts. But any information
15 that you would want from them, their contact's right here.
16 Javier Romero, he's the Dean; and Nicholas Esquivel, he's
17 the specialist on that side of the program. And hopefully
18 they'll get us information before we send in the report
19 either -- in January, I believe.

20 And with that I have Joe Fullerton to present San
21 Mateo's projects and how Proposition 39 has helped them.

22 MR. FULLERTON: Good afternoon everybody. I just
23 want to do a quick sound check everybody can hear me just
24 fine.

25 CHAIR GORDON: Yeah. We can hear you.

1 MR. FULLERTON: Wonderful. Thank you so much for
2 having me and for taking the time learning a lot today,
3 especially from the K through 12 organizations, lots of
4 really good work going on there. And really excited that
5 there's this place where we can talk about these successes
6 and think a little bit more about what this could look
7 like, moving forward.

8 I don't have any slides for you. But normally
9 you'd see me in person, kind of walking around the room and
10 moving my arms a lot. But over the phone, just to give you
11 a little introduction to SMCCD, and I guess before I even
12 start, we do need more of this funding. It's really
13 essential and has driven a lot of our energy efforts over
14 the last couple of years.

15 The SMCCD, the San Mateo Community College
16 District, is a three-college district. We have about 82
17 buildings, 2 million square feet of space, about 25,000
18 students and 2,000 employees and we have roughly 150,000
19 visitors to our campuses each year in this district.

20 And really we run a 24/7, 365 operation with lots
21 of night classes, custodian operations happening at night,
22 events all over the place on all three of our campuses.
23 And so it's very rare that we have any significant periods
24 of shut down with the exception of spring break, winter
25 break. But our operations are still in place and we're

1 still hosting events and everything is still up and running
2 for the most part.

3 We are fortunate to reside in one of the
4 wealthiest counties in the nation, as some of you may know,
5 San Mateo County is perennially right up there in terms of
6 the cost of living and all those things. And we've been
7 especially fortunate in our district to pass three bonds
8 over the last 20 years that total over a billion dollars,
9 as recently as 2016 for \$400 million.

10 Even with that funding, and even with the
11 affluence, we still have lots of challenges, lots of
12 deferred maintenance. They are 1960s era campuses, so of
13 our existing buildings are at or near the age of complete
14 capital renewal, in many cases.

15 And as some of the presenters before me
16 (indiscernible) actually some of our older buildings are
17 some of the most efficient, because they don't have the
18 HVAC equipment in them. And as the world continues to warm
19 and we are faced with increasing resilience challenges
20 we're looking at different ways not only to heat, ventilate
21 and air condition those buildings, but also how to protect
22 them from things like wild fires and earthquakes. And
23 really be a place where the community can come feel safe to
24 go in case of one of those emergencies.

25 And the overriding tide of sea-level rise is on

1 our doorstep here in San Mateo County as well in California
2 will actually be the most economically impacted county in
3 all of the states. So we're looking at that. All those
4 things in the lens of gosh what can we do from energy
5 sustainability front to make sure that not only are we
6 responsible citizens, but we're taking the measures
7 necessary to address the needs of our future students.

8 And Prop 39 has really been essential to that.
9 In fact, we've not only been involved with some of the
10 award winning projects and I, myself have been fortunate
11 enough to be recognized for leadership. But we've been
12 fortunate enough to have an opportunity to help many of the
13 other districts do their Prop 39 projects and act as kind
14 of an internal consultant for the California Community
15 Colleges Chancellor's Office, because we're one of the
16 districts that have somebody like me.

17 There's actually not too many energy and/or
18 sustainability managers in the California Community college
19 system. Out of 114 schools in this system, I know of about
20 maybe 12 or 15 specific energy and/or sustainability
21 managers. Most of the other districts with similar
22 colleges have a Director of Maintenance Operations or
23 perhaps a custodial manager, or somebody else on their
24 site, that's doing things like energy management. Just
25 doing things like carbon emissions calculations, if they're

1 doing that at all. That are doing things like trying to
2 (indiscernible) waste.

3 Many of the colleges and districts are not --
4 usually do not have any things necessarily on their front
5 of mind, because of all the other issues that the K through
6 12 centers did so well in summarizing. I will add that
7 some of the existing challenges we have that we're
8 addressing with Prop 39 at least in part, so we've been
9 involved with all project of major exterior lighting
10 project major, interior lighting project now. Our total
11 Prop 39 funding has been about \$2.2 million over the last
12 five years.

13 And these projects have really seeded longer
14 (indiscernible) efforts. We spent on the order of
15 magnitude almost \$20 million over that same time period,
16 including the Prop 39 money to boost efficiency to monitor
17 and meet our equipment, to really evolve the technological
18 systems that we have on our campuses. And that is because
19 one of our biggest sustainability challenges is going to be
20 our demographics. And we have at or near the age of
21 retirement, some even beyond the age of retirement, a
22 workforce population.

23 It's really hard as one of the presenters noted
24 earlier, to hire an HVAC technician or to hire an
25 engineering custodial or something like that, particularly

1 if you are in the Bay Area where pay at Genentech or Google
2 or SalesForce is significantly more than you might make at
3 a local college district.

4 So we're faced with that demographic shift and
5 we're really thinking about how we can store and manage the
6 knowledge that we have electronically, so that the future
7 generations of facility managers such as myself and those
8 that might come after me can use that information wisely.
9 So all of our Prop 39 projects, the few that I've mentioned
10 there, have evolved our information systems as well and
11 made sure that we're able to gather data and collect it and
12 use it to analyze things.

13 And we've taken the extra step, and one of the
14 reasons that I was honored back here to receive the Board
15 of Governors Sustainability Champion Award, was because
16 we're doing this by -- we're utilizing our campus as a
17 living laboratory and our community as a teaching tool for
18 our students. And so all of our Prop 39 projects have
19 engaged students not only in the on-the-ground work, we
20 have a requirement for internships and apprenticeship
21 programs within all of our contracts.

22 All the data and resources that we used, the
23 planning documents, all the -- before, after and during the
24 project we're engaging students, faculty and staff in that
25 process to use that as a learning tool. And that, in and

1 of itself, has taken on a whole other form. And we've been
2 fortunate enough actually to get a grant through the Prop
3 39 fund in the workforce, education and development side at
4 Skyline College. And we're advancing the energy and
5 sustainability field in a group of other colleges around
6 the state in providing high level energy and sustainability
7 training to existing facility managers.

8 The operations of our existing facilities and
9 those that are coming on board, whether in new bonds or in
10 state-funded measures, we really need people to be able to
11 understand and operate those facilities effectively,
12 efficiently and with the highest degree of knowledge into
13 their systems. That's one of the big challenges that we'll
14 continue to face.

15 Our individual sustainability initiative is
16 pretty comprehensive. We're looking at all the things that
17 everybody else is looking at who does this professionally:
18 energy, water, waste, transportation, etcetera. But this
19 piece of tying it back to our educational mission is really
20 critical. So we're really taking a lot of effort and pride
21 and time to do that.

22 But the thing that is going to be essential for
23 us and really even more so for a lot of our sister
24 districts throughout the state is a consistent and a
25 predictable energy fund and something to really maintain

1 the integrity of the work that's already begun. The
2 momentum that we have now could very quickly and easily
3 die. I feel like now that finally year five people are
4 starting to get the understanding of how the systems work,
5 be able to do the submittals, understand the process and
6 the timeline it takes, there's different procurement
7 methods and styles that come along with energy projects
8 that are not familiar to many less sophisticated managers
9 and districts.

10 And so now that people have finally gotten a
11 grasp of that, and they've taken some of the somewhat low-
12 hanging fruit off of the tree in terms of LED projects and
13 solo projects etcetera, that they can kind of climb up
14 higher into the tree with that knowledge, with that
15 expertise and understanding of the systems, and the comfort
16 with the funding mechanism itself.

17 So I think not only is it important to continue
18 and appreciate the value of the existing Prop 39 Program,
19 but to improve upon it so that there's this streamlined
20 even more. The community college system has done a really
21 good job of connection it directly with our utility
22 incentive program funding resources so that it's a one stop
23 application. And that has saved countless hours of
24 administrative issues not only for our district, but I'm
25 sure for many others as well.

1 So again I think it's a really great opportunity
2 as this year five comes to a close in the very near future,
3 that we know to reflect back and say, "Yeah, good job, but
4 what can we do better and what can we do more of," and to
5 really take that to the next level in terms of our long-
6 term strategy to get the ZNE, to get to zero carbon, to get
7 to zero waste, to reduce our potable water usage, and to
8 really get to the leader in the world that California says
9 they want to be and do that.

10 So that's all for me.

11 CHAIR GORDON: Thank you so much, Joe. That was
12 great and really comprehensive. And thank you all for
13 great presentations.

14 It struck me when you were talking about all the
15 different sustainability champion awards. A bunch of them
16 went to Butte College and Butte just let its students back
17 I think at the very end of last week, because they were out
18 for the entire time of the fire. Obviously it was a good
19 reminder of the resiliency issues that are going to become
20 a bigger and bigger part of the sustainability conversation
21 as we heard from the other speakers as well.

22 I think one quick question I had for you is just
23 in general, and maybe for Joe too, is how are you starting
24 to incorporate some of those climate risk numbers and
25 projections into how you're thinking about sustainability

1 across the colleges?

2 MR. FULLERTON: Yeah I mean -- I'm sorry, go
3 ahead.

4 MR. HOANG: No go ahead first, Joe.

5 MR. FULLERTON: Well, I think for us it's kind of
6 hard to hit the crystal ball where the numbers are going to
7 lie, but we're looking at very specific projects that we
8 can do.

9 For example, adding a battery on our existing
10 solar array that would fund all of our emergency for
11 essential lighting needs, maybe some essential air handling
12 needs and some information technology needs for a few hours
13 at a time when the sun is not directly shining. So there
14 is this idea of islanding our campus and being able to
15 store some energy for night time operations. So we're
16 looking at that very sincerely. We have a couple of
17 projects that are in the early feasibility states.

18 We were fortunate enough to actually, at this
19 district, get some California Energy Commission funding a
20 few years back. Unfortunately we weren't able to move
21 forward with that project and have had to give that funding
22 back to do kind a micro grid kind if pilot project here on
23 our campus. And that would have been our first entree into
24 that.

25 And I think more and more districts, as the cost

1 of renewables is coming down and batteries is coming down,
2 even with tariffs and even with a lack of real
3 concentration on this economically, those things are all
4 driving this interest when we see that risk. So for us
5 it's a matter of not only survival in the moment, but of
6 business continuity. And so we're looking at very specific
7 and detailed plans of how we can do that at all three of
8 our campuses.

9 As to what other districts are doing, there are a
10 few that are really leading on this effort. Some of the
11 ones that were mentioned earlier, you mentioned Butte, they
12 have a very extensive solar array. There are folks that
13 could benefit tremendously from some resilience strategy.
14 Matt out there, their energy manager is a really a bright
15 and talented young man who I'm sure given the right
16 resources could make that happen for them. But given the
17 right resources and resourced properly, I should say, is a
18 really tough challenge especially now.

19 MR. HOANG: As for our office we've been looking
20 at figuring out different ways of trying to give out money
21 for certain items like micro grid or battery storage, but
22 in terms of what we have in our office. We're mainly like
23 every other department out there; we're pretty much
24 strapped for cash. So handing out money for certain items
25 like that is kind of like really tough.

1 But in terms of trying to create policy we're
2 trying to move forward towards that and maybe try and
3 incorporate that into maybe capital outlay or scheduled
4 maintenance or something like that. We're trying to figure
5 out different ways of funding those types of projects,
6 without getting anything from the state, but that's rather
7 difficult, considering where we're at. But we're leading
8 the charge to try to complete the ZNE guideline, trying to
9 incorporate that into our sustainability guideline for the
10 districts. And we're trying to update even our Board of
11 Governors energy policy as well.

12 So we're making efforts toward being more
13 sustainable as a system, but it's a long road ahead of us.

14 CHAIR GORDON: Thanks.

15 Other board members questions, comments? Anyone
16 on the phone: Heather, Randall, Mark?

17 BOARD MEMBER

18 BOARD MEMBER MARTINEZ: Thank you, Kate. This is
19 Randall, just one observation about all the presentations
20 that were made, which were excellent. I think Mark Gold
21 raised a question about optimization. And I would
22 encourage, on a going forward basis we think about
23 optimization plans.

24 CHAIR GORDON: Thanks, Randall.

25 Just taking a bunch of notes that I think will be

1 really valuable as we think about some of our
2 recommendations for next year. And that is one of them.
3 Heather, Mark? Anything you want to add?

4 BOARD MEMBER ROSENBERG: Nothing from me, thank
5 you.

6 VICE CHAIR GOLD: Hi, nothing in particular, no.

7
8 CHAIR GORDON: Okay. Great, thanks guys. Glad
9 you -- we actually made it with through the meeting with
10 you guys staying on the phone. This is, I think, a first
11 for this crew. Are there any one else on the phone want to
12 ask a question or make a comment?

13 MR. HOANG: Actually I've got one comment. On
14 January 14th I'd like to invite the Board to our 2018 Board
15 of Governors Energy Sustainability Awards. It's been
16 pushed up for two meetings now, but hopefully we'll have it
17 on January 14th. I'll send the information to Jim to pass
18 to the members.

19 CHAIR GORDON: Thank you. It's always great to
20 hear about the work happening on the ground and I bet
21 that's a great meeting, so thanks.

22 MR. HOANG: Thank you.

23 CHAIR GORDON: I appreciate it.

24 We don't have anybody else on the phone wanting
25 to ask anything, do we Jim?

1 MR. BARTRIDGE: Any others, Eli? Nope.

2 CHAIR GORDON: Great. Well given that, any
3 public comment on anything on the agenda or just in
4 general, in the room or on the phone?

5 MR. BARTRIDGE: Anyone in the room with any
6 comments?

7 MR. FULLERTON: This is Joe Fullerton again. And
8 I just wanted to comment on -- respond a little to the
9 optimization comment. I think, if I remember correctly,
10 the earlier comment had to do a little bit with ongoing
11 maintenance and operations and really how to optimize
12 systems.

13 Some of the big gaps there for a lot of schools,
14 and this is K through 12 as well as the community colleges,
15 is in data gathering. And beyond that there's also data
16 analytics and somebody to actually do that work. So when
17 we're really thinking about optimization we have to take
18 into consideration the demographic shift that I mentioned
19 earlier. A lot of the -- not all but a lot of the current
20 facilities maintenance workforce throughout the state --
21 and this is not exclusive to community colleges or K
22 through 12 at all. But a lot of public facilities have
23 this as well, where a lot of the current maintenance
24 operations staff is not needed to a lot of technological
25 systems that have been developed for modern facilities.

1 That's changing, but not nearly as quickly as our need to
2 reduce our energy use and carbon emissions, our energy
3 consumption and carbon emissions.

4 So it's a really important consideration as we're
5 thinking about optimization that not only are we giving
6 some consideration as to the tools that people will need,
7 the analysis mechanisms and technologies, but also the
8 resources and training that they'll need to understand and
9 take advantage of that information. And then to layer
10 those in a way that when people are utilizing the
11 information in the systems that they perhaps put in place
12 with some technological funding, that there's an actual
13 advantage to them. And there are resources available to do
14 that, almost like a tiered grant system.

15 So I think that the optimization thing is there's
16 a lot of opportunity there. You don't have to look far to
17 see the data in existing buildings to understand that. But
18 there's also just really large challenges, particularly in
19 organizations like ours where at least deferred maintenance
20 is growing, with a lack of state funding and with a lack of
21 a really concentrated effort and a consistently shifting
22 demographic.

23 CHAIR GORDON: So thank you. That's an
24 incredibly important reminder about both the state of the
25 workforce and the state of the facilities. So thank you

1 for that.

2 Jim, do we have anything else before we adjourn
3 today?

4 MR. BARTRIDGE: We have nothing else. That's the
5 end. No other public comments on the phones.

6 And just quick reminder that for folks that
7 January, February, March will be busy for the Citizens
8 Oversight Board. We'll have two meetings, one in mid-
9 February sometime to receive the reports that we're getting
10 from the other agencies. Then we'll have one in March.
11 We'll develop our report in between there and go over our
12 report and some real time editing like last year. See if
13 we can improve that a little bit, but it'll be a sort of
14 fast-paced January, February, March for us for our report
15 due to the Legislature on March 31st.

16 CHAIR GORDON: Thank you.

17 Thanks everybody and the meeting's over. Thanks.

18 (Adjourned at 3:28 p.m.)

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