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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:)
)
Business Meeting)
_____)

CALIFORNIA ENERGY COMMISSION

ART ROSENFELD HEARING ROOM - FIRST FLOOR

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

WEDNESDAY, MAY 13, 2015

10:05 A.M.

Reported by:
Peter Petty

Commissioners Present

Robert Weisenmiller, Chair
Karen Douglas
David Hochschild
Andrew McAllister
Janea Scott

Staff Present:

Rob Oglesby, Executive Director
Kourtney Vaccaro, Chief Counsel
Alana Mathews, Public Adviser
Shawn Pittard, Public Adviser's Officer
Harriet Kallemeyn, Secretariat

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P R O C E E D I N G S

MAY 13, 2015 10:05 a.m.

CHAIR WEISENMILLER: Good morning. Let's start the meeting off with the Pledge of Allegiance.

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

CHAIR WEISENMILLER: Good morning. Just to remind people, on the agenda Item 2 -- we have no committee appointments today and Item 4 is also pulled.

So, let's start with the Consent Calendar.

COMMISSIONER MC ALLISTER: I'll move the Consent Calendar.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: The Consent Calendar passed five to zero.

Let's go on to Item Number 3, Alternative Water Supply for Power Plant Operations. Jeff.

MR. OGATA: Good morning, Chair Weisenmiller and Commissioners. My name is Jeff Ogata, I'm an Assistant Chief Counsel.

And today I'm requesting your consideration and approval of an order that would delegate to the Executive Director the authority to approve amendment petitions filed

for the purpose of securing alternative water supplies necessary for continued power plant operation.

As you know, Section 1769 of our Title 20 regulations allows power plant owners to file a petition to request amendments to the certifications that involve project design, operation or performance requirements. These petitions are evaluated by staff and then brought to the Commission for approval when changes to conditions of certification are necessary or when environmental impacts are identified.

You're also aware that Governor Brown issued Executive Order B-29-15 on April 1st, 2015, and that it contains directives regarding the drought emergency. Directive 25 requires the Energy Commission to expedite the processing of all petitions for amendments to power plant certifications issued by us for the purpose of securing alternate water supplies.

It further states that the Energy Commission may delegate amendment approval to the Executive Director.

The proposed order does not reference Directive 26, but I am mentioning it for the public's information.

Directive 26 states that the California Environmental Quality Act in implementing regulations are suspended with respect to approving water supply amendment petitions until May 31st, 2016.

So, at this time I ask that you consider the proposed order and vote to approve it.

CHAIR WEISENMILLER: Thank you. We have one public comment, Jeff Harris.

MR. HARRIS: Good morning, Commissioners, glad to be here. I'm Jeff Harris, on behalf of Ellison, Schneider & Harris.

This is an important item for a lot of our clients, so I'm not here on behalf of any one client today, but kind of a group of folks with common interests here. And one of the things we're going to be asking is to make sure there's sufficient flexibility in this process. I think that that's an important thing, that there not be any rigid processing requirements or rigid cutoff dates, and that you consider these requests all on a case-by-case basis, because they're all going to be very fact-specific as you move forward.

We're in the beginning of what may be a multi-year drought, so you may not be seeing people this year, but you might start seeing people next year and the year after, depending on what happens in California.

One condition precedent to being able to secure an alternative water supply is knowing you can use that supply. So, in a way there's a chicken and egg problem here. Finding a supply is often contingent on knowing that

you can be able to use it and being able to use it is contingent on the approvals.

And so, there's a real kind of tension in the commercial setting that I think dictates the need for flexibility in what you're doing going forward in the Executive Director's process here.

Water years differ by states, like some are calendar years, some are fiscal years, State fiscal years, some are Federal fiscal years. It's all over the map. And it takes time to put these deals together.

In addition to that, there's Federal approvals that may lag your process which, again, goes towards flexibility in the implementation of this program. So, we're very interested in seeing that.

There are also some subjective considerations that don't lend themselves to hard and fast cutoff dates, or other rigid rules. And number one would be really communication with your staff. I think that's an important thing.

We've all heard the admonition and my clients are heeding it, that we shouldn't show up the day before we have a problem. And we've worked very closely, for various clients, with your staff. And I want to compliment Mr. Johnson and his staff on their ability to really be discreet in these issues, to work with an applicant without

disclosing more than is required by their public duties. And that's a tough balance for staff. And to date I think everything has worked very well in that connection. But it does show you the need for some flexibility.

There are other subjective factors, like whether you're diligently pursuing alternative supplies, and then there are basic questions about whether applicants have sat on their hands or not. And I think that ought to matter on how you deal with these case-by-case decisions moving forward.

There are various climates across the states and multiple water circumstances across the states, and all of this lends itself to some fluidity, pun intended, in how you handle these water requests.

There's also time to process an amendment. If you decide not to use the Executive Director process, you go back to the regular 1769 process and depending on a whole myriad of factors, those amendments can be processed quickly or they can take some time. Sometimes they take 12, 18, 24 months to process relatively simple amendments.

And so, I guess I want to caution against two extremes. One being sort of a very quick process for approval versus a process that would be a multi-year process that doesn't line up well with the realities of getting water to projects.

Market factors do play in this. As I mentioned before, any time you negotiate the deal and you also have existing contractual obligations that you need to make sure are not triggered by seeking alternative supplies, and there are opportunities for future contracting. But again, those all take some time.

And again, I want to emphasize that the staff has been very good in working with us on these issues. You may hear about some of these things on the dais later than your staff. You will definitely hear about them later than your staff. But I do think that's an important factor.

And then I guess the last thing I want to say is keep in mind that power plants are largely customers. They're not water suppliers, they're not in the business of water. They're like any other industrial or commercial user of water and we need to take a look at conditions that maybe provide some disadvantage to California power plants. And we don't want to disadvantage power plants relative to other water users in the State, relative to non-jurisdictional projects. And, importantly, relative to out-of-state projects which may not face some of the constraints. And I think in the larger EIM market that's an important thing.

My time has passed, at least here, so I'm going to go ahead and stop. Thanks.

CHAIR WEISENMILLER: Thanks. First, Jeff, any responses?

MR. OGATA: Mr. Harris has, I think, stated a number of concerns that we are aware of. We certainly understand the purpose of this directive and emergency order.

I think staff is going to use its best judgment in terms of how we handle these cases. And as Mr. Harris pointed out, we typically do this on a case-by-case basis.

So, I think, you know, we'll be flexible and we'll be certain that what we're doing is in the interest of the people of California, and we'll certainly carry out the Governor's directives.

CHAIR WEISENMILLER: Great, thanks.

MR. HARRIS: I forgot to thank Mr. Ogata, who's been speaking with me on these issues, too. So, thank you.

CHAIR WEISENMILLER: Okay. And I'm just going to say early on, as this whole crisis started unfolding, Felicia Marcus made the comment to me, and this is private, but anyway she was amazed how few water lawyers understood the water law and by that indicated we want sprinting quickly to come up.

And, certainly, my general advice to you and your clients is to make sure exactly where their water supply fits in the State water law and curtailment situation,

since it's moving along pretty quickly there.

Obviously, when this came up or when the Governor started preparing the Executive Order, one of the things I was told was to think about not just this summer, but also next summer. And we have, obviously, the concern that the drought is the new normal and that we could be facing another year or two.

And so, I don't think we're as concerned on water issues with the power plants this summer, but certainly looking, if it continues for another year or two, you know, we really wanted to have this tool to go forward so that we could move in a timely fashion.

The reality at this point is our compliance siting load is at an all-time high. And it's sort of cumulative over time, every time we permit something. And, in fact, we've been getting some of the plants now starting to retire and we're dealing with the de-commissioning.

So, the bottom line is that's an area with a lot of work, so just trying to make sure we have the flexibility here.

COMMISSIONER DOUGLAS: I just wanted to comment, briefly, and first thank Jeff Ogata and the step division staff for putting this forward. It took a lot of work and effort, and I think the product is really good. And it is very important. It's important for us to be able to

respond nimbly, given the emergency situation and given the drought.

And as the Chair just said, it is going to be particularly important to the extent that the drought conditions were to continue beyond this summer and into the future.

So, I'm glad to see this on the agenda today and, obviously, it's got my full support.

So with that, I move approval of Item 3.

COMMISSIONER SCOTT: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: Item 3 passes unanimously.

Let's go on to Item Number 5, which is Public Domain California Building Energy Code Compliance Software-Residential, CBECC-RES Version 4.

Larry Froess, please.

MR. FROESS: Good morning Chair and Commissioners. My name is Larry Froess and I am a Senior Mechanical Engineer in the Building Standards Office of Efficiency Division.

I'm here today requesting your approval of CBECC-RES Version 4, as compliance software for the 2013 Residential Standards.

The CBECC-RES software was updated to include new

features and to correct several known bugs. The new features include allowing the modeling of separate boilers for hydronic space heating and for domestic hot water heating, and improved compliance processing speed which is almost twice as fast as Version 3.C.

This version of CBECC-RES also corrects several software bugs and reporting errors primarily relating to addition and alternation modeling issues, and HERS reporting errors for mini-splits and for duct work under certain conditions.

All of these changes constitute a major change in the Compliance Manager. As specified in the 2013 Residential Approval Manual, the alternative calculation methods of private compliance software vendors, which includes Energy Pro Version 6.5, Right Energy Title 24 Version 1.3, must update their compliance software and provide the Commission with an updated copy of the software and user's manual within 45 days from today, which would be June 26, 2015.

But to make this as straight forward as possible for the compliance and enforcement communities, all permit applications made on or after August 1st, 2015 must use the new version of the software and all previous versions of residential compliance software shall expire on August 1st, 2015.

If you choose to approve this item, you will be also approving the decertification of all previous versions of residential compliance software and approving a resolution that provides delegated authority to the Executive Director to make future changes to the software, as necessary, to ensure that it accurately estimates building energy use and correctly implements the performance compliance approach of the 2013 Residential Standards.

It also authorizes the Executive Director to rescind approval of previous versions of CBECC-RES and alternative calculation methods that incorporate outdated versions of the Compliance Manager.

Thank you and I'm available to answer any questions.

CHAIR WEISENMILLER: Thank you. Anyone in the room or online have comments?

So, apparently not, let's turn to the Commissioners.

COMMISSIONER MC ALLISTER: Yeah, so thanks for the update. This is necessary and I don't think there are really any flags from my perspective on this. It's a standard update that's fixing things that stakeholders brought up. It reflects sort of our due diligence and our improvement of the software over time, incrementally, as is

necessary, and I think is really kind of a standard operating procedure for us here, adding functionality and really sort of putting into practice what discussions have revealed as necessary.

So, I'm fully in support of this item. All right, so I will move Item 5.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: Item 5 passes unanimously.

Let's go on to Item Number 6, Appliance Efficiency Enforcement Rulemaking. John.

MR. NUFFER: Good morning Chair Weisenmiller and Commissioners. I'm John Nuffer with the Appliances and Existing Buildings Office. With me is Galen Lemei, with the Chief Counsel's Office.

We are here today asking you to consider adopting revised appliance efficiency enforcement regulations. These regs would establish an administrative process for imposing monetary penalties for violations of the appliance efficiency regulations, including appliance efficiency standards.

The revised regulations -- before you address -- I'm sorry, the revised regulations address technical issues, only, raised by the Office of Administrative Law in

its review of the proposed regs.

The scope and effect of the revised regulations are substantially similar to that of regulations previously adopted by the Energy Commission on November 17th, 2014.

As you may recall, the Energy Commission adopted appliance enforcement regulations at the November Business Meeting. The adopted regulations include a change from the original 45-day language that was published on August 25th, 2014. The change related to the manner in which a notice of violation must be delivered.

The revised language requires that notice of violation be delivered by certified mail, registered mail, or by other means that ensures a notice is actually received.

This language was added after the 45-day public review period to be responsive to stakeholders.

The Energy Commission did not submit this language for any further review and comment because it found the change to be nonsubstantive pursuant to Government Code Section 11346.8(c), and Section 40 of Title 1, of the California Code of Regulations.

After adopting the regulations in November, with this additional language, the Energy Commission prepared a final statement of reasons and submitted the final rulemaking package to the Office of Administrative Law on

March 2nd.

The Energy Commission subsequently withdrew the regulation from consideration on April 13th, based in part on OAL's concern that the change was a substantive change from the original 45-day language. Thus, requiring another 15-day public review period before adoption.

OAL also expressed concern that Section 1609(b)(3)(b) lacked clarity because it combined two of the statutory factors required to be considered in the calculation of monetary penalties. These factors are the persistence or history of violations and the number of violations.

On April 23rd of this year, to address the concerns of OAL, the Energy Commission published revised regulations or 15-day language. In addition to providing an additional 15-day public review for that language, added to Section 1609(c), related to notices of violation, the revised regulations separate the history of past violations from current misconduct and make clear that the history of past violations may only include seven years.

The 15-day language was available for public review and comment for at least 15 days, as required by Government Code Section 11346.8(c), and was sent to each person with an interest in the rulemaking as required by Section 44 of Title 1, of the California Code of

Regulations.

We received comments from the Natural Resources Defense Council, the Association of Home Appliance Manufacturers, the IOUs, several parties representing the pool and spa industry, and Steve Euler, a private citizen.

The only comments specifically related to the 15-day language were from NRDC and AHAM. Now, they support the added language to require notices of violation be sent by certified or registered mail, or by other means that ensure notices are actually received.

The other comments were either comments we've seen and considered before, as the regulations were being crafted, or are not within the scope of this rulemaking.

We gave careful consideration to all of the comments and are not recommending any changes to the 15-day language before you.

We will include a response to each of the comments in the final statement of reasons.

Commissioners, if you choose to adopt these revised regulations, we will prepare a revised rulemaking package for submittal to the Office of Administrative Law. The reviewing attorney at OAL has agreed to expedite his final review so that the regs could get published by the Secretary of State by May 30th. With OAL's approval, the regs would take effect, as planned, on July 1st.

That concludes my presentation and we'd be happy to answer questions.

CHAIR WEISENMILLER: Great, thank you.

I believe we have two comments. One in the room and one on the phone. So, let's start with Gary Fernstrom, in the room.

MR. FERNSTROM: Thank you, Commissioners, staff, interested parties. I'm Gary Fernstrom. I'm representing the California Investor-Owned Utilities.

We very much appreciate the Legislature granting the Commission the authority to improve its enforcement of the appliance efficiency regulations. And we appreciate the hard work of staff over the last couple of years developing the detail language for this enforcement regulation.

We do have a concern, however, that the way the regulations are presently worded they would make enforcement for application-specific appliances, such as regional split system air conditioners, commercial and residential faucets, and pool pumps and motors non-enforceable.

Let me give you an example. The regulations state that any appliance not listed in the appliance database would be in violation of this enforcement rulemaking. And at present, swimming pool pumps and motors

are regulated, but swimming pool motors are not reported to the database. And, furthermore, I understand from the regulatory affairs representative of the Regal Beloit Motor Company that staff told them that they were not to report motors to the database, and there is no space in the database for the reporting of motors.

So, after the effective date every pool pump motor sold in California would technically be in violation of the regulations.

We have other comments that we have submitted but, for the sake of brevity, I'm not going to go into them now. Thank you.

CHAIR WEISENMILLER: Thank you.

Any other questions? Okay, I believe we have Kevin Messner in the room?

MR. GOCKEL: Yes, sir.

CHAIR WEISENMILLER: Actually, I think in the room, but go ahead.

MR. MESSNER: Yeah, hi, this is Kevin Messner with Political Logic. I represent the Association of Home Appliance Manufacturers.

I want to first off thank you. We support, as John stated, the addition of the certification mail and that's something that we were pushing for, and thank you for listening to us on that.

Not so enthusiastic about listening for another suggestion that we had and that's a cap on the penalty. And I know it's kind of déjà vu all over again, we've been through this before, but just one last plead for sense of good government that some kind of cap on the penalty is justified just to prevent future governmental overreach. You all may not be on the Commission in years to come, so some type of cap that's rational, that's what the Product Safety Commission has for health and safety. And we're suggesting $500,000, but a million, ten million. There's got to be some kind of cap so that a billion dollar potential fine is not hanging over the head of an engineer who signed a certification report and maybe did an error of some sort.

So, we'd urge you to please, please consider some type of cap on the penalty. Thank you.

CHAIR WEISENMILLER: Thank you.

Anyone else in the room?

Let's go to the party on the line?

MR. GOCKEL: Yes, thanks very much. My name's Gary Gockel. I'm a pool energy contractor. The point I'd like to make is that it does not reflect relevant provisions of the appliance curve. In the appliance there, there's actually a portion in the pool code that we've been observing since 2008, regarding energy efficiency pumps and

motors.

And the existing being considered for adoption doesn't address the compliance with its own requirements that are in the same code. And failure to do this would essentially negate the work that we have been doing since 2008 in trying to make swimming pools more energy efficient.

Currently, residential swimming pools in California consume -- power at 6 medium-sized power plants, and we're trying to reduce that substantially over the life of the pumps and motors.

But not keeping the language and not addressing, you know, the compliance aspects for specific requirements in California all of our work will be negated, and that people will no longer even think about energy efficiency because, as written, noncompliant motors and pumps could be used without being in violation of the law.

And so, we strongly recommend that you not go with this language and please consider adopting, you know, to address compliance for appliances that have application-specific requirements. Thanks very much.

CHAIR WEISENMILLER: Thank you.

Anyone else on the line or in the room?

Okay, let's go to the Commissioners, then.

COMMISSIONER MC ALLISTER: Yeah, I actually want

to go to staff to get to, primarily, Mr. Fernstrom's comments, and the pool contractor, just about the discussions there behind that issue.

MR. NUFFER: Park of what Mr. Fernstrom just said is new to me. But the issue that I think is being discussed starts our primarily that there are electric motors that there are Federal standards in our regulations for electric motors, and also State standards in our regulations for electric motors, for residential pool pump motors.

Both of those types of motors, in various sizes and powers, can be sold if they meet the Federal or State standards. And that's sort of the crux -- that's the crux of the problem. But there are other technical issues related to how we capture data from manufacturers in one of our tables.

And those issues, we think, are more related to Section 1601 through 1608 of the regulations, rather than this new section, this new enforcement section, 1609. And would probably be more appropriately addressed in another rulemaking related to the standards and the other sections of the regulations.

COMMISSIONER MC ALLISTER: Okay, so I want to unpack this a little bit. I'm not sure we've thought this -- or we've got sort of all the pieces here, but I

think I agree with what you just said.

I guess, just to get clarity, I think we're talking about replacement pool pump motors, right? So, it's sort of repair, replacement, not -- well, the initial installation of the system would be covered by new construction, Title 24, et cetera, right.

So, and then I also understand that pool pumps are in the OIR from 2012 that we're working through all the issues on, right, or that we're working through the various categories systematically. I think I see Ken nodding.

So they are, in the Title 20 realm they are actually on the docket, right. So, that's -- I'm seeing head nodding. So, I think that's right.

So, really, the question here is whether this issue is for today or whether it resides properly in a different place.

So, Gary looks like he wants to respond to that.

MR. FERNSTROM: Thank you for the opportunity to respond. It isn't just about motors. Let me, as quickly and concisely as possible, try and explain what the difficulty is.

If I go to a pool retailer or as a contractor to a pool wholesaler, available to me off the shelf is a two-horsepower, single-speed pool pump. Yes, it has a motor attached and the California regulations go primarily to the

motor.

I can buy that product legally if I utilize it on a commercial pool or for a non-residential filtration application, such as a waterfall, a water feature, a fountain.

However, if I'm buying that for application in a residential filtration application, it is not allowed by the regulations.

So, by citing whether these products are listed in the database only is not a sufficient differentiator with respect to the application sensitivity. We need to also not only require that these products be listed, but they be consistent with the language of the regulations.

And if we were to make that simple modification, then pool pumps would be adequately covered. But as it exists now, the regulations would have these pumps listed and they could be purchased for any purpose and that would make the regulations non-enforceable, in our opinion.

COMMISSIONER MC ALLISTER: So, let's see, I guess I mean one problem here is we do actually, you know, live in a democracy. I'm sorry. So, I mean people -- so, I guess Galen looks like he wants to say something. But I'm wondering what doable, pragmatically doable fix for -- I mean, how would you align the -- you know, make sure that somebody is Boy Scout, on their honor, to install it in the

right place. I mean, that sounds like it's a little bit of a tricky thing to navigate.

MR. FERNSTROM: Well, Commissioner, they're your regulations, which you have adopted. Adding the simple word "and" -- "must be listed in the appliance database and in compliance with the regulations" fixes your regulatory authority such that you would then have regulatory authority.

The issue of how this would be enforced is another issue. And we recommend that consumers and contractors purchasing these products simply sign a statement when they purchase them, and leave it with the vendor, stating that they're going to use it on a legitimate application.

COMMISSIONER MC ALLISTER: So, that's the kind of complexity that I think I would be hoping to avoid, in fact, you know, a new set of paperwork, basically, that we have to incorporate in our processes.

But I wanted to go back and see, Galen, did you want to say something about this?

MR. LEMEI: Yeah, I did. I wanted to address one statement that Mr. Fernstrom made, which was that the current regulations prohibit the use of certain appliances in certain applications. I'm not sure that that is a factual statement of the effect of the current regulatory

scheme.

Second, I wanted to point out that enforcement is, in fact, the subject of today's hearing and today's regulations. And the regulations that are before you create a general process for the enforcement of the Appliance Efficiency Standards, of the Appliance Efficiency Regulations, and for violations of the Appliance Efficiency Regulations without reference to any particular appliance.

What I understand the recommendation to be is to create a new, substantive requirement that would create a violation -- will require a verification that the appliance is going to be used in a particular manner and that the appliance -- and the violation of that verification will create new violations for certain particular appliances, including pool pumps. Faucets were also mentioned.

I wanted to say that such a change is not within the scope of the current regulation before you. Not within the scope of the notice of proposed action.

This is something that would be appropriate, potentially, for a separate rulemaking under Title 24 or, potentially, under Title 24 since it actually goes to end use. But in my view, it is beyond the scope of the currently proposed action.

MR. FERNSTROM: If I could respond?

COMMISSIONER MC ALLISTER: Go ahead.

MR. FERNSTROM: The regulations state that a residential pool pump or motor may not be sold for residential in-ground filtration application if the use exceeds -- meets or exceeds one total horsepower. So, that's the language in the regulation.

The enforcement language, the way you've written it, says that anyone that offers for sale or sells in California an appliance that is not listed in the database is in violation and it stops there. It does not refer back to the regulations, themselves. And both compliant and noncompliant products will be listed and, therefore, it will be impossible, in my opinion, to enforce the regulation the way the regulations are actually written and intended.

COMMISSIONER MC ALLISTER: You're saying that above one horsepower will be listed because they will be available for a different application. And the below-one-horsepower will be listed in the proper place, in your view.

MR. FERNSTROM: That's correct.

COMMISSIONER MC ALLISTER: So, people could buy one and then install it in another --

MR. FERNSTROM: And conversely, if they're not listed, they can't be sold or they'd be subject to violation. But they should be able to be sold because they

are currently utilized.

COMMISSIONER MC ALLISTER: Okay, so I think I -- I think there's a substantive issue here but I really don't think it's something that we need to work on, that we need to solve right here, at this moment, in this particular decision.

Kristen, do you have something to add here?

MS. DRISKELL: I like that I can just lean forward and you picked up on that.

This is Kristen Driskell --

COMMISSIONER MC ALLISTER: Well, I saw you actually get in the chair like you wanted to say something.

MS. DRISKELL: -- with the Appliance and Existing Buildings Office. I just wanted to note that we are aware of a compliance issue with the pool pumps and order, which is why it's in the order instituting rulemaking. And so, it's something that we'll be taking up in an upcoming rulemaking proceeding. And I think that's the appropriate place to address this issue.

MR. FERNSTROM: Compliance -- noncompliance with this regulation is now estimated to be 60 percent by Robert Nichols, the regulatory person for the Independent Pool and Spa Association.

And I'd like to point out that, as Gary Gockel said, that one and a half million pool pumps and motors are

in the field, in California, and they represent, if considered collectively, and at one time the output of six power plants.

So, if we allow, even for a year, a 60 percent noncompliance rate to persist, California is missing out on an enormous energy saving opportunity that we thought were already captured in regulations.

COMMISSIONER DOUGLAS: So, I'm just going to step in at this point and say that while it does sound like an important issue or an issue that we should explore is being raised today, I agree with our counsel that the simple matter of adding the word "and" is not such a simple matter. And it would result in the delay of these regulations coming into effect. And from my perspective, you know, I came into this item expecting to solve a problem we created for ourselves by trying to make another simple change, which was to specify that notice be given by certified mail or some other way of ensuring that notice of violations were received. Which, frankly, was a lot simpler than this.

So, my strong inclination is to recommend approval and to approve the package that's in front of us, and hope that between Kristen Driskell and Commissioner McAllister, our efficiency lead, and the staff team we will pursue this issue to the extent it needs to be pursued, and

address it substantively to the extent it needs to be addressed.

I don't disagree that it's important but I don't -- it doesn't sound to me like an issue affecting one product is so important that the adoption of our regulations on appliance enforcement, appliance standards enforcement should be put off for the amount of time that it would take to resolve it.

COMMISSIONER MC ALLISTER: Yeah, thanks for that. I agree with that assessment.

Well, we have one more comment, actually, so let's get it --

CHAIR WEISENMILLER: We have one more comment and that is online, Paul Lin.

MR. LIN: Hi, can you guys hear me?

COMMISSIONER MC ALLISTER: Yeah.

MR. LIN: So, I think Gary touched on it a little bit. But, you know, for us, we're a manufacturer of electric motors that goes into the swimming pool after market. And currently, there is no database for a motor replacement so I'm not sure how we would be in compliance, as a manufacturer selling motors into the swimming pool aftermarket when there is no database of compliant motors.

CHAIR WEISENMILLER: Staff, any comments?

MR. NUFFER: I honestly don't know why there is

no -- we have a database. I honestly don't know why those particular models aren't being listed. I can certainly find out and get back to you.

COMMISSIONER MC ALLISTER: Yeah, these are -- oh, go ahead.

MR. LIN: Well, I was just going to say that my biggest concern is that if this rule is in effect legally we can't sell any motors because our motors aren't listed, nor can any of our competitors sell any motors in the aftermarket.

COMMISSIONER MC ALLISTER: This vote is not about that, correct? I mean, if this is a problem, then it's been a problem and will continue to be a problem, but it is not actually on the docket today. Is that a correct statement?

MR. NUFFER: Yes.

MR. LEMEI: Yeah, this is an issue that goes to the substantive regulations in 1601 through 1608. The creation of an enforcement, of a process to assess monetary penalties for violations of the enforcement regulations does not relate to the specific problem, the specific substantive issue that Mr. Lin is raising.

MR. NUFFER: And we can certainly work on that issue in another setting.

COMMISSIONER MC ALLISTER: Okay, so this is about

what we're going to do when we find a violation. And the discussion has been more about whether or not a specific circumstance is a violation, and that's not really what we're talking about today so --

MR. LEMEI: Correct.

COMMISSIONER MC ALLISTER: Okay, so I'm comfortable moving forward with this, having raised a flag on the issues that Mr. Fernstrom brings up and sort of lighting a fire a little bit to dig into that, to see what the level of urgency is and to figure out a path forward to fix it.

So, hold on just one second. Yeah, so, you know, Mr. Messner, I want to move on from that issue. I'm comfortable where we're going to land on that if we bring forward this, and vote it out.

Mr. Messner brought up an issue that's about the cap and I just want to make sure that we consider -- I know we considered it on, I think, multiple occasions. In my view, it's not about good government as, you know, self-limiting to some artificial cap. It's really about how we exercise this authority going forward.

And I think, I believe strongly that we will show good government at each decision and don't really feel the need to tie our hands on that in really any way, certainly not adopting a cap.

But I wanted to see if staff had a more in-depth consideration of that.

MR. NUFFER: We did consider that. We looked at other agencies that have caps. DOE used to have a cap, they don't any longer, as I understand.

But the Commission has nine factors that they must consider in assessing a monetary penalty. And that in a way precludes setting a penalty, setting a cap on penalties.

COMMISSIONER MC ALLISTER: And that would include the example that he brings up, for example, where an engineer makes an honest mistake and sort of we dig that up and they say, oh, gosh, we'll fix it ASAP, and they demonstrate that they have good faith in the process. That would influence us strongly, correct?

MR. NUFFER: Yes.

MR. LEMEI: You would be required to consider the willfulness of the violation. You would be required to consider the amount of energy wasted due to the violation.

In that example where the -- and you'd be required to consider the number of violations, potentially even as a mitigating factor when assessed on a per-unit basis in consideration of the amount of energy wasted.

So, you would be required, compelled to consider these other considerations in assessing your monetary

penalty.

And I'll just correct that with the addition, the separation of the two factors, the Energy Commission actually has ten factors to consider, not nine.

COMMISSIONER MC ALLISTER: Right. Okay, thanks.

MR. MESSNER: And just a quick comment. That's all true, obviously. It boils down to, yeah, just trust us, we're the government. And that's -- you all may or are very responsible and that's fine, but this is a -- you're not Supreme Court Justices and don't have life appointments. So, there will be other Commissioners and this is a regulation for the Commission, and so there should be some kind of ability -- I mean, we've just heard an example today where there could be pool pumps and now there's this -- and this happens a lot, which is fine, there's a lot of good ability to work with the CEC when there's a problem for us with the Federal standards, and test procedures and we can say, okay, let's keep working through it.

But when there's an enforcement hanging out there of potentially, theoretically, millions and millions of dollars, it's a whole different scenario where that companies and lawyers aren't going to say go ahead and just sell the pool pumps because we heard from one of the staff, and we got an e-mail, it's okay and we'll work it out on

the next regulations. Because they are liable, now, for a potential fine of unlimited amounts. So, it's a totally different scenario and we just don't -- we need -- there should be some trust from the government that there's not abuse to the systems.

COMMISSIONER MC ALLISTER: Well, I actually don't agree that it just boils down to we're the government, trust us. I mean, we've built in a whole bunch of things that do require us to take mitigating factors into account.

And on the flip side I mean, you know, while I don't think any of your members will go down that, we -- will go down the path, you know, we don't want this to just be seen as, oh, well, the funds, you know, the funds are small enough, they're just the cost of doing business so we're going to plow forward and sell, you know, unregistered equipment or equipment that doesn't apply.

So, you know, there is a responsibility on you and your members to comply. So, you know, I'm certainly not saying that will happen and, obviously, our first line is to help with compliance, and facilitate compliance. And that, I think, will be a good faith effort, you know, a collaborative effort to make sure that the marketplace is in conformance, broadly.

But, you know, you're saying we're the industry, trust us. And so, you know, we have to come down at some

place and I'm comfortable where we are.

COMMISSIONER DOUGLAS: I think beyond that, I'll just say that while I appreciate both your sentiment and your persistence, we really noticed this because we need to bring it back to the Business Meeting because we made a change that you requested. It maybe wasn't the highest on the list, but that's the change we're here to consider today and I think we should fairly quickly move on with it.

MR. MESSNER: Okay, thank you.

COMMISSIONER DOUGLAS: Thank you.

CHAIR WEISENMILLER: I was just going to note that I think I would assume the current Commission will set precedence in this area.

COMMISSIONER DOUGLAS: Yes.

CHAIR WEISENMILLER: Which will impact the Commission over the longer time.

COMMISSIONER MC ALLISTER: Yeah, right.

CHAIR WEISENMILLER: Yeah.

COMMISSIONER MC ALLISTER: Okay, if we're ready, any other comments or anything? Any comments from the room?

So, I will move Item 6.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This item passes unanimously. Thank you.

Let's go on to Item 7, which is Energy Efficiency Standards for HVAC air filters, dimming fluorescent ballast, heat pump water chilling packages and federal updates.

Ken Rider, please.

MR. RIDER: Great. Good morning Chair and Commissioners. I am Ken Rider, an Electrical Engineer with the Appliance Efficiency Program, here at the Energy Commission. I'm here to present to you on Item 7, which is the possible adoption of new energy efficiency regulations for HVAC air filters, dimming fluorescent ballasts and heat pump water chilling packages.

In addition, the proposed regulations contain updates in the amendments designed to align our California regulations with recent changes to Federal law.

The proposed regulations are a model of regulatory coordination in that each of the new regulations is designed to support -- or in support of the Title 24 Building Code.

Air filters ensure the proper operation of HVAC equipment by keeping internal components clean and free of particulate buildup that causes lower equipment efficiency, reduced reliability, and diminished heat transfer.

The proposed regulations for HVAC air filters would require them to be labeled in a way consistent and supportive of Title 24 air filter right-sizing code.

Additional benefit will result when consumers and contractors are able to find and match an air filter's characteristics when replacing an old filter with a new one.

The proposed standards use industry-accepted test methods, developed by AHRI and ASHRAE to determine the minimum efficiency reporting value, also known as MER, the particle size efficiency and air flow resistances for purposes of certification and labeling.

Staff estimates the incremental cost to consumers as a result of labeling will be eight cents a year, for two air filter replacements, with the benefit of right-sizing, resulting in $1.32 in natural gas and electricity energy savings.

Statewide it is estimated that the total energy savings from labeling will amount to 30 gigawatt hours per year of electricity and 5.6 million therms per year of natural gas.

Dimming fluorescent ballasts are devices used to power and enable the dimming of linear fluorescent lamps. The scope of the proposed regulations include dimming ballasts used to power between one and four T-5 or T-8

four-foot linear fluorescent lamps to levels 50 percent or below of full output.

Historically, these types of ballasts have been used in small quantities. However, changes in the 2013 Building Energy Code are expected to increase the use of these ballasts in new construction and alterations.

While Federal standards exist for many types of fluorescent ballasts, these types of fluorescent ballasts do not currently have standards.

The proposed standards are important to closing this gap and ensuring that these devices operate efficiently. The proposed standards would require dimming fluorescent ballasts to meet ballast luminous efficacy, power factor, and standby levels that improve efficiency.

The proposed standards are technically feasible and there are ballasts across major manufacturers and power outputs that meet the standard levels today.

The incremental cost per ballast is estimated to be between $.79 and $1.09, depending on how many lamps they can power, with an expected lifetime dollar savings between $8.71 and $34.58, respectively. So, very highly cost effective.

The proposed dimming fluorescent ballast standards will save electricity at an estimated rate of 388 gigawatt hours per year, for the year 2029, resulting in

emission reductions of .13 million metric tons of CO2 equivalent the same year.

Heat pump water chilling packages are used to chill water for space cooling, as well as heat water for space heating and domestic hot water use. While these products can be used in energy efficient building design, they have been difficult to implement due to a lack of verifiable performance data to use in building inspection and compliance software, as required by Title 24 Building Energy Code.

The proposed regulations would use an industry-accepted test method, ANSI HRI 550, 590, and require product performance certification to the California Energy Commission. This will provide a database of measured performance parameters that can be used to verify compliance and further enable the use of this technology.

The proposed regulations before you today have been revised from the original language in response to stakeholder comments. Changes to dimming fluorescent ballast regulations were made to enhance clarity in response to industry and IOU comments.

Air filter labeling was altered to further meet the needs of Title 24 and to meet requests from 3M to simplify testing.

Several modifications were made to further align

the standards with new Federal regulations, as requested by stakeholders such as AHAM and the California IOUs.

In addition, the water products were removed from the proposed regulations as they were adopted expeditiously by the Energy Commission at the last Business Meeting on April 8th.

The proposed regulations come after careful consideration of all stakeholder comments, including those submitted on May 8th, at the end of the 15-day comment period on the revisions to the proposed regulations.

Staff also carefully considered alternatives and economic impact of the proposed regulations as it developed its recommendation, as characterized in the standard regulatory impact analysis, and summarized in the proposed resolution.

Staff recommends the adoption of the proposed regulations as revised in the 15-day language because it will bring feasible and cost-effective energy savings to the State of California.

This item is divided into subparts A and B. In addition to the rulemaking documents provided to the requirements of the Administrative Procedures Act, the Energy Commission also released an initial study and proposed negative declaration, including a finding of no significant impact under the California Environmental

Quality Act.

The negative declaration was available for the required 30-day comment period and no comments were received.

Staff recommends the adoption of the negative declaration, as well as the adoption of a resolution that would implement the proposed standards.

In addition, staff recommends that the language be adopted with a change to the definition of particle size efficiency. The phrase, also known as particle size removal efficiency, should be removed from the definition of pressure drop and added to the definition of particle size efficiency. And I believe that's incorporated into the resolution that you have before you.

Thank you.

CHAIR WEISENMILLER: Thank you.

I believe we have three comments. Let's start with the room in the room, Charles Kim.

MR. KIM: Thank you, Chair and Commissioners. I'm Charles Kim of Southern California Edison Company. I'm speaking on behalf of California IOUs.

We, California IOUs, fully support adopting proposed measures for energy efficiency regulations. I'd like to take a moment to thank CEC and CEC staff for making these measures possible for adoption. And I know that

there are a lot of collaboration work that has been done, reaching out to various stakeholders, and reconcile all the differences into these proposed regulations.

In particular, dimming ballast is the measure that clearly demonstrate CEC's, therefore California's leadership on energy efficiency. So, I'd like to take a moment to commend all the staff who worked on this particular topic.

And, once again, we support this measure for adoption for regulations. And thank you very much.

CHAIR WEISENMILLER: Thank you.

I guess we have one other party in the room, as I was just reminded, Kevin Messner, please.

MR. MESSNER: Thank you. Kevin Messner, on behalf of the Association of Appliance Manufacturers.

I just want to say thank you for working with us on the technical changes. There's a lot of technical changes for our stuff. And we're very supportive of continuing to doing these changes on a regular basis, which I know from staff that you guys are willing to do, too, and anxious to do. I don't know if anxious is the right characterization, but you guys are willing to do.

So, thank you for working with us. There may be some technical issues here we have with this, we'll look through it some more. But thank you.

CHAIR WEISENMILLER: Great. Great, thank you.

So, let's go on the line, let's start with AHRI.

MS. PETRILLO-GROH: Yes, hi, can you hear me?

CHAIR WEISENMILLER: Yes, we can.

MS. PETRILLO-GROW: Great, thank you. This is Laura Petrillo-Groh. I'm the Engineering Manager of Regulatory Affairs at the Air Conditioning, Heating and Refrigeration Institute.

AS many of you know, AHRI is a trade association representing over 300 manufacturers of heating, cooling, water heating, and commercial refrigeration equipment.

We tracked the development of the 2014 Appliance Efficiency rulemaking very closely and we appreciate some of our comments are taken into consideration. However, there are, as recently as the 15-day language, several comments which have not been taken into consideration and I'd like to raise those issues, now.

While we do appreciate CEC's intent to harmonize, it sounds like, regulations with Federal minimum efficiency standards and test procedures, there is no test procedure to establish rating for the evaporatively cooled computer air conditioners. And we would request that those products be removed from Table C-9, and also references to ASHRAE 127 be removed because they do not cover this evaporatively cooled products.

There are also issues with the data submittal requirements for heat pumps. Right now, there's a required field for average off-mode power consumption and the U.S. Department of Energy has not published a test procedure for that, so no -- we're not going to be able to submit any, upload any forms because there will be a problem with the validation. We will not be able to input any data in this field until there is a test procedure.

Likewise, there's a problem, there's a continuing problem with the data submittal requirements for the residential furnace stands. Right now, that does not go into effect until July 3rd, 2019, Federally. And until that time we ask the CEC to make that, the SER field optional.

But we also continue to have some concerns with the data reporting requirements for air filters and the air-cooled -- and the heat pump water chilling packages.

Thank you very much for allowing me to speak.

CHAIR WEISENMILLER: Sure, thank you.

I think we have one more party on the line.

MR. ROY: Yes, good morning, this is Aniruddh Roy, with Goodman. I would second some of the comments that AHRI has made. We're a manufacturer of light commercial and residential heating and cooling equipment in the USA. And we have some concerns with respect to the

off-mode reporting requirements for central ACs and heat pumps, as well as the reporting requirements of FER for residential furnace fans.

I'll get to the central air conditioners and heat pumps, first. The test procedure has not been issued by DOE and DOE has issued an official statement saying that, you know, that there will be a 180-day period after the publication of a final rule establishing a test method for measuring off-mode electrical power consumption. And that 180-day period will allow the manufacturers to rate their products based on that test and then report those values to DOE.

And then, as far as the furnace fans are concerned, typically, you know, when a Federal standard is set manufacturers have five years. And we believe that rather than making it mandatory, if the requirement is made option, then manufacturers who want to report FER early can do so, but that the CEC should not require that -- you know, this information be reported prior to that date because that might cause some issues. Again, you know, the industry does require some time to get used to the new test procedure, which was recently issued, as well as be able to rate per the sampling plan outlined by DOE. And that's why the five-year period was given.

So, we request that CEC and, of course, the

Commission, the Commissioners consider this request. Thank you.

CHAIR WEISENMILLER: Thank you.

Anyone else on the line?

Okay, so staff, do you have responses to the comments?

MR. RIDER: Yes. So, the regulations that are proposed for adoption today align to the maximum to the Federal proposed regulation. The Feds are busy making several revisions that they've mentioned on the phone today, and we will continue to track them.

Unfortunately, we are not able to adopt things that disagree with what the Federal language says. And for now we are aligned to the maximum extent possible. And that has caused some of the issues that AHRI and this other gentleman, I think from Goodman, mentioned. And we look to the Federal, to the DOE to make changes to address those. And we will continue to track and update our regulations as DOE resolves these issues.

But until they do, we cannot do things that do not align with the Federal requirements.

MR. BABULA: Yeah, I'd just also comment. This is Jared Babula, Staff Counsel.

The AHRI representative said that we had failed to consider their comments. And I just want to be clear

that just because it doesn't end up being a change doesn't mean we didn't consider the comments. Staff did consider all the comments that came in and we are aware of a number of the issues. And a lot of the comments were outside, really, the scope of the specific things we were looking to change in this particular rulemaking, which is dimming ballasts, and the air filters, and so forth.

And so while there was a discussion in the comments about evaporative cooling systems for computer room air conditionings, that's just something that wasn't part of this rulemaking. And it's something that we're aware of and we'll look into further moving forward. Thank you.

CHAIR WEISENMILLER: Okay, thank you.

So, let's turn to the dais.

COMMISSIONER MC ALLISTER: Yeah, I want to thank Ken, and Harinder, and the staff, Jared, for all their hard work on this. I'm very happy to have this coming to a conclusion. I think it's been a lot of work, a lot of back and forth with stakeholders. And, you know, not always agreement on every detail, but I feel like we've come to a good place.

Just to give an example, you know, on the MRV labeling, I hear from -- have heard from a number of contractors out there in the field that just it's a common

sense thing they need to have the label right there, so they know what filter they're installing and whether it's compatible with that HVAC unit. And it actually makes their work more effective because they can install the right filter in the right place.

And before, they would have to go find a place, and go look at a table, and look online, or whatever to know, oh, okay, this model number, what is it's MRV and, you know, that's just inefficient.

So, I think having that kind of information right there for action is a good thing, just to give one example.

I think the technical merits of all of these devices are good, and very solid, and going to save a lot of energy, so I'm happy to move this forward.

Any other comments from anybody? Okay.

COMMISSIONER HOCHSCHILD: Just gratitude that this thorny issue is in the hands of our capable Commissioner McAllister.

COMMISSIONER MC ALLISTER: So, just to put it in context, this is one of a number of kind of flights, if you will, within a larger OIR. So, this is a group of devices that have been grouped together to get through the process and have the stakeholder interactions, and get it to the finish line. But there are other flights coming up within the broader OIR, and many more devices. You know, we open

the computers and monitors once last month and that's got its group of stakeholders. So, each one moves forward kind of on its own timeline and on its own merits. But I'm really glad to have this group to the finish line.

So, I'll move Item 7.

COMMISSIONER HOCHSCHILD: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: Item 7 passes unanimously.

Let's go on to Item 8, which is Trinity Technology Group. Jennifer Campagna.

MS. CAMPAGNA: Good morning, Chairman and Commissioners. My name is Jennifer Campagna, Supervisor for the RPS Unit, in the Renewable Energy Division.

I am here to present Item Number 8 on the Business Meeting Agenda, which is to ask your approval of an IT Master Services Agreement with Trinity Technology Group.

The contract is in the amount of $1,998,950. If approved, Trinity will develop a new database system for the continued implementation of the RPS Program.

For the past several years the RPS staff have been relying on mostly manual procedures in a Microsoft Access database to process the RPS certification applications, and to verify the utilities' verification

data.

The Access database does not have the storage capacity to accommodate the large amounts of data that we handle and expect to handle in the future. And it also does not have the functionality to perform the types of analysis that we need to conduct in an efficient manner.

Our primary customers in the RPS Unit include the POUs, the retail sellers, renewable generation facilities, the PUC, AIR, and other divisions within the Energy Commission.

In addition, this RPS data is used in tracking progress, the IEPR, and other data requests, including those from the Governor and Legislature.

This new database will provide streamlined reporting for our customers and will provide for a much faster turnaround time for staff who are responding to the data requests.

The new database will also provide a user-friendly web-based interface, where our customers can have secure access to their records, and they will be able to manage and update their company contact information and their project data quickly and efficiently.

The new database will replace the manual processes that currently consume staff time and resources. It will allow us to conduct complex queries necessary for

verification of RPS data.

Overall, the efficiency will result in much faster turnaround times of products coming out of the RPS unit. For example, currently, completeness checks for certification applications take around 15 to 20 days, and we expect the new database to take that down to about three days.

We expect the database to be fully operational by November 2016. And that concludes my presentation. I appreciate your consideration of this item and I'm happy to answer any questions. Thank you.

CHAIR WEISENMILLER: Thank you.

Okay, I'm going to turn to the Commissioners.

COMMISSIONER HOCHSCHILD: So, Mr. Chair, this is part of the streamlining and modernization we're trying to do across the Commission. When I first started in this role two years ago, one of the complaints we got from, you know, renewable companies was that some of the issues were taking up to three months. We've worked very hard to get that down to three weeks. This will help us get even closer to three days and I think will be a win/win for the stakeholders and our staff.

So, I'd ask for the support of my colleagues. And I'd move the item, unless anyone has comments.

COMMISSIONER MC ALLISTER: I'll second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This passes five to zero. Thank you.

MS. CAMPAGNA: Thank you.

CHAIR WEISENMILLER: Let's go to Item Number 9, which is Mendocino Land Trust, Inc. And this is Jacob Orenberg.

MR. ORENBERG: Good morning Chair and Commissioners. My name is Jacob Orenberg and I am the Project Manager for this proposed grant to Mendocino Land Trust.

This grant will use $498,040 of Energy Commission funds to purchase and install electric vehicle chargers at ten California State Parks, and two corridor charging sites in Mendocino County.

Each State Park will install two level one and two level two charging ports. And each corridor site will install two level one and one level two charging ports, as well as a DC fast charger.

Mendocino County currently has limited public charging options for electric vehicles, so this network of chargers will allow for improved travel by electric vehicles within the County.

This project was recommended for funding in the

July 3rd, 2014 Revised Notice of Proposed Awards, for Grant Solicitation PON-13-606.

Staff requests approval of Agenda Item 9 and I can answer any questions you may have about this.

CHAIR WEISENMILLER: Okay, thank you.

I believe we have Doug Kern on the line.

MR. KERN: Hello, this is Doug Kern.

CHAIR WEISENMILLER: Please, go forward.

MR. KERN: Can you hear me?

CHAIR WEISENMILLER: Yes, we can.

MR. KERN: Oh, very good. Thank you. Good morning, Commissioners. My name is Doug Kern and I'm the Director of Watershed Restoration for the Mendocino Land Trust. Thank you to the California Energy Commission for this grant award to install electric vehicle charging stations at 12 locations in Mendocino County.

This grant is a great opportunity for our local community, as well as visitors to the Mendocino Coast. Not only are we part of the solution to climate change and the reduction of air pollution, we're bringing economic development dollars to the area, and increasing opportunities for further tourism on the coast. It's a huge positive win for conservation in Mendocino County.

I want to particularly acknowledge Jacob Orenberg, California Energy Commission staff, for his

comprehensive assistance in getting this done. Thank you very much. That concludes my comments.

CHAIR WEISENMILLER: Thank you.

Any other comments in the room or on the phone?

So, let's turn to the Commissioners. Commissioner Scott.

COMMISSIONER SCOTT: I don't have any other comments to add. But thank you, Mr. Kern, for joining us this morning.

I will move approval of Item 9.

COMMISSIONER HOCHSCHILD: Second.

CHAIR WEISENMILLER: Okay, all those in favor?

(Ayes)

CHAIR WEISENMILLER: This passes five to zero. Thank you.

Let's go to Item Number 10, which is Zero Motorcycles, Inc. And Darren, go forward.

MR. NGUYEN: Good morning, Commissioners. My name is Darren Nguyen, from the Fuels and Transportation Division.

I am seeking approval for an agreement with Zero Motorcycles, resulting from the manufacturing PON 14604. The purpose of this solicitation is to encourage the manufacturing of alternative fuel vehicles and vehicle components in California that can reduce greenhouse gas

emissions, displace petroleum fuel demand and stimulate economic development.

The following project will develop advanced vehicle technology manufacturing facility in California that will produce zero emission vehicles.

Zero Motorcycles will design, manufacture and sell high-performance electric motorcycles. Zero's primary goal is to achieve a doubling of its manufacturing capability by the end of the project.

Zero will improve productivity by 25 percent and install a new production line to enable the overall goal of doubling capacity from 4,000 units to 8,000 units per year.

This project will also allow Zero to continue to manufacture competitive products in California with an increase in product at reduced costs.

Thank you for your consideration of this item. Jay Friedland is here, representing Zero Motorcycles, and would like to comment.

CHAIR WEISENMILLER: Please, go ahead.

MR. FRIEDLAND: Good morning Commissioners and staff. My name is Jay Friedland. I'm the Vice-President of Government Relations for Zero Motorcycles.

And it's an absolute pleasure to be here today. And I want to particularly thank the Energy Commission and the Commissioners, especially Commissioner Scott on her

leadership for the ARFVTP program.

You know, and I have to add a special amount of thanks for the work that Darren has done and, in fact, all of the Energy Commission staff over the last few years in terms of supporting Zero Motorcycles.

We've from in 2010, from about 30 people, in 2012, 60 people, and now we're over 110 people. So, we're not Tesla, but we are a large, relatively, electric vehicle manufacturer in the State of California.

Probably more importantly, we've shipped over 5,000 of these motorcycles across the world and that is making a significant impact.

And to give you a feeling about the impact, you know, our bikes, our current bikes get about 460 miles per gallon in equivalent, MPGE, as opposed to the average, regular internal combustion motorcycle getting about 50 miles per gallon. So, it's almost a factor of 10.

So, in terms of petroleum reductions and clearly, also in terms of pollution, and criteria pollutants, particularly, it makes a very, very significant difference.

We also think we're making a difference in the fact that there's a significant amount of industry growth. We've actually, in essence, created and commercialized an industry that did not exist before. And the Commission has played a major role in supporting us in that. From, you

know, in supporting our R&D, to supporting our increases in manufacturing.

To give you an example, Scarlett Johansson is riding an electric Harley Motorcycle in the latest *Avengers* movie, and that would not have happened if this industry hadn't started, and if Zero hadn't had the leadership. And we've actually found that that's actually helping our sales because you can't go buy an electric Harley today, but you can buy a Zero.

(Laughter)

MR. FRIEDLAND: And so, these are very, very fast. They're cool. And, of course, they're environmentally friendly.

And so thanks to -- I also want to add, thanks to our dealer, our motorcycle dealer in Elk Grove, which is just south of Sacramento, we have several of the bikes outside today. So that if you want to come look at them over lunch we'd really enjoy, you know, particularly if the Commissioners want to take a look, any of the staff, and any of the people attending would like to see that.

And we also want to extend an open invitation to come visit our facility in Scotts Valley. It's our headquarters and factory and we would very much, you know, like any of you to come take a look and come down. And if you want to put on your riding gear, certainly, you're

welcome to take a ride, as well.

So again, we want to just thank you for all of your support and really appreciate the capability that you've given us.

CHAIR WEISENMILLER: Great, thank you. Who knows, Tesla may have envy for you for your product placement in the movie.

(Laughter)

CHAIR WEISENMILLER: So, any other comments in the room or on the line?

Then Commissioners?

COMMISSIONER SCOTT: Yeah, I just thank you for coming today. And I would encourage folks to go out and to take a look at the motorcycles. This is a great project, I think, because it does, it sort of shows that we can help seed good ideas and then kind of watch them grow with the money that we are able to invest with this program.

And it's pretty exciting to hear how many Californians we've been able to put to work as the facility expands.

So, I would move approval of Item 10, unless there's other comments.

COMMISSIONER HOCHSCHILD: Yeah, I just want to chime in. I want to thank Commissioner Scott for her leadership to help see successes like this. And Chairman

Weisenmiller, I know you've talked for a long time about the need to reduce emissions in the transportation sector.

It's just interesting to see the sort of electrification blossoming. We also, obviously, are building a factor for electric busses, now, with Protera, who has 300 employees moving into California.

And I, myself, just bought an electric bicycle. I told this story at the IEPR workshop yesterday. So, I have a nine-year-old daughter. I got one of those attachments so she could ride behind me. And there's this guy, we're going up a hill, and there's a guy kind of dressed like he's racing the Tour de France. But I passed him with my kid on the back. He didn't know I had an electric bike, so I felt like --

(Laughter)

COMMISSIONER HOCHSCHILD: But, you know, I just see all of this innovation I think is actually going to continue. And, actually, these industries leverage off each other, the improvements in battery technology, and procurement, and manufacturing. So, it's just really exciting to see success.

And I'm sure offering rides to potential customers, with Scarlett Johansson is a great way to get more customers, so good luck to you.

COMMISSIONER MC ALLISTER: I Have to chime in,

though. Those of us who don't have electric bikes, but who do ride regularly, feel some indignance at --

(Laughter)

COMMISSIONER MC ALLISTER: -- at the little, old lady passing us like she's not even working hard. So, anyway, I'm not sure what that means about my inclination to buy one, but I do think it's great technology that will help really take much more broadly technology that's going to be low emissions.

Again, a lot of people, say, on bicycles that maybe wouldn't otherwise ride them as regularly. And, similarly, you know, there's a factor there that I think can push the marketplace to new places. So, I think it's just really good broad development across the board. So, thanks for your leadership.

So, I'll second.

CHAIR WEISENMILLER: Okay, all those in favor?

(Ayes)

CHAIR WEISENMILLER: This passes five to zero. Thank you.

MR. NGUYEN: Thank you.

MR. FRIEDLAND: Thank you very much.

CHAIR WEISENMILLER: Yes, thank you.

So, let's go to Number 11, which is medium- and heavy-duty advanced vehicle technology demonstration.

Larry, please.

MR. RILLERA: Good morning, Chair and Commissioners. My name is Larry Rillera, with the Fuels and Transportation Division.

I'm seeking approval of five agreements for a total of $14,865,687 resulting from the medium- and heavy-duty advanced vehicle technology demonstration solicitation.

The purpose of the solicitation was to encourage the demonstration of advanced truck technologies in communities throughout California. Field demonstration of these technologies reduces greenhouse gas emissions, displaces petroleum fuel demand, stimulates economic development, and enhances market acceptance, and leads to commercial production and commercialization.

Staff would note that all of the projects recommended for funding will be demonstrated in disadvantaged communities of the State. It is prudent to demonstrate advanced zero and near-zero emission truck technologies in disadvantaged communities so that these communities can immediately accrue the benefits of reduced pollution, and job creation and sustainability.

The following five projects will demonstrate advanced truck technologies in California using zero and near-zero emission technologies with important and critical

fleet partners.

For Item 11.a, Motiv Power Systems will demonstrate three electric refuse and loader trucks in disadvantaged communities in the Sacramento region. The $2.9 million grant's project team includes Rausch and the City of Sacramento.

With respect to Item 11.b, TransPower will demonstrate three heavy-duty electric refuse trucks in disadvantaged communities also in the Sacramento region. The $2.8 million grants project team includes Peterbilt, Waste Management and the County of Sacramento.

For Item 11.c, North American Repower will demonstrate six plug-in, hybrid electric, renewable natural gas armored security trucks in disadvantaged communities of the South Coast Air Quality Management District.

The $3 million grant project's team includes Sectran Security and Efficient Drive Train.

For Item 11.d, TransPower will additionally demonstrate five advanced battery electric port vehicles at the Port of San Diego. The $3 million grants project team includes Dole Fresh Fruit Company and BAE Systems.

The last project, 11.e, TransPower will also demonstrate five heavy-duty electric yard tractors in various disadvantaged communities. The $3 million grants project team includes IKEA and Harris Ranch.

Thank you for consideration of these items. And there are representatives from the companies that are present today. Thank you.

CHAIR WEISENMILLER: Great. So, let's start walking through the representatives. First is Mike Simon from TransPower, if you can please come forward.

MR. SIMON: Good morning Chairman Weisenmiller. Commissioner Scott, it's good to see you again, and the rest of the Commissioners.

We are truly humbled by the show of support that you've given us with these grants. I made the trip from San Diego this morning to thank you, personally, for your support. I'm the CEO and principal founder of TransPower.

I also just wanted to spend a minute or two boasting about our products. They haven't shown up in any movies, yet, but we have achieved some meaningful accomplishments with technologies that were largely funded by previous grants from the Energy Commission. And I wanted to share with you some of what we've accomplished together as a team.

In fact, yesterday we issued a news release documenting the results of testing of our latest generation electric truck, Class 8, 80,000 pound drayage truck, and electric Class 8 yard tractor.

These vehicles were tested on the dynamometer at

UC Riverside a few months ago. And in addition to showing a factor of a 3 to 5 improvement in energy efficiency and cost effectiveness compared to diesel trucks, they also demonstrated a factor of 2 to 3 improvement in efficiency and cost effectiveness over previous generations of electric trucks and tractors that were tested on the same dyno facility in 2011, the year we received our first Energy Commission grant.

So, there's tangible evidence here that your support is moving the state of electric propulsion technology forward and advancing the state of the art.

I think that's something that you should be proud of. We're very proud of. And it is changing the landscape here.

As a result of that the -- as a result of these savings, we are starting to see tangible evidence from fleet operators, including those that were mentioned by Larry, Dole Fresh Fruits in San Diego, IKEA in the San Joaquin Valley. And in addition to those, and I think Larry also mentioned, BAE Systems and Harris Ranch, the largest ranch on the West Coast.

We also -- as I speak today, this morning, we're demonstrating one of our vehicles to Kroger, which is the chain that owns Ralph's.

And we have also have Grimmway Farms is going to

operate one of our vehicles that you're funding, as a defined intermodal right here in Sacramento, with the Blue Diamond Facility and the Rice Cooperative is going to operate vehicles.

And I also have Chuck White, from Waste Management, here who is going to say a few words. He's going to operate one of our electric refuse trucks.

So the old joke, what has four wheels and flies? Now, it's going to be what has four wheels, produces no emissions and flies? One of our electric refuse trucks.

CHAIR WEISENMILLER: Great thanks.

Hi, Chuck.

MR. WHITE: Am I out of order?

CHAIR WEISENMILLER: No, go ahead, Chuck, you were next. You were the next on the cards.

MR. WHITE: Great, thanks. Chuck White, representing Waste Management. We're really happy to be here today to support the grant you're proposing to give to TransPower. We're fortunate enough to be working with TransPower as one of the companies that will demonstrate one of their electric vehicles in a disadvantaged community.

We have about 2,800 heavy-duty refuse trucks, which we're totally committing to converting away from diesel as quickly as we possibly can. We've been focusing

on natural gas and renewable natural gas, but we're not closing off any options whatsoever. We're really excited about being able to demonstrate this low renewable, low carbon, electric refuse truck in California to better serve our communities.

And as a matter of fact, recently one of our trucks was featured prominently in a Transformer Movie. And to the extent there's a future Transformer Movie, we'll be working with Mike to make sure one of those trucks are figured prominently -- one of his electric trucks is figured prominently in that movie, too. Thank you.

COMMISSIONER MC ALLISTER: You have to get Shia La Beouf in the --

COMMISSIONER HOCHSCHILD: What portion of your fleet of 2,800 trucks is diesel today?

MR. WHITE: They're about 50 percent diesel. Nationwide we have about 19,000. We're purchasing about 700 to 800 trucks per year of natural gas. The vast majority of our new purchases are natural gas. But we're really looking to the future in all areas, including electric vehicles. And we're really excited about the technology that Mike and his company have demonstrated and brought to us. And we're looking forward to showing how it works in California in a disadvantaged community.

CHAIR WEISENMILLER: Great, thank you.

Pete Ward.

MR. WARD: Good morning Chair and Commissioners. It's a pleasure to be back here at the Energy Commission today. I'm on behalf of North American Repower and Efficient Drivetrains, Incorporated, I would like to express our sincere thanks and gratitude to the Commission for supporting this project, which has an outstanding team.

And North American Repower proposes, as a business model, that is focused on replacing existing diesel engines and trucks, and the resultant high end-use criteria and greenhouse gas emissions with completely remanufactured and warrantied engines capable of utilizing biomethane, the only negative carbon transportation fuel now available in California.

North American Repower will remove the existing diesel engines from Sectran armored security trucks and replace them with completely remanufactured natural gas engines that will operate on biomethane.

But there's more. Efficient Drivetrains, Incorporated will integrate their drivetrain, which is an all-electric drivetrain that will basically drive these vehicles in all-electric mode with the range extension of the biomethane.

They will operate in EV mode on the road and when, typically diesel idling at long periods at banks,

stores and malls.

The successful combination and merging of these two innovative and disruptive technologies from these two California technology companies can truly be transformative, showing a very viable pathway to zero emissions and negative carbon transportation. Fuel use across California, especially in disadvantaged communities in the Central Valley and other areas, where much of the biomethane is currently being produced, and where diesel emissions of NOx and PM are causing high rates of asthma and respiratory disease.

Thank you again and I want to also thank the staff. This was a really well-prepared program opportunity notice, and they acted with great speed in bringing this to a contract. We really appreciate that. Holding these teams together for demonstrations sometimes is difficult over a long period of time.

Thank you very much for your commitment to the project and for this outstanding award, really appreciate it. Thank you.

CHAIR WEISENMILLER: Okay, thank you.

Anyone else in the room or on the phone?

So, let's turn to Commissioner Scott.

COMMISSIONER SCOTT: Okay, I'd just like to -- I would echo what Peter Ward just said. I think the staff

did a terrific job putting together this program opportunity notice for the advanced vehicle technology demonstrations. And it kind of shows what the broad portfolio of projects that we have here, you know, we're talking about electric refuge trucks, renewable natural gas, hybrid-electric armored security trucks. And then the battery electric port vehicles. You know, in our ports it's really important to figure out how we can clean up the vehicles in our ports. They're some of also the hardest hit places with vehicle pollution. Heavy-duty electric yard tractors. I mean, it's a really nice portfolio of technologies.

And kind of picking up on what Commissioner Hochschild said on the last agenda item, it's exciting to see this technology sort of expanding out into a whole bunch of different types of vehicle spaces.

And then I'd just like to thank Mike, and Chuck and Peter for coming up to talk with us today. Thank you.

So, I will move approval of Item 11.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: Okay, all those in favor?

(Ayes)

CHAIR WEISENMILLER: This item passes five to zero. Great, thank you. Thank you, Larry.

Let's go to Number 12, which is Zero Emission

Vehicle Readiness Plan. And this is Sharon Purewal.

MS. PUREWAL: Good morning, Commissioners. My name is Sharon Purewal and I'm a staff member in the Fuels and Transportation Division's Emerging Fuels and Technologies Office.

Today, staff is seeking approval of five agreements submitted under Program Opportunity Notice 14607, which supports new and existing planning efforts for plug-in electric vehicles and fuel cell electric vehicles.

Funding is provided through the Alternative and Renewable Fuels and Vehicle Technology Program.

The first item, Item 12.a, the goal of proposed grant ARV-1455, with the Redwood Coast Energy Authority, is to utilize it's $169,000 award to facilitate accelerated fuel cell electric vehicle adoption in the North Coast and upstate region.

Strategies in accordance with CEC Grant ARV-1312, the Northwest California Alternative Transportation Fuels Planning Project will be implemented, along with local expertise in hydrogen fueling stations.

Item 12.b, under proposed grant ARV-14-056, the Tahoe Regional Planning Agency proposes to develop the Tahoe Truckee Regional Plug-in Electric Vehicle Readiness Plan.

This $200,000 award will allow coordinated

engagement with regional and statewide PEV partners and stakeholders. Assessments will be developed to establish existing conditions and to identify key needs in the Tahoe Truckee Region in order to prepare for plug-in electric vehicle infrastructure deployment.

Key sectors of this region include residents, second homeowners, visitors to the area, and tourist destinations such as ski resorts.

Item 12.c, this $53,000 grant award, ARV-1457, with the City of Palo Alto proposes to accelerate the adoption of electric vehicles via electric vehicle awareness and education.

Their subcontractors include Thiessen and Associates, Reach, and Plug-In America.

Electric vehicle fast charging siting outreach and education will be provided to potential charging sites, such as multi-unit dwellings.

Additionally, this grant aims to conduct two green car shows and ride-and-drive events at large corporate campuses to increase EV knowledge and awareness.

Item 12.d, this $300,000 grant, ARV-1458, with the City of Mt. Shasta, proposes the development of a Plug-In Electric Vehicle Readiness Plan that covers the Counties of Glenn and Colusa.

Planning efforts include streamlining permitting

and inspection processes, siting and conducting public outreach campaigns. Planning efforts are crucial due to the significant gap for plug-in electric vehicle charging infrastructure along the northern portion of California Interstate 5. These efforts support the continuity of the West Coast Electric Highway from Oregon and Washington.

Item 12.e. 12.e is Grant ARV-1459, for $300,000 to the Solano Transportation Authority. The Solano Transportation Authority, their subcontractor yet to be announced, and cities and the unincorporated Solano County municipalities propose to develop streamlined permitting and inspection processes for plug-in electric vehicle charging infrastructure, improve electric vehicle charging infrastructure installation for multi-unit dwellings, public sites and workplaces, perform outreach to potential charging infrastructure site hosts, coordinate installation of directional trailblazer signage on local streets and roadways, to conduct PEV awareness activities and, finally, to develop guidelines and resources for the adoption of residential and/or nonresidential voluntary measures in the California Building Codes.

With that, I would like to thank you for your time and consideration of these measures. I'm available for any questions you may have.

CHAIR WEISENMILLER: Thank you. I believe we

have a representative of the Redwood Coast Energy on the line.

MR. CARMAN: Yes, can you hear me?

CHAIR WEISENMILLER: Yes, we can.

MR. CARMAN: Good morning, Commissioners. My name's Jerome Carman. I'm with the Redwood Coast Energy Authority.

And we want to express our appreciation for your continued support for the accelerated adoption of zero emission vehicles and the alternative transportation fuels. Your support really has been critical for empowering local governments up here and to assist the State in meeting its ZEV goals, as well as addressing local economy, public health, and environmental issues.

And, furthermore, funded projects to date have facilitated important collaboration with other municipalities, agencies, organizations, private companies, everyone involved in this transportation project in general, across the State.

And this coordination really has been critical and your funding allows us to spend the time to build those important relationships. So, thank you.

And we're also very excited about and support the additional work you're funding up here, in Mendocino County and Upstate Region. There are tons of agencies up here

doing great work. Too many to list. And we congratulate the CEC in recognizing and supporting everyone up here in the North Coast and Upstate. Thank you.

CHAIR WEISENMILLER: Thank you.

I think that's all the comments we have.

So, Commissioner Scott.

COMMISSIONER SCOTT: Sure. I have lots to say on the transportation pieces today. One, thank you for Redwood Coast Energy Authority for joining us today. I'm really excited to have a fuel cell electric vehicle readiness plan coming. I think we're excited to see some more of those as the fuel cell electric vehicles -- the Hyundai, as you know, has one on the road already, and Toyota is supposed to bring theirs in the fall. And we can hope to continue to see many more. So, getting their readiness plans going there is important.

You know, and on the plug-in electric vehicle side there are a lot of moving pieces. And California, as you guys all know, is a really big State and so it's incredibly helpful to have, I think, the regions really stepping up to the plate to take on some of the planning, and help, you know, with destinations, with some of the corridor charging, with workplaces.

And, you know, the technology for the chargers is changing. The cars are getting longer ranges. And so,

when you're thinking about where to put these charging stations it really does help to have some regional and local flavor, and also thought about where those ought to go. And this is, I think, especially in light of the pending decision at the Public Utilities Commission that will allow, potentially, the Investor-Owned Utilities to become involved in this space. Because it's just going to continue changing what the landscape looks like and where we want to, and where the counties want to put their investments in helping to grow the infrastructure.

So, I wholeheartedly support this.

CHAIR WEISENMILLER: I was just going to channel President Piccard, again, and say that he's really looking for the utility's plans to be tied into local transportation documents that we're developing here, as opposed to just being utility-centric on where to put charging.

COMMISSIONER MC ALLISTER: This is great. I definitely wanted to comment on the fuel cell plan, as well, really congratulate Redwood on that, and very, very exciting.

Also, just the diversity of this and the fact that it's in more rural areas and secondary towns that are really getting into the game, and putting that infrastructure in more. Really thinking about their

particular situations, it's just fantastic.

And then, totally second the idea that the local transportation authorities, and the MPOs, and COGs, and everything really get a hearing and get the right resources in so they can make the decisions based on their reality. I think it's just fantastic. So, nice job scoping and getting to a finish line on this.

COMMISSIONER DOUGLAS: Yeah, I just wanted to add, as well, I really think the concept and the strategy of providing some resources to local governments to do some planning in order to better get their own thinking and planning in order, in terms of being ready for the expansion of electric vehicles is critical.

And then, as the Chair noted, making the connection between that and the plans that the utilities may be putting forward, and that the PUC will be considering is also really important. And this is, obviously, essential to being able to make that connection.

So, I'm strongly in support of this and I'm also really pleased to see, as Commissioner McAllister noted, the diversity of the applications here, and that we've funded in the past.

COMMISSIONER SCOTT: Okay, I will move approval of Item 12.

COMMISSIONER DOUGLAS: Second.

COMMISSIONER SCOTT: Oh, is this 12? Yeah, 12.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This item also passes five to zero. Thank you.

Let's go to Number 13, which is CO2Nexus, Inc. And Paul Robinson, please.

MR. ROBINSON: Good morning Chair and Commissioners. My name is Paul Robinson. I'm an Energy Commission Specialist for the Energy Efficiency Research Office, IEW Group.

I'm here to present an agreement with CO2Nexus on their liquid carbon dioxide cleaning project with the U.S. Navy.

The purpose of this project is to demonstrate liquid carbon dioxide-based textile cleaning system to determine energy and water savings, and improve processing performance for cleaning technical military garments.

CO2Nexus the prime contractor for this project, with the U.S. Navy being a key partner as well.

The demonstration will be held at Naval Base, Ventura County, and Port Hueneme. The Energy Commission will contribute funds of $900,300, with the U.S. Navy and CO2Nexus contributing match funds of a little over a

million dollars, bringing the total project cost to approximately $2,011,032, over a proposed term of 46 months.

CO2Nexus has completed a previous grant from the Energy Commission regarding similar application with their liquid carbon dioxide technology. The U.S. Navy had expressed interest in the liquid carbon technology because no other cleaning process offers the same potential to clean military combat gear.

CO2Nexus will also work with the Navy field personnel and other agencies to develop cleaning standards, modify and demonstrate this technology, measure and validate energy and water consumption.

The project will result in the overall reduction in electricity and natural gas by 50 percent, chemical use by 25 percent, and water consumption by 98 percent.

The demonstration will also reduce wastewater treatment requirements and environmental impacts, while increasing the overall garment lifecycle.

The project will also achieve a simple payback of four years or less, with potential applications for other agencies, like CHP, Cal Fire, et cetera.

Thank you for your consideration. Do you have any questions?

CHAIR WEISENMILLER: Thank you.

Yes, Commissioners, I was going to note obviously one of our strongest partners is the military, particularly the Navy and the Marines, and this came out of that discussion as particularly good in the drought era to be looking at this.

And, again, it's something they're very interested in. And as we come up with innovative technologies through PIER and EPIC, it's always good to be able to move those out in the market. And, frankly, public agencies are a little bit easier. The Department of Defense has a pretty large procurement budget. And so, really trying to continue to deepen that relationship to actually turn some of our stuff from lab bench to, you know, practical applications.

So, anyway, I think it's a great project and certainly a good demonstration of our relationship with the Navy and the Marines.

COMMISSIONER DOUGLAS: Oh, I think it sounds very -- it's very exciting and I'd like to -- I'll move approval of the item, Item 13.

COMMISSIONER SCOTT: Second.

CHAIR WEISENMILLER: Okay, all those in favor?

(Ayes)

CHAIR WEISENMILLER: So, Item 15 passed five to zero. Thank you.

MR. ROBINSON: Well, thank you.

CHAIR WEISENMILLER: So, let's go on to Number 14, which is Glint Phototonics.

MS. GUTIERREZ: Hi, Commissioners. My name is Aleecia Gutierrez. I'm with the Energy Generation Research Office and I'm presenting this item for approval today.

So this is an agreement with Glint Phototonics for $999,940 to develop their self-tracking concentrator photovoltaic modules. And those are new solar panels technologies that apply light-reactive optical materials on panels to collect direct sunlight and internally concentrate that into small areas for high-efficiency photovoltaic cells.

These are expected to provide 30 percent conversion efficiency, approximately double that of conventional polysilicon panels, and reduce the levelized cost of electricity.

I'd also like to note that this is a follow-on project from ARPA-E and the development of this technology was initially funded by an ARPA-E grant.

So, I'm requesting approval and can answer questions, if you have any.

CHAIR WEISENMILLER: Great, thank you.

Yeah, as she said, this is another -- we have a very good relationship with ARPA-E, and this is another

example of that where, basically, they're obviously trying to put money into the really far out stuff, and the things that sort of emerge from that successfully are certainly strong candidates for us when they bid.

So, and it was an all-competitive bidding process, but again a very good project.

COMMISSIONER HOCHSCHILD: What do we know about the durability of the material in question?

MS. GUTIERREZ: So, it is -- they are using glass. I think you had questions about that in the past. So, we're going to -- this is R&D, so we'll be testing for durability. It's a pretty small scale.

COMMISSIONER HOCHSCHILD: Yeah. That's, I think, the main issue. I mean, one of the nice things about the current sandwich of materials in conventional PV is, you know, it's glass, it's silicon, it's EVA and, you know, a substrate that's really proven.

And when we introduce new materials, you want to make sure it's going to be able to endure for 30 years in a really harsh, you know, very sunny outdoor environment. And that's, you know, the test we've got to meet.

But this is very exciting stuff, to see this, and look forward to learning where it goes.

MS. GUTIERREZ: Thank you.

COMMISSIONER HOCHSCHILD: I make the motion to

approve the item.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This passes five to zero. Thanks.

MS. GUTIERREZ: Thank you.

CHAIR WEISENMILLER: Let's go on to Item 15, the Trustees of the California State University. And this is James Lee.

MR. LEE: Thank you. Good morning, Commissioners. My name is James Lee, from the Energy Research and Development Division.

Today, staff seeks the possible approval of the six highest ranking grant applications totaling $895,643 from the PIER Energy Innovations, Small Grant Solicitations 14-04, natural gas, transportation natural gas.

These grant were competitively selected and capped at $150,000 each. For the 14-04 solicitations, 17 grant applicants were received. Fourteen passed initial screening on the grounds for technical review.

The Program Technical Review Board is recommending funding for the six highest ranked proposals of those 14. Five proposals are for natural gas and are valued at $745,652. One proposal is for transportation

natural gas and is valued at $149,991.

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

COMMISSIONER DOUGLAS: Well, thank you. Are there any questions on this item, Commissioners?

Okay, and I don't see any comment on this item. If there is, please jump up and down, or wave your blue card. I don't have any up here.

All right, then do we have a motion for Item 15.

COMMISSIONER HOCHSCHILD: So moved.

COMMISSIONER MC ALLISTER: I'll second.

COMMISSIONER DOUGLAS: All in favor?

(Ayes)

COMMISSIONER DOUGLAS: The item passes four to zero and the Chair may add on in a moment, when he returns to the room.

So, Kourtney?

MS. VACCARO: Yeah, I was just going to ask if we could take Item 16 out of order, so instead of moving forward to that, if we can move forward on the agenda. We have a question that we need to look into with respect to Item 16.

COMMISSIONER DOUGLAS: Well, that actually works well because as we go on to Item 17, there's a disclosure for Commissioner McAllister and I on Item 17.d. UC Davis

is, I understand, a subcontractor. And I am an adjunct lecturer or professor at UC Davis. I teach one class. It's a renewable energy law class. It happens in the spring. We're just wrapping up this year's class. So, that is an arrangement with King Hall, which is not involved in any way with this contract. But I still need to disclose the King Hall relationship.

Commissioner McAllister.

COMMISSIONER MC ALLISTER: And my wife is a Professor at King Hall and is in no way involved with this, nor is King Hall, itself. So, we do not have a conflict, but need to disclose.

COMMISSIONER DOUGLAS: Very good. So with that, we will take up Item 17, bringing energy efficiency solutions to California's industrial, agricultural and water sectors. Let's see, go ahead, Leah.

MS. MOHNEY: Good morning, Commissioners. My name is Leah Mohney. I'm with the Industrial Ag and Water Group, with the Energy Efficiency Research Office.

The following six grants are the result of a competitive solicitation. We received 13 proposals and 8 were recommended for funding, for a total of $27,050,066.

The two remaining grants will be presented at the next Business Meeting.

We are seeking approval of the following grants,

17.a, University of California, Riverside. Customized energy management system and supervisory control and data acquisition system, or SSCDAS, are required at water and wastewater treatment facilities for real-time monitoring of water.

Some of these facilities also have legacy energy management control systems. Most of these systems have inherited data equipment, provided by different vendors, at different times, for different projects.

Upgrades and modernization efforts face the challenge of integrating control equipment of various vintages, along with the difficulty of communicating among different vendor protocols for comprehensive, real-time energy management.

This new system consists of hardware sensors and customized software that will overlay and incorporate the existing SSCDAS and EMS systems without disrupting current operations.

This project will highlight a path for water agencies in California to reduce their peak energy consumption, with no decrease in service or reliability.

The direct benefits to California IOU ratepayers include an estimated annual electricity savings of 1,000 gigawatts, peak load reduction of 37.2 megawatts, and greenhouse gas reductions of 28,300 metric tons.

This technology will be deployed at three sites and the project term is 46 months. The match funding is $1,722,732.

17.b, Porifera, Incorporated. Water and energy savings utilizing innovative forward osmosis systems for irrigation and indirect potable reuse. Many types of industrial wastewater is very difficult to treat because they contain high levels of dissolved and suspended solids. This makes low-cost treatment with membrane-based systems very ineffective.

As a result, industrial wastewater is transported offsite for disposal or treated onsite with expensive methods that are complex, energy intensive and generate greenhouse gases.

Porifera's recycler is an innovative membrane system that is able to concentrate wastewater and generate pure water for reuse. This technology offers a significant energy savings and emissions reductions with a two- to five-year return on investment.

The recycler will demonstrate 20 to 40 percent energy savings over the current practices for high purity reuse of hard-to-treat industrial wastewater at three different sites.

With broad application, we estimate the recycler could save more than 53,000 megawatts annually, and recover

more than 166,000 acre feet of water for reuse.

There are $646,493 in match funding and the term is 46 months.

17.c, Porifera, Incorporated, water energy savings through osmotic concentration of products in the waste, and food and beverage industry.

The evaporators and reverse osmosis concentrators currently used in the beverage industry use a lot of energy, making steam to dewater juice, and they do not produce a high-quality product.

Porifera's concentrator will demonstrate savings in water and energy, while producing a higher quality juice product. This system uses the unique membrane technology to make high quality juice concentrates and generates purified water for system reuse.

The system will replace the facility's current concentrating system during the demonstration period. Depending on its use, there is an estimated potential between 10 and 80 percent electrical energy savings for each concentrator replaced. If 25 percent of California's concentrators were replaced, we estimate a reduction of 1.8 million metric tons of carbon dioxide per year.

There are three deployment sites for this project. The term is 45 months. And the match funding is $628,568.

Item 17.d, Wexus Energy, water management mobile software for the ag industry. With prolonged drought conditions, California's $4 billion plus agriculture and food processing industries are looking for ways to reduce their energy and water.

These industries use large amount of water and electricity to supply water for crop production, harvesting, and post-harvest food processing.

Most farms in California have been upgraded to smart meters and are increasingly deploying devices in the field, such as soil sensors, rain sensors, weather stations, flow and pressure meters.

However, most farmers still have a difficult time accessing, collecting and analyzing in-field data and this limits them being able to make informed decisions about their water use in real time.

The Wexus solution integrates a cloud-based database back end, with a front end user interface in the form of a web-based application. Wexus will access smart meter and existing on-site customer data and send text or e-mail alerts during use of high energy and water, with recommendations to make reductions.

We expect an overall 10 percent reduction of energy and water use at each site. The estimated annual energy savings is 2,422,800 kilowatts, 4,044 acre feet of

water, and 687 metric tons of greenhouse gas.

There are three deployment sites for this project. The project term is 45 months. And there is a million dollars in match funding.

17.e, UC Berkeley, unlocking industrial energy efficiency through optimized energy management systems.

Many industrial customers are unaware of low- or no-cost energy conservation methods that are within their facilities. Often, the only electricity data that's available is for the whole facility level and it can't be easily analyzed to find energy efficiency opportunities.

Process submetering has been very rare due to its high cost. Commonly used compressed air systems often have leaks, or compressors may be operated inefficiently. Since the amount of loss is not measured, a facility cannot determine whether it's worth investing in energy-saving projects to improve system performance.

This project will demonstrate the effectiveness of energy management software that collects and analyzes data from existing and newly-installed sensors in key locations within the manufacturing process. Data will be correlated with the manufacturing process to identify anomalies that can't be explained by changes in production.

The software provides manufacturers with data analytics, benchmarking, and recommendations through a user

interface.

Energy savings based on 100 customers using this software, and 15 percent savings overall in compressor energy use, with an estimated annual electricity savings of 24,016,000 kilowatts, and a greenhouse gas reduction of 6,800 metric tons.

This project will begin with two sites and expand to 100 by the end of the project.

The project partners will provide $1,530,590 in match funding and the project term is 45 months.

Item 17.f, Kennedy/Jenks Consultants, Incorporated, raw wastewater filtration to increase organic removal efficiency and achieve significant electrical savings.

Municipal wastewater treatment typically involves three steps. The primary, to remove larger settle-able solids. The secondary uses biological process to remove dissolved organic matter. And tertiary, any other treatment beyond that, such as chlorine, ultraviolet, or reverse osmosis that's used before being discharged or recycled.

The secondary treatment, alone, accounts for 40 to 60 percent of the entire wastewater treatment plant electricity consumption. This project will reduce the secondary treatment organic loading by filtration of the

screened raw wastewater entering the wastewater treatment plant. This process uses a completely submerged cloth deck filter for the removal of solids. And based on test results, aeration energy was reduced by 30 to 45 percent.

For this project, Kennedy/Jenks will deploy a cloth deck filter to filter raw wastewater for maximal electric savings by promoting carbon diversion to the digesters instead of secondary treatment.

Based on the 10 percent market adoption in California, this is estimated to save 34.3 million kilowatts annual and reduce greenhouse gas by 97 metric tons.

The match funding is $1,288,340 and the project term is 45 months.

We recommend approval of these grants and staff are available to answer questions, as well as two of our contractors, Ander Paliskaner from Kenney/Jenks, and Chris Terrell from Wexus Technologies, if you have questions about their projects.

CHAIR WEISENMILLER: Yeah. I was going to say, I believe you are both on the line. Do either of you want to say a few words?

MR. TERRELL: We, at Wexus -- go ahead.

CHAIR WEISENMILLER: Go ahead.

MR. TERRELL: Yes, hi, this is Chris Terrell.

I'm the CEO and co-founder of Wexus. I first just want to say thank you to the Energy Commission for the opportunity under this grant. And we're very excited to deploy our solution at CLR. And the ag industry, as we know, the energy and water usage on the ag side is a hot button this year, right now, and our farms are in need of some solutions. So, we're hoping to bring that forward.

I think the summary was very thorough, but happy to answer any questions you might have.

CHAIR WEISENMILLER: Thank you. Commissioners, any questions?

You know, again, I think we're excited about particularly projects dealing with the water/energy nexus in agricultural this year. That's an area where there's, you know, obviously a lot of pain. So, trying to move forward in this, sort of in some respects foreshadows our wet program coming forward.

So, anyway, I think this is a great step forward today.

MR. TERRELL: Absolutely. Thank you.

CHAIR WEISENMILLER: So, I think at this point we'll go -- it looked like both of the comments were from Wexus, so we'll now go to -- unless anyone else on the line wants to speak?

Okay, so let's go --

MR. BELEAU: No, my name is Dr. Ed Beleau. I'm with the Wexus group and wanted to echo what Mr. Terrell said relative to the importance of this product, particularly as it relates to the development of staff in the field. Because I think that contributes significantly to sustaining the efforts of the work of Wexus. And so, we're very appreciative of you giving us that opportunity and we look forward to a continuing relationship, and a long time path to success.

CHAIR WEISENMILLER: Great, thank you. Thanks for being on the phone.

So, let's transition to the Commissioners, any questions or comments?

COMMISSIONER MC ALLISTER: Yeah, I just wanted to say that I'm very impressed with this group of projects and want to just congratulate the division staff on this. I really like to see the diversity.

I mean, we're talking about compressed air, which is a very important sector of electricity consumption. We have wastewater, we have industrial processes. And I just think that all of these areas, you know, agriculture as well, and all of these areas are really important silvers of energy markets in our economy. And optimizing those has all sorts of benefits, not just on the energy and the resources side, but on our economic development and our

innovation economy, and it's just super important.

I actually wanted to also comment. I got sidetracked a little bit on an issue with Item 16, while 15 was being discussed, and didn't have a chance to make comments there. But I also wanted to just highlight the projects on 15.

And, specifically, the smaller grants. And I wanted to just note that these are also a bunch of really great projects in looking at controls, making really small investments in early stage applications around the natural gas. And as we move, figure out pathways to our low carbon future, you know, using natural gas, saving it, using it more efficiently and effectively is huge. And controls and optimizing the natural gas systems is key for a whole bunch of reasons. You know, we've got air quality. And also on the waterfront, you know, we've got methane production there, as well.

So, I think, you know, desal, we're seeing on 15 and 17, the groups of projects is a topic whose time has come. So, I want to just highlight the small grants program as being a very cost-effective driver of innovation in the State.

So, anyway, with that we'll move back to comments on 17. Oh, great, so I'll just go ahead and move Item 17.

COMMISSIONER DOUGLAS: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: So, Item 17 passes five to zero.

Let's -- first, let me add my vote into 15, I also support it, so that should make it five to zero.

And then let's go on to Item 16, Lawrence Berkeley National Lab.

Dustin Davis, please.

MS. VACCARO: Chair, before you move forward, I would ask maybe if you just reopen the vote then on the item where you weren't here, and then do the vote.

CHAIR WEISENMILLER: Right. Okay, so I want to reopen Item 15. Can we have a motion?

COMMISSIONER HOCHSCHILD: I move approval.

COMMISSIONER MC ALLISTER: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: So this item now passes five to zero.

MS. VACCARO: And then we had asked for Item 16 to just be taken out of order, but there is no longer any concern with respect to Item 16.

CHAIR WEISENMILLER: Great. So, let's go on to 16.

MR. DAVIS: Good afternoon, Commissioners. I'm Dustin Davis with the Energy Efficiency Research Office.

This project resulted from competitive grant solicitation PON 13301, titled, "Developing a Portfolio of Advanced Efficiency Solutions, Technologies and Approaches for more Affordable and Comfortable Buildings".

This grant solicitation sought proposals for applied research and development projects to develop next-generation end-use efficiency technologies and strategies for the building sector.

The purpose of this project is to develop and validate savings from a new generation of high-performance integrated window and façade solutions, and develop supporting design and management toolkits so that the building industry, suppliers, designers, contractors and owners can more affordably meet challenging energy policy goals, such as zero net energy buildings, by 2030.

This new set of technology solutions and tools will help create an integration platform for new and retrofit buildings that will address not only energy issues, but the critical comfort and business needs of the industry that will drive market acceptance.

The project will develop new prototypes and integrated systems in partnership with industry, demonstrate their performance and cost effectiveness using

lab simulations and testing, and provide the methods, data and tools to enable adoption throughout California.

The project tasks are designed to begin where current codes and practice leave off, and to enhance key performance attributes of facades in California climates, and help drive towards the solutions that will be needed to cost-effectively achieve zero net energy buildings.

The project includes development of the following technologies; highly insulating windows, using a novel design for the framing system, and structural thin glass technology for the insulating glass unit, advanced perimeter ventilation systems using wireless sensors and controls within a window framing system, and dynamic daylight redirecting systems based on promising new optical materials and actuators, combined with sensors, and controls, and integrated with dimmable lighting.

In combination, the high-performance window and façade technologies proposed in this project will reduce electricity use by reducing HVAC and lighting loads.

Assuming a conservative two percent market penetration in California's commercial building stock, the proposed technologies could reduce statewide electricity use by about 112 gigawatt hours and peak demand by 45 megawatts per year.

These savings translate to about $16 million in

electricity costs and mitigation of over 31,000 metric tons of greenhouse gas emissions annually.

With that, I'll conclude and gladly answer any questions, with the assistance of project principal investigators Steven Selkowitz, Eleanor Lee, and Charlie Kerkacha (phonetic), available via WebEx. Thanks.

CHAIR WEISENMILLER: Thank you. And so the first question is do any of the LBL folks want to say a few words?

MR. SELKOWITZ: Hi, this is Steve. Can you hear me?

CHAIR WEISENMILLER: Yes.

MR. SELKOWITZ: Well, just to say thanks for the opportunity to participate once again in the program. We were active with what was then the PIER Program for a number of years, did a lot of interesting things that impacted both the manufacturing side, as well as the user and specifier side, so the impact of California is important.

And just to remind you that we also play the lead role for windows-related research and daylighting for the U.S. Department of Energy. So, a project like this ends up helping to partner both the national effort and the effort here in the State.

But we'd be happy to have any questions here that

might come up from the presentation that Dustin did.

CHAIR WEISENMILLER: Thank you.

Anyone else, Eleanor?

MS. LEE: No, I think that sums it up for us.

CHAIR WEISENMILLER: Okay, great.

So, Commissioners, let's just turn to the dais, any questions or comments?

COMMISSIONER MC ALLISTER: Yeah, just a comment. Yeah, I think this idea that we test systems as a whole, as installed in the real world, and then put them put their paces and figure out how to make them work well is just a great innovation and will, I think undoubtedly, help bring industry on board that can look, and feel, and touch the systems in 3D, and come visit and see what's what, look at the data. And I think that can push the market and innovative builders can learn from that and drive the market from above.

And then, also, you know, the state-of-the-art kind of approach, with sensors everywhere, is not likely to be what gets built out there in a new construction, typically, but it can produce buildable options. As, you know, the state of the art evolves, it will come down and help define highly efficient, and buildable, and cost-effective solutions that can really go to a large scale.

And so, hopefully, you know, that conservative

two percent penetration of this system, it will spin off some, maybe slightly watered down systems that will have much broader penetration. And so I'm hopeful that over time that will happen. The commercial space just has so much potential, still, to save energy, and new construction is just the time where you have the chance to build it right and reap long-term benefits. So, I'm very supportive of this project.

Shall I go ahead and move? Okay, I'll move Item 16.

COMMISSIONER DOUGLAS: Second.

COMMISSIONER SCOTT: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: Item 16 passes five to zero.

Let's go on to Item 18, reduced environmental and public health impacts on electricity generation that make the electricity system less vulnerable to climate impacts, phase I.

Lillian Mirviss, please.

MS. MIRVISS: Good afternoon, Commissioners. My name is Lillian Mirviss and I'm with the Environmental area in the Energy Generation Research Office.

Staff requests approval of nine grant agreements recommended for funding under EPIC solicitation PON 14309,

reduce the environmental and public health impacts of electricity generation and make the electricity system less vulnerable to climate impacts, phase I.

Up to $7.4 million in EPIC funding was available for projects under phase I and phase II will fund over $9.3 million for the second group of environmental-related EPIC projects.

This solicitation received 14 applications for applied research and development projects under six distinct research topic areas. Emerging technologies to avoid fatal interactions of birds and bats with energy facilities; renewable energy impacts, learning from real-world experience; improved hydrological forecasting for hydro power generation; water conserving hybrid power plant cooling, phase I; long-term energy scenarios for California and their environmental consequences; and real-world characterization of the urban heat island effect scooping.

Out of these 14 proposals, 12 received a passing score and nine projects are finalists recommended for funding, for a total awarded amount of $6,543,065 and total match funding of $2,565,724.

Today I am requesting approval for eight of these projects and the final will be brought to a future business meeting.

The recommended projects are as follows. A,

University of California Riverside, along with subcontractors Jet Propulsion Laboratory, at the California Institute of Technology, is proposing to develop a fully coupled aerosol-meteorology snowpack model for the hydrology and hydro power generation forecast in California.

This project will use observational datasets, including precipitation, snowpack and stream in-flow observations from Southern California Edison's hydroelectric power plant, the Big Creek Project in the upper San Joaquin River system and the Sierra Nevada of Central California to improve forecasts, specifically focusing on California's hydrology and hydro-powered generation.

This fully coupled forecasting model, including aerosol impacts, will provide an advanced forecasting model for the planning and management of hydroelectric generation in California.

Jet Propulsion Laboratory will provide over $249,000 in match funding for this project.

B, University of California, Berkeley, along with subcontractor, University of California, Merced, and project partner, California Department of Water Resources, plans to develop improved snowpack forecasts within a representative Sierra Nevada watershed in order to bolster

the hydrographic data network that supports hydropower planning and operations.

The project is expected to reduce uncertainty and water forecasts in a changing climate, and assist in the development of reliable and flexible operation of hydropower dams.

This project will specifically target three power houses, the Rock Creek, Crest and Poe Power Houses, in Plymouth County, California, all of which are operated by PG&E.

The project team will provide over $236,000 in match funding for this effort.

C, Maulbetsch Consulting, in Menlo Park, California, along with subcontractor, DiFilippo Consulting, plans to analyze the design, performance and costs of optimized hybrid cooling systems at utility power plant scale to illustrate the potential benefit of hybrid cooling in California.

This project will use an existing computational tool with the capability of specifying design parameters for optimized closed cycle, wet, direct dry, and parallel wet/dry cooling systems.

The tool's output will be checked against information from participating plants equipped with wet, dry, and hybrid cooling systems, which include PG&E's

Gateway Station, in Contra Costa, California, PG&E's Colusa Station in Maxwell, California, and Xcel's Comanche Hybrid Station in Colorado.

The tool will enable rigorous, reliable evaluations of hybrid cooling systems and the tradeoffs between economic power production and water resource conservation.

D, Energy and Environmental Economics, in San Francisco, California, along with subcontractors, Black & Veatch Corporation, and ECCO International will advance the understanding of key parameters of long-term energy scenarios and greenhouse gas abatement options in the California energy system.

This project will further develop scenarios and modeling capabilities of the California electricity sector, as well as interactions between the electricity sector and other sectors. And it will explore the implications of particular policy choices on the electricity system in the medium, 2020 to 2030, and long term, 2050.

This project will provide critical insight into some of the key challenges facing the low carbon transition in the electricity system, the options for addressing these challenges, and the dynamic interactions among these options.

E, Frontier Wind, in Rocklin, California, along

with subcontractors, Bruce Walker, and U.S. Forest's Pacific Southwest Research Station, in Arcata, California, plans to design, lab test, and field test a new bat deterrence system utilizing ultrasound transmitters mounted in array along the rotor blades, providing complete coverage over the entire turbine envelope.

A field test study, utilizing substantially similar methods to prior bat impact studies will be implemented post-installation at the test site, in Burney, California, to measure the effectiveness of a new ultrasound system.

By placing the system directly on the blades during manufacturing, this research will resolve the long-standing issue of forfeiting a warranty after applying deterrents post-manufacturing.

If successful, the deterrent will avoid the need to curtail California wind turbine capacity to mitigate against potential fatal bat interactions and increase installed California wind generation capacity.

The project team plans to provide over $37,000 in match funding for this project.

Frontier also received research funds from the Department of Energy.

F, Lawrence Berkeley National Laboratory, in Berkeley, California, along with subcontractor, University

of California, at Berkeley, will provide detailed modeling of long-term energy scenarios considering climate change impacts, electricity system resilience analysis, and health and environmental co-benefits.

This project will use stochastic modeling capabilities of the electricity system, simulating more comprehensive demand response options and more realistic PEV modeling.

The project will also include more realistic simulations of the potential for energy efficiency and consider the impacts of climate change on energy resources.

This project will provide guidance for future electricity system investment that can meet carbon limits at the lowest cost.

In addition, the energy system resilience analysis will help to ensure the electricity system is more robust to future external shocks.

University of California, at Berkeley, will provide over $267,000 in match funding for this project.

G, Lawrence Berkeley National Laboratory, in Berkeley, California, along with subcontractors Altostratus and University of Southern California, plans to improve understanding of the distribution of near surface air temperatures within urban heat islands in California, identify and quantify the determinants of local

temperatures, and enhance the foundation for location-specific assessments of mitigation strategies.

In collaboration with local governments and organizations in the Los Angeles Basis, the research team will design and implement a network of fixed monitoring stations, supplemented with mobile monitoring and data from existing weather station networks.

This work will coordinate with CalEPA's development of an urban heat island index effect, as well as CalEnviroscreen, a tool for identifying vulnerable populations.

Altostratus plans to provide $4,000 in match funding for this project.

H, lastly, the University of California, at Irvine, along with project partners, Southern California Gas Company and Southern California Edison, will utilize climate change simulations to produce conditions that perturb electricity system generation, renewable capacity potential, and demand for the years of 2030, 2040 and 2050.

The combined effect of these impacts then will be simulated on the electricity system using an integrated electric grid modeling platform.

This project can help to limit the costs associated with transmission system expansion by providing a more accurate assessment of renewable capacity potential

for solar thermal and geothermal resources.

In addition, this project can help utilities and State policymakers determine the most cost effective manner for building climate change resilience into the electricity system, limiting increases in ratepayer electricity costs.

The project partners plan to provide $300,000 in match funding for this effort.

Each of these projects promises to address research on sensitive species and habitats, for renewable energy planning and deployment, analytical tools and technologies to reduce energy-related stresses on aquatic resources, and improve water energy management, and analytical tools and technologies to plan for and minimize the impacts of climate change on the electricity system.

These projects will provide benefits to California Investor-Owned Utility ratepayers consistent with the EPIC guiding principles.

Staff recommends approval of each of these proposed projects and we are happy to answer any questions you may have. Thank you.

CHAIR WEISENMILLER: Great. Well, thank you.

Commissioners, I think, again, as we're getting the EPIC money out that we have another group of exciting projects. Certainly, the one with E3 builds on the modeling that they've done with energy principles over the

last year in a way which is, I think, is very -- it's been very beneficial to us and, at the same time, extending into these areas will be very good.

And, certainly, we'll get other perspectives from the Berkeley work and the Irvine work. And the Irvine work, as I understand it, will look more at the distribution system.

So, anyway, it's a pretty interesting set of stuff here.

And I guess we have one speaker on the phone, Mr. Haberlein, please.

MR. HABERLEIN: Yes, hello, and good afternoon, Commissioners.

My name is Paul Haberlein, from Pattern Energy. I'm the Director of Operations.

And Pattern Energy operates over 2.5 gigawatts of wind capacity, including 366 megawatts in the State of California. Like the greater wind industry, we understand the critical need to further mitigate impacts of all power generation, as well as wind turbines on bat species, other wildlife.

Now, innovation like this, proposed by Frontier Wind, does have the opportunity, you know, potential to increase generation and reduce the need for costly production.

And we've offered up one of our projects in California, the Hatchet Ridge Wind Facility, for validation testing.

And thank you for your consideration and I'm happy to answer any questions you may have.

CHAIR WEISENMILLER: No, that's really good. I mean, obviously, you've been one of the leaders in the wind industry in trying to deal with the interaction between wind turbines and avian species. Going down to Imperial, we've basically seen one of your machines stop as a bird was going into that vicinity.

So, again, it's pretty impressive technology you're doing to try to reduce environmental footprint. So, if this can take it further that would be really good.

MR. HABERLEIN: Good. Well, thank you very much, we're happy to help.

CHAIR WEISENMILLER: Great.

COMMISSIONER HOCHSCHILD: I'd move the item.

COMMISSIONER DOUGLAS: I'll second and I also wanted to just agree, particularly on the project that Pattern Energy spoke to, that it's a really important project and technology.

COMMISSIONER MC ALLISTER: Yeah, I'm really impressed with this group and this group of projects in asking the right questions and trying to answer them in a

rigorous way, and help the system function and still incorporate lots of renewables, and tell us, give us better insight into how things will look going forward. And that will really inform policy across the board at this Commission and elsewhere.

And I want to also just thank and acknowledge the Chair for his leadership on these issues. It's really been digging in, and pressing the issues, and inviting smart people to get involved in this, on the R&D front, to help us solve these big problems -- these big issues. They're not necessarily problems. But just give us better knowledge for better decisions. So, I'm very much in agreement with this item.

CHAIR WEISENMILLER: Well, thank you.

So, I think we have a motion.

COMMISSIONER MC ALLISTER: We have a second.

CHAIR WEISENMILLER: Seconded. Okay, so all those in favor?

(Ayes)

CHAIR WEISENMILLER: So, this passes five to zero.

Thanks, Lillian.

Let's go on to 19, which is natural gas pipeline safety and damage prevention grants.

Avtar.

MR. BINING: Good afternoon. My name is Avtar Bining. I am with the Research and Development Division of the Energy Commission.

This item I am presenting here today is for solicitation number PON-14-503. The purpose of this solicitation was to solicit proposals that demonstrate natural gas pipeline right-of-way monitoring technologies in a setting and develop programs that provide knowledge regarding pipeline safety and integrity management.

Based on this solicitation, two grants agreements are being recommended. The first grant agreement listed as Item A, is with Gas Technology Institute for $1,048,978 grant. The purpose of this agreement is to fund the deployment and field demonstration of low-cost sensor system that alerts the gas pipeline operator to the presence of threats in the pipeline right-of-way.

The system will variously monitor vibrations and electrical changes on a pipeline and will also monitor the status of the excavation machinery.

This agreement will result in increased safety, greater reliability and better pipeline management practices for pipeline operators.

The second grant agreement, listed as Item B, is with Acellent Technologies, Inc., of Sunnyvale, California, for $1,633,093 grant.

The purpose of this agreement is to fund the deployment and field testing of the combined active and passive impact damage detection system called Real-time Active Pipeline Integrity Detection System, developed by Acellent.

This system will detect the impacts due to encroachments on pipelines and will actively scan any hot spots of degradation monitoring of the pipeline.

Acellent is providing $103,000 as match funds for this project. This agreement will result in lower costs and increased safety.

I request your approval of these two agreements. Dr. Cas Cheung, Vice-President of Acellent Technology, Inc., is also here today.

I will be happy to answer your questions that you might have for me, and Dr. Cheung will also be, I'm sure, happy to answer any questions that you might have for him, also. Thank you.

CHAIR WEISENMILLER: Great, thank you. You know, I was going to note to the Commissioners, just after San Bruno we got into conversations with the PUC about how to really focus some of the gas research in the area of safety. So, this is another step in that direction. Obviously, it's important to really move modern technology into this issue, which I think this does quite nicely.

COMMISSIONER HOCHSCHILD: Yeah, the challenge continues, right, there was just another explosion recently, right.

CHAIR WEISENMILLER: Yeah, the one in Fresno. I guess there's some questions on why but, you know, it's definitely something where, with the aging system, and once the stuff's in the ground trying to determine exactly where it is, there's been some challenges there. Where it is and what it is, I guess is the best way of putting it.

COMMISSIONER MC ALLISTER: Great. I'll move Item 19.

COMMISSIONER HOCHSCHILD: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This item passes five to zero.

Thank you. Thank you for being here, appreciate that.

MR. BINING: Thank you very much.

CHAIR WEISENMILLER: Let's go on to Item 20, Gas Technology Institute.

Rajesh.

MR. KAPOOR: Good afternoon, Commissioners. I'm Rajesh Kapoor, from Energy Research Office.

Staff is recommending approval of an agreement in

the amount of $950,000. This project is a result of a competitive solicitation. The project is demonstration of an advanced low NOx ribbon burner combustion system for industrial bakeries.

The recipient is Gas Technology Institute and demonstration site is Kroger Bakery in Southern California, near Los Angeles.

Ribbon burners are widely used in industrial cooking and grind applications. These burners use a long, tin slot, filled with metal strips to create a narrow arrow of short frames. This project will use the ribbon burner design that removes the excess heat in the combustion system and reduces the process temperature.

This project will modify the air composition by recirculation of carbon dioxide and other combustion products from an exhaust stream. This approach is expected to improve the NOx emissions without sacrificing chancy reliability, safety, and also being cost effective.

There are more than 700 baking facilities nationwide. Gas Technology Institute has demonstrated in the lab that advanced low NOx ribbon burners system reduces NOx production by more than 50 percent.

The estimated savings and reductions, with 30 percent market penetration in the California baking and heating industry are, natural gas reductions of 1.3 million

therms by the year, carbon emission reductions of 7,700 tons by the year, and NOx emission reductions of 2,400 tons by the year.

For this project, PIER will provide $950,000 natural gas funding and Gas Technology Institute will provide $235,000 in match funding. The project term is 45 months.

If you have any questions, I will be happy to answer them. Thank you.

CHAIR WEISENMILLER: Thank you.

Commissioners, any questions or comments?

COMMISSIONER MC ALLISTER: Good stuff.

COMMISSIONER SCOTT: I move approval of Item 20.

COMMISSIONER MC ALLISTER: I'll second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: This passes five to zero.

Thank you.

Let's go on to the Minutes. Possible approval of April 8th, 2015 Minutes.

COMMISSIONER MC ALLISTER: I'll move the Minutes.

COMMISSIONER SCOTT: Second.

CHAIR WEISENMILLER: All those in favor?

(Ayes)

CHAIR WEISENMILLER: So, again, five to zero.

So, let's do Lead Commissioner and Presiding Member reports. Commissioner Scott.

COMMISSIONER SCOTT: Great. Well, I will provide just a couple highlights of some of the things that I've been up to. Just last week, the Governor's Office had their Zero Emission Vehicle Summit. That was fantastic. I had an opportunity to help facilitate one of the panels and then give some closing remarks.

It was great because we had a chance to see the progress that's been made since the Original Action Plan came out, since we had the ZEV Summit last year and then the ZEV Summit this year.

There's a new Action Plan in place and they're looking for comments from folks on that new Action Plan to kind of get us from 2015 over to the next few years.

There was a lot of energy, a lot of positive -- a lot of positive energy and a lot of really good momentum in the room, and I think people felt pretty inspired by how much we have accomplished so far, and kind of ready to roll up their sleeves and keep on working in that space. And so, it was a good summit. That was last Monday.

Following on that, on Thursday, there was the National Fuel Cell Symposium. And fuel cells are also zero emission. And that was a chance, really, to talk about -- mostly we talked about stationary fuel cells, but we did a

little bit of conversation on mobile fuel cells, as well, and the different types of fuel that you can use in them. And that was also a really great chance to bring together all of the folks kind of on the stationary side, who are also working on these zero emission solutions.

And I got to give closing remarks at that, too, which was also very fun.

Let's see, I had a chance to tour the PG&E Gas Operation Center. This was really neat. I mean, the technology that they have there is very innovative. It looks a lot like the CAISO room. If you look at kind of their control room that's what they have for natural gas. That's different than other folks, other gas providers have in this space to be able to monitor what's going on. And I thank Valerie for helping to set that up.

So, that was just really interesting. If you all haven't had a chance to see it, I would highly recommend that you do get to go see it.

And they had a map there, Commissioner Douglas, that kind of reminded me of the DRECP mapping efforts that we have. I mean, it has a lot of real-time information, of course, but all looking at the natural gas pipeline and different things that have the ability to impact the natural gas pipeline. And it includes where all of the drivers, and repairmen, and other folks, maintenance folks

are. And so, it's almost like Uber in terms of, uh-oh, if there's an issue here, this is the person who's closest. And they've been able to really decrease the amount of time that it takes to respond to natural gas situations.

And so, it was just a really neat tour to go and see.

I will highlight, also, that we -- two things on working with the DOD, and maybe I'll let the Chair and also Commissioner Hochschild weigh in here.

We had a chance, last week, to go visit 29 Palms, which was a really interesting base. It is the world's largest live fire training base in the world. And so, there was all kinds of things going on there.

But they're also working on energy efficiency, putting in place photovoltaics. And they actually have a lot of spaces where they could put some photovoltaics, but there's no need for that extra power right now. And so they have, they've kind of built it out so that you can add PV to it, when there's a need for it. So, they're being really proactive in terms of that. That was really neat to see.

The other thing that they have, that I thought was great, was this recycling program for -- after they've used all of the live fire ammunition, they go -- they pick it up and they bring it back, and they recycle all of it.

And so, you should see these recycle bins. I mean, they were kind of crazy, the stuff that was put inside of those.

COMMISSIONER MC ALLISTER: They can't just put it in the city, in the city collection?

COMMISSIONER SCOTT: Right?

(Laughter)

COMMISSIONER SCOTT: And what was really neat is they make a couple of million dollars off of this because, you know, it's brass and other types of metals. And then they put that money back to the base.

And so, a few years ago, the folks who live at the base decided they really wanted to upgrade the play facilities for the children that go there. And so, now they have kind of a fun water park that they can -- not like a great, big waterpark, you know, but kind of a small park, a park that has water features in it. But it's brand-new. And so, they're able to take that money from the recycling and then put it back into the base. And I thought that was really neat.

And I don't know if you want to add anything from our visit?

Yeah, they were really great. They spent a lot of time talking to us about the different things that they're working on, so I appreciate the time they spent.

And then we had our Department of Navy Energy

Commission meeting in San Diego, not so long ago. And that's also just really exciting. The military is great partners with us on all kinds of things, from that CO2 washing machine that we just talked about, to trying to figure out some things we can do in transportation, in our fleets, micro grids, all of that. And so we had, I thought, another really good meeting with Department of Navy a few weeks ago.

So, those are a few highlights for me.

COMMISSIONER MC ALLISTER: Great. Let's see, I wanted to just make a few points and talk about, a little bit, about what's going on in my realms. Mostly, or a lot of what I've been doing is, you know, shepherding the IEPR along.

And part of the exciting aspect of that, for me, is really combining efforts with some of the critical efficiency issues, and leveraging the IEPR to kind of give it a little more gravitas, and a little more dissemination of the conversation, participation from the stakeholders, and et cetera.

So, on the 14th of April we had a great workshop about data. There's a lot of issues in the IEPR, or in the AB 758 Action Plan ab out data, we hear from stakeholders on many, many fronts that, you know, they want -- they would like us, and our sister agencies, to find ways to

inform the marketplace better so it can engage in the most productive ways.

So, we're looking at a lot of fronts to see how we can push on that issue.

On the 7th of this month we had an all-day workshop that was really a benchmarking and disclosure, so that's a key policy for the existing buildings.

And in the afternoon, on the Local Government Challenge, which is a program the 758 Action Plan is proposing to develop, really more broadly than that, leveraging local government authority over the existing building stock is a really key strategy for improving its performance. And I think lock governments are incredibly diverse and varied. And we hear from many of them, and they're doing wonderful things that we want to support and find ways to leverage, and sort of develop as best practices, and permit, or allow other jurisdictions to use them.

So, those were very productive discussions. We're building a record on some of these issues and we're going to try to really get some programmatic, you know, steel in the ground, as it were, to develop some programmatic infrastructure to help push those issues forward and help get them some resources.

Upcoming workshops in the IEPR on zero net energy

next week. Also, the natural gas outlook, obviously a key one. Every IEPR, but at least as much this one as any. Likely -- well, I would say more so, really.

And, let's see, the traditional forecasting of natural gas obviously part of that, but the forecasting is, obviously, really critical and we're trying to develop that technology further, as the Chair's familiar with. It's a long road, but I think we're traveling well down it.

And then, finally, we had a renewables workshop in the IEPR that was, I think, really interesting. It had a lot of great discussion in it. And it was Commissioner Hochschild and I sort of were the sponsors of it, if you were. But I think all -- I don't think you were there, Commissioner Scott. But, yeah, that's okay, there was no expectation.

But we got good participation. Yeah, no guilt necessary. But I think it was just a very productive discussion, a lot of good, very diverse viewpoints and some consensus about some of the key issues, I think, going forward. And an appreciation of some of the challenges we confront, but I think a sense that they're all quite solvable with the right policies and the right coordination.

And we also had a representative from the PUC on the dais, and then from the ISO. And I think up and down

the kind of chain of supply and use there's, you know, down to behind-the-meter stuff there's just a lot of engagement on the issue.

And as we look at how to implement the Governor's first goal on 50 percent renewables, there's just a lot of good ideas and I think a sense that it's very doable, and we're going to move forward to make it happen.

Let's see, just a couple other things. Title 20 rulemaking. You know, we voted on a couple of things, one thing today, and there are several of those sort of marching forward in the middle of the computer, monitors and displays ones. And I want to just highlight that one.

We had a workshop on 4/15 to roll out the staff report and get some comments on that, preliminarily. And there has been already and there will continue to be a lot of substantive interaction with stakeholders, and this is kind of my strong interest to make sure that we give industry and stakeholders every opportunity to weight in so that we develop the most robust record possible, and that we can inform staff recommendations and Commissioner decisions about what the best path forward is, taking the market developments into account.

And I think, and also just to get to the end point and have it be relatively unassailable in terms of having done our due diligence and having a very well-

supported decision. So, I think computer monitors and displays certainly fits in that category. It's an important sector of our State.

And then, let's see, on April 16th I spoke at the 2030 and Beyond Conference that the State Bar Environmental Section had. That was quite interesting. You know, lawyers always have unique perspectives that are very detailed and questions very detailed about what's going on in the policy world. It's very relevant for their businesses and their just day-to-day work for their clients. And so, that was a very good discussion. The Governor's Office was there a number of our other well-known stakeholders I think were there, as well, so it was quite substantive.

Let's see, then on the 22nd, actually Commissioner Hochschild and I went down to Southern California to ribbon-cut a Meritage new homes project. And I thought that was super interesting. Zero net energy homes, lots of cutting edge technology incorporated in them. And, you know, I think -- well, one of the things that they're doing there is looking at interoperability with the grid so the homes roll as a consumer and supplier of energy from and to the grid.

And Edison and EPRI are working on the smart grid aspects of that and they are locating storage at different

places in the distribution grid, either at the home or sort of at a group of homes at the transformer to see how they can dispatch, and use, and load, and unload, and sort of use the battery to improve service quality and perhaps, you know, offset investment down the road and help the distribution system.

So, we're very much looking forward to keeping in touch with EPRI and Edison on that project as it goes forward. A lot of good learning potential there.

Finally, on the 28th and 29th I was in Austin, Texas, at the StEAB, the State Energy Advisory Board meeting. That's the Department of Energy has a board that advises them on issues, really over the energy efficiency and renewable energy activities, EERE.

So, Secretary -- or Assistant Secretary Danielson is very engaged with that, it's great to see, actually listening to the advice and engaging with the StEAB to ask difficult questions and get folks' opinions of them. So, that's a really good opportunity for us to put in the California perspective on that.

It was also very interesting to get around Austin and understand ERCOT a little bit more. It's sort of like a parallel universe a little bit to California, a very different -- different regulatory regime. Obviously, different politics. Although Austin, I think, is a little

dot of blue in a sea of red, and folks there are very conscious of that fact. Austin is doing a lot of really innovative things at the city level and they have a municipal utility that is quite innovative. So, on the energy efficiency front they're doing a lot.

And they really need to do a lot there because you would not believe the consumption levels that they have there. And the AC is just such a bigger deal there than it is here, and they have the humidity to deal with, too. So, the average consumptions are like threefold what they are in California, if not more. You know, definitely in the summer. But, certainly, that is a huge incentive for them to build more efficient buildings and get the systems right so they don't get funky condensation and all that. And so, they're just doing a lot of innovative things to grasp that, and starting to build some quite beautiful, and well-made, well-designed homes and commercial properties.

So, yeah, anyway, I guess that's all I had for the moment. Yeah, thanks.

CHAIR WEISENMILLER: Yeah, a couple of things. Just following up, first, on Janea's, on the PG&E dispatch center. The ISO control, now, is probably about four years old. And those of us, you know, who have computers and stuff, the question becomes what is the next generation there? I'm sure they have people thinking about that.

But I found the PG&E center to be interesting. I mean, normally, gas lies about a decade behind electricity in these types of things. It's obviously much less demanding, things move a couple hundred miles an hour, not the speed of light. So, you know, there's just a lot more storage, too, in the pipelines than the power system.

But to the extent they have a very complicated censure system, trying to get into that, and then get algorithms that can basically start responding to things on a much faster scale than humans can.

And so, presumably, I mean thinking about where ultimately the ISO will need to go, where we need to go on the distribution system, again you need to have much more -- a lot more sensors, a lot more sophisticated software, but the ability to respond to stuff, you know, well below the timing you would expect a human operator to deal with.

So, I thought the PG&E system was interesting, at least a step in that direction.

In terms of comments on stuff, so I testified yesterday before a joint water hearing, Senate Resources, you know, Fern Pavley -- and it was myself -- actually, I should say Felicia Marcus testified, Mark Cohen. And, you know, Fish and Wildlife, and I was there, too, testifying somewhat. But, you know, they obviously -- it was a

couple-hour session. There was a lot of interest on stuff. I mean, I sort of presented what we're doing under the Governor's Executive Order and, you know, people were very happy with that. Obviously, a lot of questions back and forth on -- I'm afraid we're sort of at the stage, now, of as people look at the severity of the cutbacks, and whether or not this is the new normal, a lot of the, well, wait a minute, you know, is the problem ag? Is the problem urban? Or if it is my urban area is conserving quite a bit, you know, why is Monterey using this amount compared to other areas, and so with the cutbacks.

And so, I thought Felicia did a very good job discussing that, a lot of discussion on storage. Where's the storage? Or, you know, we've been there in the ARRA context. Where's the money that we allocated to you? Can you point out how it's being spent, now? Not, obviously, we're sort of late in the water context, in that sense.

But I was happy to point out that we did -- the four things, we did adopt the Appliance Standards. I noted today we were going to do the siting contingency side. And then we have the rebate program and the WECC program. We do have pages up on the website on both of those, which actually now are in English and Spanish. We're going to add additional language as we go forward.

So, anyway, people were pretty happy with our

progress to date on that. But again, it's going to be a sprint. You know, obviously, the details of this will be worked out through the May revise process, in combination with the Legislature. And about as soon as we get it done, you know, we almost need to start getting money out the day it's passed. So, we're going to have some workshops to help frame things.

But anyway, it's also pretty clear the more you get into the water situation, the more dreary it is. You know, so basically, I think these are important ways to really help mitigate some of those impacts.

I think, following up on what Commissioner Scott said on the Marine and Navy, every six months we get together, you know, with the Assistant Secretary of the Navy, Denny McGinn. And really, at this point, it's more or less a normalized relationship. You know, this is like our third one and we have sort of monthly calls on stuff so, again, it's very much -- a very good working relationship that's fairly mature and just, you know, sort of marching along and trying to click off things that are on our objectives.

COMMISSIONER HOCHSCHILD: Yeah, on that point, they joked with me after our visit that there was a -- they would have had armed Marines trying to stop Energy Commission staff from getting onto bases, and now

they're -- in many cases they've gone beyond where we're at. So, they've just instituted the one-gallon-a-minute faucet standard for the barracks, and so forth. So, they're actually moving very quickly as both of us, I think, were very impressed.

CHAIR WEISENMILLER: Oh, no, we've actually done some media -- the Governor's Office has done media vets highlighting how well the military has really cut back on their water usage on the bases in California. They're a very good partner on that. Certainly, they could be a key part of some of our fire response.

So, again, it's a very good relationship and a real way to showcase and move some of our technologies out into the real world.

I was going to, also, Andrew and I had a memorable workshop on nuclear as part of the IEPR.

COMMISSIONER MC ALLISTER: Not memorable enough for me to bring it up in my comments, I guess, but it was quite good.

CHAIR WEISENMILLER: It was good of you to defer to me.

COMMISSIONER MC ALLISTER: Yes, exactly.

CHAIR WEISENMILLER: But anyway, there was a lot of questions or concern on seismic issues at Diablo, obviously. Then there was, you know, none of -- I keep

saying none of these plants were really designed as high-level waste disposal sites. And we've been consistently saying get the stuff out of the spent fuel into the casts, the spent fuel ponds are not in the containment vessels, and there's a lot of nasty stuff there.

So, at least in the cast it's safer. There's certainly a strong public sentiment around San Onofre to move it elsewhere. You know, they suggested a military base, which puzzled me, since I'd just been at Pendleton. You know, I always thought that was a military base. But anyway, but somewhere, presuming, much more distant. And, you know, actually encouraging us to try to find a site in California, which strikes me as -- having seen the failure of the Federal efforts, albeit for permanent, long-term storage, and also the failure of the State effort a number of years ago to find a low-level waste site in California, it's sort of a really daunting, if not impossible challenge, to find an interim high-level site in California. But, certainly, people are trying to volunteer us for that.

And the last thing, you know, I think everyone's aware that one of the really exciting announcements in the last month was, you know, I've been working on the Energy Imbalance Market Transitional Committee and there's been a lot of progress on that front. You know, I mean a huge --

we were up there. At this point, Arizona has -- APS is looking at joining the energy imbalance market. You know, and at the same time probably the biggest step forward was basically PacifiCorp announcing it wanted to become a full participant in the ISO. And that's sort of revolutionary. It's certainly faster, much faster than I thought, and much more complicated than I thought in terms of it's multi-state.

But it really -- you know, the imbalance market really deals with the last 10 or 15 minutes. And so, if you have more wind, or more solar, or more or less than you expect, you're trading that imbalance, so relatively small.

But full participation means that when the day before, when you're deciding what power plants to commit or turn on, you would do that again more on a regional basis.

And so, where we're looking to really have a regional impact on greenhouse gas emissions, this is key. You know, again, it's sort of when you look at a lot of the modeling people just sort of assume that the whole west is sort of one dispatch -- you know, commitment and dispatch. And, you know, sort of on the one hand you're looking at it and we're struggling to get energy imbalance markets. But this is a first step towards really getting that regional dispatch, which is just huge in terms of greenhouse gas, and cost savings.

And, frankly, looking at some of our over-gen issues, it becomes a place to put it fast. You know, it's not one of those, you know, if you think about it maybe someday we could get power to gas in its place. Or, you know, I keep looking at sort of the statistics that if we have 600,000 electric vehicles, that's about 1,000 megawatts. You know, so how fast are we getting electric vehicles? You know, or desal. I mean, we had coming out of Poseidon here.

But I mean, basically, it would take 30 Poseidon level, Carlsbad level desal plants in California to get to 1,000 megawatts, which is, again, well behind the sphere of what's possible.

COMMISSIONER MC ALLISTER: Yeah, I wanted to comment on that.

CHAIR WEISENMILLER: Yeah.

COMMISSIONER MC ALLISTER: The west wide. Because, you know, California has a fair amount of latitude variation, but not a lot of longitude variation and that, getting both directions, you know, when we're relying more and more on natural resources which is, you know, renewable energy that we need to take advantage of and we need that diversity. I think that's a really huge step in terms of the ISO expansion, potential ISO expansion and kind of getting that additional level of diversity.

And then driving, also, some transmission investments that are needed to leverage it.

CHAIR WEISENMILLER: Yeah. No, it's sort of -- in looking at solar, again, as you look across the west in terms of when the sun's rising and setting, or when loads are coming up and down, having that east/west gives us a lot more diversity than north/south.

And at the same time, if you look at the wind characteristics, a lot of ours are the coastal passes. But as you connect, you know, throughout more of the west, or Baja, you know, you're getting a much different wind profile which, again, gives us a lot of benefit.

So, as I said, it's a real -- I would have to say one of the bigger game changes of the year. A lot to do. I mean, it's sort of definitely watching the ISO's steps, I'll say sprint to keep up with all of this, in terms of the technical and regulatory challenges.

COMMISSIONER DOUGLAS: So, I just have one or two brief reports. I had the opportunity to speak at a Public Advisory Committee meeting for the Commission for Environmental Cooperation, the other CEC. It's an organization that's tri-national between the U.S., Mexico and Canada, set up under the North American Free Trade Agreement. And they met in Monterey, Mexico, and invited me to speak about California's renewable energy efforts and

achievements. And so, I was pleased to do that.

And also, of course, highlighted our MOU with Mexico and our relationships with a number of the Mexican agencies working with us on energy climate, and other issues. So, that was a really nice opportunity to make some of those connections and provide some information about California's renewable energy policies, goals and achievements in that forum.

I should also say that this May Is Bike Month. We are almost halfway through May Is Bike Month. The Energy Commission has a team. If you work at the Commission and have not yet signed up for the team, those of us who ride electric bikes, our miles count, too. So, we should just all keep track, log our miles, and help the Capitol Region get to its biking goal of, I think, 2 million miles.

COMMISSIONER MC ALLISTER: So, there is -- again, you know, there is no discount to those miles?

COMMISSIONER DOUGLAS: There is no discount. So, if you want to borrow my bike, Andrew, you're welcome.

(Laughter)

COMMISSIONER HOCHSCHILD: Well, you know, if Scarlett Johansson was helping sell the electric motorcycles, Commissioner Douglas is helping sell the electric bikes because she's the reason I got one.

Just a few updates. One, I just wanted to thank Rob and Mark Hutchison for -- we put the sign on the front of the building, dedicated the Warren-Alquist State Energy Building. And we will be doing a public dedication ceremony, open to the public and students, at a date soon to be arrived at. That's sort of the final dedication, facility dedication. This room and, obviously, the other hearing room were already dedicated as part of our 40th. So, stay tuned for more on that.

A few interesting visits. Rob and I went to Google last week. I gave a talk there to the energy team. They have about 50 people working on energy. And, actually, they're doing quite a lot on electric vehicles. They have 30,000 employees, 1,500 electric chargers. And they basically have a system where you drive in, you plug your car in, and then you dial in the hour by which you plan to leave, four o'clock, five o'clock, whatever the time may be. And then, they have a very sophisticated algorithm of when and how the vehicle gets charged. You just care that it's fully charged by the time you leave.

But they can, you know, use a combination of pressing and they're own renewable generation to meet that need. And they're aiming to scale this. So, I think it's exciting to see.

Also, had a very productive meeting with

Commissioner McAllister down in San Diego. Actually, sorry, were you at the -- we went to the Meritage one. I'm talking about the PACE one, I don't think you were at.

We met with Renovate America, which is the largest PACE provider in the United States, and just huge, huge growth happening now. So, that's $600 million in PACE finance projects in California, of which they've done, you know, more than 90 percent of that. And 30,000 homes have been done, only 11 defaults.

And they are basically doubling in size, so incredible growth. And now, 75 percent of the State either has a PACE program or is actively developing one.

So, I'm very bullish about the future of that policy which, you know, the Governor's support made a critical difference there in having this loan loss reserve program.

And so, I think there's a very bright future for that and that will obviously help with the very bold goal of doubling energy efficiency on existing buildings.

And then, finally, another site visit I found very instructive, we met with a builder -- I've been meeting with a lot of the State's builders. So, there's a builder in Los Angeles, called City Ventures, which is the largest builder in the country doing all-electric homes. So, they've sold about 700 electric homes just in the last

two years.

And there's basically four appliances that use gas in your house today, your furnace, your hot water heater, your dryer, and your oven/stove. And the electric alternative for all four of those is excellent now. As you might imagine, the number one customer concern is around the stove. And so what they do is they bring in a chef to cook an amazing meal on this electric induction ovens, and these things have been selling like hotcakes.

The avoided cost for a new home when you don't have to run the gas line is $4,500. So, that's the cost to run the gas to the home and then pipe inside the ho me.

And so, they're business is taking off like a rocket and somebody you should really watch closely. And I think that was it.

Well, the one finally -- yeah, actually, when I was in L.A. we met -- there was trip to visit Australia last year, which I got invited on, but I could not join, to look at sort of renewable in the drought, and some of the issues they've have.

So, Australia has a climate, actually, that's fairly similar to California's population. Thought, it turns out the water use per customer is almost identical, had been almost identical. Then they had a 12-year drought, the millennium drought. And their response was

very instructive. They reduced water use from 90 gallons per person per day to 30, and did a number of things which I think over time we will be looking at. Among them are rainwater collection systems.

So, they went from having, basically, no rooftop rainwater collection systems to, today, 40 percent of the homes in Australia have that. And they had that -- they have those cisterns and they were heavily subsidized. They sort of did a California Solar Initiative for rainwater collection. And a lot of desal, a lot of desalination plants got built. So, instructive to learn from other countries. That was my first time hearing more about that.

And I think that's it for me.

CHAIR WEISENMILLER: Okay. Well, first, I wanted to thank our Public Adviser Intern for his service today.

Let's go to Chief Counsel's report.

MS. VACCARO: Nothing to report.

CHAIR WEISENMILLER: Executive Director Report?

MR. OGLESBY: Just a brief update on an item that you asked me to keep you apprised of, as a result of the February 25th Business Meeting, where we had a petition, and several public commenters who had issues with the 2013 Building Standards.

And the Commission directed staff to basically convene a workshop. And I'll give you an update on that.

The workshop was held and we also opened a docket to receive written comments. It was held on April 10th. We had 147 stakeholders who participated, about 30 in person, and about 117 that participated via WebEx.

Where we are right now is staff is digesting the comments that were received at -- both in writing, through the docket, and at that. And I'll be giving you a further update, likely in writing, in the near future.

COMMISSIONER MC ALLISTER: Thanks for that, Rob. I appreciate staff and you moving forward with that.

CHAIR WEISENMILLER: Yeah, thanks.

Public Adviser Report?

MR. PITTARD: We have nothing to report, thank you.

CHAIR WEISENMILLER: Public comment? Please?

MR. JACKSON: Hi, I'll make this brief. My name's Ade Jackson. I'm a member of Phi Beta Sigma Fraternity, Incorporated. I'm the Vice-President of the Lambda Kappa Chapter, and I'm the new Intern for the California State Energy Commission, in the Public Adviser's Office. I just wanted to make sure that I just thanked everybody, I was really in attendance, for giving me the opportunity to see the work that you guys do, both for California, as well as, you know, under-privileged communities. And I know you guys are removed from the

public eye, but that doesn't make your work not important. And it's inspiring to a young person, like me, and an undergraduate, being able to see the power of knowledge and people that really care about their community, about their state, about the issues that they're involved in because that's not the narrative that's often played up in the media.

So, I just wanted to thank you guys for the opportunity and I look forward to working here in the future. Thank you.

CHAIR WEISENMILLER: Thank you. Thanks again for your public service today.

Okay, so the meeting's adjourned.

(Whereupon, at 1:10 p.m., the business meeting was adjourned.)

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REPORTER'S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

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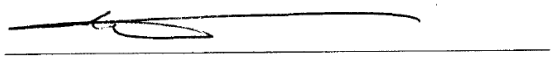

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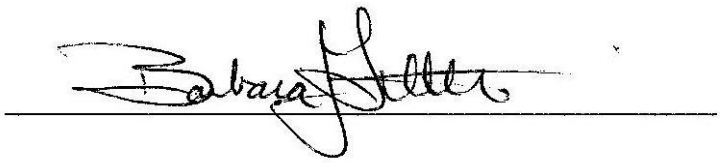

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