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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:	)
	)18-BUSMTG-01
Business Meeting	)
	)

CALIFORNIA ENERGY COMMISSION

THE WARREN-ALQUIST STATE ENERGY BUILDING

ART ROSENFELD HEARING ROOM - FIRST FLOOR

1516 NINTH STREET

SACRAMENTO, CALIFORNIA 95814

WEDNESDAY, FEBRUARY 21, 2018

9:00 A.M.

Reported by:
Peter Petty

APPEARANCES

Commissioners

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

Staff Present: (* Via WebEx)

Drew Bohan, Executive Director
Kourtney Vaccaro, Chief Counsel
Alana Mathews, Public Adviser
Eunice Murimi, Public Adviser's Office
Cody Goldthrite, Secretariat

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Pursuant to Government Code section 11126(e), the Energy Commission may also discuss any judicial or administrative proceeding that was formally initiated after this agenda was published; or determine whether facts and circumstances exist that warrant the initiation of litigation, or that constitute a significant exposure to litigation against the Commission, which might include:

a. Claims filed at, and rejected by, the Victim Compensation and Government Claims Board against a number of defendants including the Energy Commission relating to the gas leak at Aliso Canyon

b. The U.S. Department of Energy's actions to delay effective dates and failures to complete certain energy conservation standards and test procedures for appliances.

c. The licensing process for a nuclear waste storage repository at Yucca Mountain, Nevada.

d. Alternative and Renewable Fuel and Vehicle Technology Program grant ARV-10-016 with the City of San Jose, including its subcontractor JUM Global, and the lawsuit between the two (5:16-cv-01462-HRL, United States District Court, Northern District of California [San Jose]).

I N D E X (Cont.)

P R O C E E D I N G S

FEBRUARY 21, 2018 9:05 a.m.

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

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

CHAIRMAN WEISENMILLER: Let's start out with a minute of silence for the poor kids in Florida.

(Whereupon, a moment of silence was observed.)

CHAIRMAN WEISENMILLER: Okay. So we've got a busy schedule today. And I think most of -- at this stage we're going to walk through the items on the agenda. Let's start with that Consent.

COMMISSIONER DOUGLAS: I move consent.

COMMISSIONER MCALLISTER: I'll second.

CHAIRMAN WEISENMILLER: Andrew, (indiscernible)

COMMISSIONER MCALLISTER: Oh, yes.

MS. VACCARO: Actually, also --

COMMISSIONER MCALLISTER: Yeah, so I have to -- I've got it. I'm going to recuse myself from item 1f, the Alliance to Save Energy. I'm actually on the Board of that entity and this is the annual membership, but I'm going to recuse from that.

CHAIRMAN WEISENMILLER: And so we're going to

split the Consent into --

COMMISSIONER MCALLISTER: So I'll move --

CHAIRMAN WEISENMILLER: -- first everything but f and then we'll do f.

COMMISSIONER MCALLISTER: Yes, so I'll move 1a through e.

COMMISSIONER DOUGLAS: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: Excuse me, any comment on that item?

(No audible response.)

Any comment on 1f?

(No audible response.)

CHAIRMAN WEISENMILLER: Okay, so let's wait for Commissioner McAllister.

COMMISSIONER DOUGLAS: All right. I move Item 1f.

COMMISSIONER SCOTT: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: So 1f also is approved 4-0. The rest of it is 5-0.

So let's go to Item 2, Energy Commission Committee appointees.

MS. VACCARO: Good morning Chair Weisenmiller, Commissioners. I'm Kourtney Vaccaro, with the Chief Counsel's Office. And Agenda Item 2 presents for your consideration the possible appointment of a two Commissioner committee to preside over a proceeding involving California's Renewables Portfolio Standard, also known as the RPS.

So more specifically, on or about January 9th, 2018, the Energy Commission's Executive Director served on the Stockton Port District, a complaint alleging non-compliance with the RPS for what's deemed Compliance Period 1 January 1st, 2011 through December 31st, 2013.

So just in very broad brush strokes the complaint alleges that the Port District was required to, but did not procure electricity products from eligible renewable energy resources sufficient to meet or exceed an average of 20 percent of its retail sales. The complaint further alleges that the Port District did not meet mandated portfolio balance requirements. And finally, the complaint alleges that the Port District did not adopt and apply optional compliance measures that would excuse its procurement deficits.

So because of all of this the Port District is entitled to a hearing either before the full Commission, before a designated committee or before a hearing officer.

I believe in my role as Chief Counsel that this matter is definitely one of first impression and it is an important matter that warrants the attention of a designated committee presiding together with a hearing officer.

The only matter before you to consider and act on though, would be the designation of a committee. And pursuant to our regulations and our custom and practice, the Chair would subsequently, outside of the Business Meeting, make the appointment of the hearing officer.

With that, I'm happy to answer any questions you might have.

And I'm not sure, I think possibly someone from the Port District might be here, but I don't know that for sure. So you might want inquire.

CHAIRMAN WEISENMILLER: Okay.

Is anyone from the Port District here or on the line who wants to make a comment?

(No audible response.)

CHAIRMAN WEISENMILLER: Apparently not, so let's move forward for a committee. I will select Commissioner Douglas to be the Lead and Commissioner Hochschild to be the second member on that committee.

COMMISSIONER HOCHSCHILD: So moved

COMMISSIONER SCOTT: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This item passes 5-0.

Let's go on to Item 3, which is the California Energy Demand 2018 to 2030 Revised Electricity Forecast, Chris?

MR. KAVALEC: Good morning. I am Chris Kavalec, from the Energy Assessments Division. And I'm here to propose adoption of the California Energy Demand 2018 to 2030 Revised Electricity and Natural Gas Demand Forecast, or CED 2107 for short. I want to give a brief slide presentation and talk about how the forecast is used, the process we went through, changes we've made since the last forecast, a summary of the forecast and the next steps.

Uses of the forecast listed here, what we used to call the long-term procurement process is sort of enveloped by, and expanded upon, by integrated resource planning and distributed resource planning.

We started this process way back in October of 2016 with our Forms and Instructions Workshop where we request certain data and other information from the utilities. And since then we've had six IEPR workshops, including those dedicated to transportation.

Our Demand Analysis Working Group meetings, meeting on technical issues, guidance from the Joint Agency Steering Committee, our process alignments for all these

important processes, integrated resource planning and distributed resource planning, transmission planning. We're continuing to work to try and get all these process aligned, so we don't have any holdups and products are ready to be transferred from one process to another in a timely fashion and other more informal stakeholder discussions.

As always, we try to incorporate all the important policy initiatives within our forecast, including the building codes and appliance standards from the Energy Commission, efficiency programs, other initiatives. And I should add to that SB 350, which was a big topic this year. Incentive programs for distributed generation, demand response incentives for zero emission vehicles. And also electrification that we're seeing in the ports, in the airports and high speed rail and so on, are integrated into our forecast.

Probably the biggest change or improvement we've made since the 2016 forecast, our forecast update of 2016 or CEDU 2016, is a model to forecast hourly loads for the three IOU transmission access charge areas. So with this model, we're not only producing projections of hourly consumption load, but we're adjusting those by various demand modifiers including PV, electric vehicle consumption, residential time of use pricing and additional

achievable energy efficiency at the hourly level.

With this model we can look at things like the peak shift, in other words the utility peak demand shifting to a later hour, because of photovoltaics and other demand modifiers. As well as the ramp-up period, since we have a -- we're projecting not just annual totals but actual daily, hourly loads.

In the past, we have put together AAEE estimates for the IOUs and maybe a couple of the POUs. This time we added to that another 36 POUs for a total of 38 POUs to go along with the investor owned utilities.

We did an analysis of efficiency initiatives beyond our traditional AAEE in support of SB 350 targets. And that was brought to us by our Efficiency Division. And this included programs such as PACE, Proposition 39, local government challenge, the greenhouse gas reduction fund and so on.

An analysis was done for all of these initiatives. And we, in the Energy Assessments Division, sat down and decided how many of these savings would be reasonable to include in the forecast. We were pretty conservative in terms of how much of these savings are included, because of the uncertainties involved and the conditionality of a lot of these programs.

We also have another new element, additional

achievable PV, brought to us through the 2019 Title 24 Building Standards, which are going to require a certain percentage of new homes to be equipped with PV. That part does not fit in our baseline or committed forecast, therefore we're calling it additional achievable PV.

We spent a lot of time on the electric vehicle forecast. And we had a DOG subgroup dedicated to that purpose. And there's a lot of action in the community choice aggregator world, that is incorporated into our forecast.

I'm sorry, I skipped ahead. Next please.

UNIDENTIFIED SPEAKER: This one?

MR. KAVALEC: A quick summary of our forecast. First, I'm showing baseline electricity consumption. And by baseline that means a forecast that includes only committed efficiency. Additional, achievable efficiency is a separate piece. When you put the baseline together with the additional achievable, you get a managed forecast.

What I'm showing here are the baseline forecasts, first for electricity consumption. We do three scenarios: a high, mid and a low, shown in green, dark blue and purple there.

And also shown is the mid case from CEDU 2016. And you will notice I'm comparing the two mid cases in dark blue and in red. We have faster growth in our mid case.

And that comes about because of a higher EV forecast, versus the last time. A more bullish industrial forecast from our econ demo experts, which means a higher industrial forecast.

And we made an accounting change for efficiency, so that some of the efficiency savings were moved from the baseline to the AAEE portion, meaning faster consumption growth in the baseline case. Next.

Looking at electricity peak demand, non-coincident meaning it's the simple sum of all the individual planning areas, which may peak at different times. Again, the three baseline cases and in red, the 2016 forecast. And because of higher consumption and because we accounted for the peak shift, we have faster growth in peak demand in the mid case versus the 2016 forecast.

And this slide shows you the impact of the peak shift in the mid demand case. So in other words, had we not accounted for the peak shift with our hourly load forecasting model, our peak forecast would be the light blue. Incorporating in the peak shift pushes us up to the dark blue, so that means an increase by the end of the forecast period by 2030 of around 3,000 megawatts, because of the peak shift. Next.

Electricity sales, we start out lower comparing

again the dark blue and the red versus 2016, because of a higher forecast for PV mainly. But because of a higher consumption growth brought to us by electric vehicles and the other factors I mentioned, growth in the new mid case catches up to the old mid case by around 2024 and goes above it after that. Okay, so those were the baseline forecasts.

Now to move to what we call a managed forecast we have to incorporate additional achievable energy efficiency and additional achievable PV. These are defined, as I mentioned before, incremental to committed savings that are already in the baseline forecast as well as PV. AAEE was developed using -- through the 2017 potential study from the CPUC, POU efficiency goal, sand as I mentioned earlier SB 350 analysis. We developed a total of six scenarios for AAEE. And four for additional achievable PV. And the result of all this are what we call managed or adjusted forecasts for planning purposes.

Here is a list of the scenarios, six, for AAEE. In addition to the five that we typically have done in the past, we also developed a more optimistic what we call mid high plus scenario. So if everything goes well and you make optimistic assumptions about efficiency impacts and what programs will be funded and so on, you get our Scenario 6. And we have AAPV, the four scenarios matching

with AAEE Scenarios 1, 2, 3 and 5.

Now, this graph shows the result in terms of gigawatt hours of savings of all these different AAEE scenarios. The low high and the mid high case here are almost identical. Therefore, it looks like you can see what looks like only five lines, but there are six. So our most optimistic case, the mid high plus, gets us about 50,0000 gigawatt hours by the end of the forecast period. And in our mid-mid case, we're reaching almost 40,000 gigawatt hours. Next.

Additional capacity brought to us through 2019 Title 24, or AAPV, around 2,200 megawatts of additional capacity by the end of the forecast period in the mid case.

Now, here what I'm comparing is our most optimistic scenario for AAEE, to the doubling goals for electricity that we developed around last year. So in the dark blue what that shows is committed savings starting in 2015, since that's the benchmark year for SB 350. And added to those are our most optimistic mid high plus case. And you see we still have a gap by the end of -- by 2029 between the doubling goal and our optimistic efficiency case. So we still have a little ways to go, but this is the first round. And we will be continuing to look at and analyze and measure additional efficiency incentives or initiatives that will get us closer to that doubling

goal.

So our last step, next, is to develop a single forecast set to be used by CAISO and the IOUs for resource planning. And the leadership of the three agencies got together and agreed on this single forecast set. And it consists, number one, of the baseline mid case, combined with mid AAEE and AAPV. And this is for system and flexibility planning. And then a more conservative forecast, consisting of the mid baseline case and low AAEE and AAPV for more localized planning. So that is the recommendation for the planning forecast for resource purposes.

Here you see the single forecast set for sales. This is for the CAISO service territory. Going from an upward sloping forecast to declining forecasts for both the mid low and the mid-mid. And this shows peak going from an upward sloping forecast to basically flat forecasts. Not declining as in the case of sales, because it's pushed up a little bit by the peak shift impact.

Moving forward, next steps, the actual next step will be a little vacation for me, but after that we will develop forecast update later this year. And I wanted to mention one issue while I'm on this topic, that came up recently and has come up in the past. In our forecast we developed disaggregated forecasts for the individual load

serving entities that we post in our 1.1c and 1.5 forms. So this is a disaggregation of our planning area forecasts.

And we had a utility, Silicon Valley, request that we revisit their forecast, because they are expecting some large customers moving in, in the form of data centers. And this happened pretty late in the process, so we were unable to address this and we will look at it for our forecast update later in the year. But I wanted to make a more general point about this. And that is that I want to urge on the record, because issues like this will continue to pop up. I want to urge the smaller utilities to join us in the IEPR process as early as possible, so that we can address these issues.

And I've also suggested to our management that we develop a sort of informal outreach. The smaller utilities, maybe through our data collection process, so that we can keep on top of these issues.

Okay, forecast update. Traditionally, what we're doing is updating our econ-demo and historical data. This year, we're adding to that a new PV and electric vehicle forecast, as well as another look at the dynamic world of CCAs.

Moving to the 2019 IEPR, we're continuing to work on our hourly load models covering more geographies as well as more disaggregated geographies assuming the data comes

in to support that effort. As I mentioned earlier, refining and updating our SB 350 and AB 802 analyses going on in our division. We have commercial and residential surveys going out in the field. And I should also mention our load shape contract that we'll be finishing up this year, providing us a lot of valuable information.

Models updates, revisions and improvements starring this time our residential model, which is badly in need of revamping and we're working on that now. We're always pushing for further geographic disaggregation in our forecast, assuming we have again the data to support that. Other miscellaneous issues that arise.

And with that, I will ask the Commissioners for comments or questions.

CHAIRMAN WEISENMILLER: Thanks, Chris.

Let's first take public comment. And we may have more questions for you as we go along, but let's at least get a complete record here. So let's start with Catherine Hackney.

MS. HACKNEY: Good morning, Chair Weisenmiller, Commissioners. Catherine Hackney, Southern California Edison. Thank you very much for the opportunity to provide comments today.

Three brief areas to comment on. The first is thank you, the second an observation and the third, a

memory.

But first and foremost a thank you to the Commission, to Chris and his team. As Chris noted just a moment ago the forecast provides the foundation for all planning, procurement and infrastructure investment in the state. It really helps shape and inform our energy future and does so in a way that it is current and agile and robust. And certainly what you have before you today represents all of those things and then some.

We've described the demand forecast process in the past as an art and a science. And it is becoming more so of both of those things as we go by. And as you note today in looking at the EV forecast, it is far more robust than it would have been a year or two ago. It will become even more robust with the Governor's new directive to raise the target to five million; inching closer to 7.

(Laughter.)

The CCA forecast again is far more robust than in the past. And I appreciate that Chris notes that we'll be taking a fresh look again later this year to see how it continues to change, so thank you so much for those really significant improvements. Clearly the hourly forecast has made a huge difference and will continue to do so.

The one observation we have with a little bit of a disconnect, would be the apparent anomaly in the peak

shift forecast. PG&E's is about 2,000 megawatts and Edison's is just 600. Our own analysis suggests that it's closer to PG&E's. We've had an early discussion with Chris and the team and look forward to ongoing conversations on that.

The memory I'd like to share with you dates back to 1987, when the newly elected Vice President of Strategic Planning, Jackie Pfannenstiel, former Energy Commissioner, led a discussion on the future of the utility industry. And believe it or not at that time folks were getting really nervous at how quickly things were changing. Jackie was asked, "If you were to paint a portrait of the future of the utility industry, what might it look like?" Her response was as follows, "If I were to paint a portrait it would capture but a moment in time. I would instead impose a musical score." Can you feel the drums, the roar?

What's so beautiful about that is her insight and inspiration is as relevant today as it was 30 years ago. And in the spirit of collaboration, what we've done is taken a portrait of what the future might be, which is taken from the Edison recent Clean Energy and Electrification pathways. And we put that on top of a blank -- sort of core music. And this for Chris and his team to continue to provide insight and inspiration as we move forward. So thank you very much.

CHAIRMAN WEISENMILLER: Okay, thank you. Thank you, again.

Yeah, please. Grant Mack, please come on up.

MR. MACK: Good morning Chairman and Commissioners, Grant Mack with the California Public Utilities Commission. I, like Southern California Edison, would like to commend the Energy Commission on the revised electricity demand forecast, which undertook several areas of new and exciting additional analysis. The Public Utilities Commission, as you know, appreciates a collaboration with the Energy Commission. And we stand ready to help ensure that the timing of future electricity demand forecasts aligns with our new and recently adopted integrated resource planning process. Great job and thank you again.

CHAIRMAN WEISENMILLER: Okay. Thank you.

Let's go to Valerie Winn.

MS. WINN: Good morning, Chair Weisenmiller and Commissioners. Valerie Winn, with Pacific Gas and Electric Company. And like my colleagues, Catherine and Grant, I wanted to also add my thanks to the Energy Commission staff and to really congratulate them on getting this forecast done.

I would note that as has been noted, that we're in a very dynamic industry today and some of the challenges

that we've had over the last month in looking at the forecast and working on collaboratively with the Commission staff is in the area of community choice aggregation. And I think what we're finding is that that's such a dynamic business model shift in the California energy market that continuing to partner with the CEC staff on how to forecast that in a manner that captures that dynamic model, will be very important for us going forward.

Over the course of the last month, we've had numerous conversations with Chris and his team. And we do really want to thank them for their attention to some concerns we had on the CCA modeling and their ability to incorporate some updates there that led us to a position of being able to support adoption of the forecast today.

So we look forward to continuing to work with the team in 2018 to refine the methodologies. And I'm sure there will be something else that comes along that is equally dynamic. EV is certainly one important area. Energy efficiency, well that could be another one. So we'll keep working together and thank you. And we support adoption of this forecast.

CHAIRMAN WEISENMILLER: Thank you.

Delphine?

MS. HOU: Good morning Chair and Commissioners, this is Delphine from the California ISO. We also want to

express our gratitude and thanks to not only the Commission but also CEC staff. Chris, you've earned this vacation. (Laughter.) But certainly also it's been a great collaborative effort from there's so much in this forecast. And the bottom line for California ISO is that having the 8760 granularity really allows us to see important changes on a system such as the peak shift, so that we're able to see where the system needs ramping capability, where we need flexibility. And also the impact of state policy, such as time of use rates and how that impacts not only residential, but also EV adoption. This is very clear and explicit in the forecast.

CAISO is thrilled with the improvements. And we understand it's been a huge lift, so we really want to thank staff. Chris, Siva also working through all the electric vehicle changes, Sylvia's leadership on this, and also definitely our coordination with the PUC. So overall this is a huge improvement for CAISO to be able to have our reliability analysis for the local areas and really see that reliability flow all the way through from forecasting through operational space.

So we appreciate and thank you very much.

CHAIRMAN WEISENMILLER: Okay. Thank you.

Any other comments? Anyone on the phone?

(No audible response.)

Okay. So let's transition to the Commissioners, so in context after our vote I'll talk more about the sort of thank you part of this.

But I think you've heard that we've just done an awful lot on upgrading the forecast this year. And it really shows in an enhanced geographical desegregation and enhanced time of use, going to hourly. We've really, really upgraded what we're doing on the transportation sector. We've upgraded what we're doing on the photovoltaics and certainly have undertaken the doubling of energy efficiency work. And on all those, we've taken significant steps. Whereas as Chris indicated, we're not totally there-there on all these pieces, but again it's been a really massive effort.

We did have one glitch. The PUC, unfortunately decided to try to move the schedule up without talking to us. And one could have easily forecast that was not going to work. Now, which resulted in Chris and crew working throughout the holidays to get this thing done. So again, a lot hats off to them. I think the basic message to the PUC is we do need to enhance better our coordination, but part of it is the expectations part or communications part on their side, as we go forward. But again, I think we're going to get there.

But again I think we're going to get there. But

again, it's just remarkable that we've seen this really explosive growth in photovoltaics and energy efficiency, which are decreasing load at the same time we're really trying to grow the electric vehicle market, which is at the same time increasing load. And you're all the combinations thereof and the questions of the timing. So it requires a lot of analysis.

As I've have indicated I think roof-top photovoltaic, transportation part, electrification and CCAs are so dynamic, we at some point just decided we were not going to try to really forecast over the longer term. But just simply update it annually for the next few years until things get better baked out than they are now. And so I think that was a key part of also moving forward, but again it indicates to a dynamism. And obviously the forecast is important. You've read how it really drives a lot of our infrastructure and a lot of the resource adequacy planning.

So we do a lot of things in the IEPR, but this is one which really is a bedrock for the state.

COMMISSIONER MCALLISTER: I want to commend Chris and your team as well for taking on this massive lift. And actually from my perspective, so it's hard sometimes to take the appropriately long view of where the forecast is going to go, because we tend to sort of go two-year cycles and even year-to-year often. And sort of focus on the

incremental improvements. But the sort of ebb and flow or the big cycles of the forecast are really longer than any one Commissioner term, I would say. And so you really have to take sort of a decadal view of this. And I see us as being in the middle of a tectonic shift in the forecast.

And the need for that is certainly many of the things that you've described in your intro, Chris, which is getting more local, getting temporal. You know, really being able to dig into these various elements of the forecast. And in my own case, energy efficiency demand side stuff is arguably maybe the most challenging to get a handle on. And certainly, we have two divisions with different roles and so we have to sort of have that powwow periodically, to figure out okay well what do we think we can aim for? And then what do we think will really turn up in the forecast, in terms of energy and capacity impacts of efficiency savings?

So going into -- so I certainly do not want to take away from the massive effort this year. And certainly I think it's equal, in 2019 we'll have an equal or even greater sort of incremental lift. And it sort of underscores the need for this year, 2018, an update to kind of take advantage of the lull in the fact we're not doing a full on forecast, to work on the methodology for 2019 and really define that. And so I know we've got some contracts

going on and staff is working on that, so that work is really, really critical in my view.

Also, electrification is not just coming in the transportation sector. It's actually coming in the buildings as well. And I think there's a pretty broad band of uncertainty there. And so we need to get a handle on that as well. What are the electrification, the electric technologies that are going to take over from natural gas at the end use? Where and on what timeline? I think we really have to dig into that.

And then I also wanted to point out -- I've got a little bit of grab bag of comments I think that are important to kind of get on the record at this juncture.

The AAEE, you all will have noticed the gap between what essentially the Assessments Division, the forecasting team thinks is likely to turn up and what the doubling actually means. And so I'd encourage everyone to look at the doubling white paper that the Commission has developed for SB 350 doubling goal.

But I think it's important to point out that the horizon for the forecast, for the programs that are captured by the forecast, is shorter than the 2030 goal. And there are programs beyond that horizon that I think can't yet be considered. And so as we move forward, it's very likely that new opportunities, a new harvesting of

savings will appear, so that that gap on the natural will be closed.

Now, that's not a foregone conclusion. We have to absolutely do programs and those programs have to be effective. We have to work with the PUC and all of our counterparts to make sure that those programs are well conceived and impactful. And the utilities as well, whoever's implementing those whether it's third parties or utilities.

So from my perspective, there's a programmatic effort that is where the rubber hits the road. And it's a diverse set of stakeholders working towards the doubling goal. That really isn't captured in its entirety by any one year's forecast and so I think it's important to point that out. You know, we haven't accepted that we're not going to get there. In fact, I think it's likely that we will, but it's going to take a concerted effort and even some resources from the Legislature probably, or from the budgeting process.

Let's see, I guess I also wanted to comment on the Building Code role in this. Our role in the Building Code is to -- it's essentially sort of conceived as a conservation effort. So we're really focusing on not just reducing the net consumption over the course of a year, but this temporal aspect is really important. And so if you

think of PV requirements on the code, which are coming up in the cycle in 2019, we're trying to create pathways to emphasize self-consumption. To mitigate some of the impacts on the distribution grid.

And so between that and between efficiency and demand response -- and I want to improve and enhance even our relationship with the ISO on this. Where we meet so that the goal of the demand response and efficiency efforts, which increasingly are similar, they're sort of overlapping, is really to provide the ISO and the PUC but at a system level the confidence that demand side resources can be quantified. And can be made to be equivalent to traditional resources, to all the different versions of supply.

So I think that's something that's going to impact the forecast. It's going to impact what appears on the grid, in front of the meter. And so I think this declining load is what we're seeing in a system, but it's really critical to make that operational at the building level. And so, I wanted to just sort of link this to the Building Code, because that's definitely a topic. As we decarbonize, as we electrify and decarbonize the overall energy system, the buildings are really a key part of that. So and it's all intimately linked with the forecast.

I guess I'll leave it there. I mean, I think

this is an opportunity for us to kind of talk long term, because we often don't get a chance to do that. And so there is a vision here that is more than ten years out that we have levers here at the Commission. We have stakeholders that we work with on the forecast, on the programs, on codes and standards. All of those efforts. And they really have to be coordinated in a way that maybe isn't obvious to anybody, but really seasoned observers of this, like maybe some of you in the room.

But there is a plan. And I think we have a lot of excitement about the evolution that we're seeing. I think the move towards granularity of analysis is really positive and could -- I think it underscores the importance of updating and continuing to update our data regs. Not this item obviously, but we're going to talk about that soon in this meeting. Getting better data to the forecasting team, to the Efficiency Division. Baking that data such that we can help markets function. All of those things are intimately related to where we go, where the forecast ends up in each cycle.

So anyway, we're in -- Catherine's long-term view from 1987, you know, we were still back in the analog world back then, right? And now we're in the digital world. And that really changes a lot. And I won't say it changes everything, but it's hard not to say that, because it

changes a lot. So it gives us tools. It increases complexity, but it gives us some really powerful tools.

So anyway, I want to just congratulate the team for where we are. And this portrait that we've got I think is a really compelling one. But also, I'm thinking about where things are moving to the future and keeping the context as we do what are going to be multiple heavy lifts, moving forward in 2019 and beyond to get to the goals of SB 350.

So thanks, anyway. Sorry for the long monologue here, but I think this is among the most important things that the Commission does. And it's not as accessible as many of the other things we do, right? It's not giving away money. It's not running a program. But it is fundamental. It's our life blood. And it's the state's fundamental bedrock information. And so I think it's really important that we get it right. I know the Chair and all my colleagues here know that. But I'm sort of really excited to keep working with staff, with all of our sleeves rolled up, to keep it moving forward in the direction that it needs to.

So thanks to the Chair for your leadership on this. And I'm very excited to support the adoption.

COMMISSIONER SCOTT: I wanted to add as well just my thanks to the team for a really robust and thoughtful

forecast. It's not easy to put something like this together when you have so many complex and moving pieces, all going at the same time. So I appreciate the addition of the additional achievable PV and the work that we've done on the electric vehicles as well. And so Chris, thank you so much to your team.

I also just wanted to do a quick special shout out to Siva and his team for the excellent work that they did in pulling together the electric vehicle forecast. We worked with the Demand Analysis Working Group and pulled in our colleagues from the investor owned utilities, I think the publicly owned utilities, our colleagues at the PUC and the ISO and others to really put together a robust forecast for electric vehicles.

And I think that's something new. I think the electric vehicle teams that many of the utilities and others are not used to engaging in the IEPR in the same way that sort of the rest of the demand side teams are. So I really appreciate folks taking the time to be part of that. We look forward to updating that again next year and then continuing that good and robust work into the future.

But I just wanted to do a special shout out to that, because I know our utilities and Siva and team put special effort into making sure we have a nice robust electric vehicle forecast. So that you for that. And

thank you Chris and your team for your great forecast.

So I will move approval of Item 3.

COMMISSIONER HOCHSCHILD: Our hopes are --

COMMISSIONER SCOTT: Oh, sorry.

COMMISSIONER HOCHSCHILD: Yeah, yeah.

First of all, I just want to say I've been inspired by my friend and colleague, Commissioner McAllister, who's redoing his house now and making it super-efficient and kind of laying down the challenge. So I have a big electric heat pump hot water heater sitting in my garage I just ordered and going to be installing. And have been inspired by my colleague, Commissioner Scott as well, because I've been driving this electric car because of her. So I'm doing my part to raise our collective seat demand.

I did have a question, Chris. And by the way, I really want to thank you for your diligence over the years. I really appreciated your hard work and always adding more light than heat to these complex discussions. And Mr. Chairman, as well, for overseeing this and the collaborative nature in which it's happened I've really appreciate it.

I did have a question just on the EV portion of this, because with the new 5 million ZEV goal that the Governor set for the state, if we keep the current ratio --

so we're at about 370,000 EVs today in California and about 2,000 fuel cells. If you project that ratio forward when you get to 5 million it's an 8 percent increase in load growth, right? However, the only two auto manufacturers that have a vehicle on the market today that's under $40,000 and gets over 200 miles in range are Tesla and GM. And both of those hit their $7,500 tax credit cap this year.

So those federal tax credits expire, right? And I'm just curious when you're looking at the EV market projections and taking that into effect, how do you account for that, and what do you see? Can you say a little bit more on your thinking about the EV portions, because it does seem to be a pretty significant factor.

MR. KAVALEC: Well I want to say first that I bought an electric lawn mower. (Laughter.)

COMMISSIONER HOCHSCHILD: Damn, that's my next purchase.

MR. KAVALEC: Well, thinking back to how the forecast is done, Siva may have more details he can add, but the way the forecast was put together the assumptions that went in were that battery costs were going to fall pretty sharply, over the forecast period. I don't know the percentage.

And there's also a parameter in there that

measures tastes. And so the idea, the assumption behind that was that in the next few years gasoline vehicles, aside from the obvious vehicle characteristics that differ, are going to be considered the same as a gasoline vehicle. There won't be any caution, because it's a new technology, so it'll fit in with the --

But as you mentioned, how do we get there from here where electric vehicles really go mainstream? And I guess that's a long discussion we could have for another time.

CHAIRMAN WEISENMILLER: Yeah. And the way I would summarize it is the Governor's Executive Order came after the work on this was really done. So I mean no one should have any delusions that somehow, after midnight Chris then flipped gears to try to build in the new Executive Order. And at some point, you do one of these forecasts you have to move forward. I'm going to let the Silicon Valley people talk in a second. But again, the basic message is this stuff as you can tell goes on for a year. You can't show up at the last minute and say, "Build this in."

But having said that, I think the thing that really comes out from the ZEV forecast and the doubling energy efficiency forecast, is we need additional policies if we're going to achieve our goals. And that's really an

important message back from the forecast. And certainly encourage more creativity on the policy side to really help us on the analytics.

But let me let the Silicon Valley person -- he is stuck in not surprisingly traffic coming up from Silicon Valley, say a few words. Please come on up. We're about ready to vote on this, so it's a little unusual. But I understand you came a long way, at least a long time to get here, so I wanted to at least let you get your words in.

MS. JUE: So, thank you, Chairman. Hi. Yes, so first I just want to apologize for my tardiness and thank you for allowing me some time to speak.

So I just want to thank you Chairman Weisenmiller and the Commissioners, and working with Chris and Rick Powel, who have been very responsive to us at our utility. My name's Erica Jue. I'm with the Silicon Valley Power, a publicly owned utility for the City of Santa Clara. We just wanted to commend the CEC for your hard work on these demand forecasts and provide some input based on our experience from our utility.

We feel that as a small utility we're kind of in the epicenter of the technology industry. And the forecasts did not necessarily estimate the projected growth, because we feel that we are an outlier. And some of the supporting data that we have is that our load

forecasts that we have projected as a utility, is expected to grow 10 percent in 2019 and 2020. And then in the next 10 years, we anticipate an almost 4 percent average annual growth rate.

The reason to our growth rate is because of our consumer base, which consists of 90 percent industrial, 50 percent of our retail load is served by data centers. And because of their performance, often times the data centers operate in 85 percent load factor or greater. And because of a lot of the changes, technological and energy efficiency changes within that sector alone, the energy density is increasing at the same time, which increases load factor. And ensures that data centers can actually increase their energy potential per square footage.

So some feedback that we had were that some of the macro-economic indicators that were used to extrapolate our forecasts were underestimated, because traditionally the industrial sector has been defined as a more traditional sector such as manufacturing and refining. However, data centers fall into our industrial category. And because of that growth within our area, we have found that our load growth has been a lot higher than what had been forecasted by the CEC, just because of our unique circumstance.

Our primary concern with that is just that SVP

connects to the bulk electric system on the 230 and the 110 kV lines. And since the ISO is (indiscernible) to use the CEC forecasts we have some concerns that due to the transmission planning process, from planning to construction about three to five years, this could potentially impact the reliability of our energy within our service area.

So we'd be happy to work with Chris and his team in providing kind of performance data that we would have experience with in our service area. And work with the Commission and the CEC to collaboratively come up with new economic indicators that could be applied to our service area and other load-serving entities that have a similar circumstance.

CHAIRMAN WEISENMILLER: Thank you for coming up and certainly we would like to work with you going forward to better incorporate. And I think one of the realities is we generally -- sort of talking about all of the enhancements -- one of the things we're trying to do is enhance more on the POU side. And so I think that's going to -- we're not going to be able to just do it alone, so it's going to require a lot more interaction. And certainly you've got a very vibrant service territory and so it's very important to deal with the reliability issues there.

So again, we're looking for your participation in the upcoming IEPR, at least on the forecast part.

COMMISSIONER MCALLISTER: Also, on the IRP front you know as the POUs establish their IRP, as we go through and implement the process that we worked out, then that's a context where a lot of this conversation can happen as well. And so I think the forecasting team can be involved in that and that'll elucidate a lot of the issues that you're concerned with. I also want to --

MS. JUE: Thank you.

COMMISSIONER MCALLISTER: No, go ahead.

MS. JUE: I just wanted to say thank you for -- we're happy and open to meet with you and work collaboratively.

CHAIRMAN WEISENMILLER: Great. Thank you.

COMMISSIONER MCALLISTER: I also just wanted to encourage people to have a look at induction cook tops as long as we're talking about electric, electric loads. Yeah, they're pretty fantastic.

CHAIRMAN WEISENMILLER: Okay. Let's get a -- someone want to move the forecast? This has been a good discussion.

COMMISSIONER MCALLISTER: Yeah, this has been a good discussion, but anyway we want to get out of here at some point. I'll move Item 3.

MS. HOLMES: Excuse me, Commissioners. I have the very uninteresting, but important task of identifying what it is you're specifically voting on.

COMMISSIONER MCALLISTER: Oh good, okay. Good, so I'll adopt what Karen reads into the record.

MS. HOLMES: It's the California Energy Demand 2018 to 2030 Revised Forecast, which was posted and docketed in January. The supporting forms and spreadsheets that contain the calculations that underlie the numbers that are in the forecast. And the errata that were posted and docketed yesterday and are available at the back of the room.

CHAIRMAN WEISENMILLER: Thank you.

COMMISSIONER MCALLISTER: Okay. I will adopt, or I will propose adoption of Karen's description of the forecast, essentially.

COMMISSIONER DOUGLAS: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This forecast has been adopted 5-0. I'm just going to say a few thank yous and then we'll move on to the next item. So, you know, I'd like to really thank Chris for his hard work this year. Well, every year but certainly take a long vacation and get ready for next year.

Also, I want to thank the work that's been done on the hourly forecast in the energy efficiency. And again obviously Jaske (phonetic) also played a heavy role in those enhancements too. And as everyone has mentioned, I think on the transportation forecast it's just so much better than before. So I certainly want to thank Siva and Matt Coldwell for really pushing that along.

And again, it's going to require a lot of work to just deal with the dynamic changing nature of the industry. But we're going to stay on top of that. And again we'll work out with our sister agencies how we can pull things together and keep the process stuff going well. But part of the reality is that our peak forecast is based upon the peak month, which could be September-ish. And there's not a hell of a lot of time between September and this January 1st, when you look at what has to happen on the forecast and then the procedural side. So unless you want a really crappy forecast, you've got to be prepared to wait some.

Okay. Let's move on to the next item, the IEPR, the 2017 Integrated Energy Policy Report. Heather?

MS. RAITT: All right, good morning. Staff is requesting that you adopt the 2017 Integrated Energy Policy Report or the 2017 IEPR. I'm Heather Raitt, the Program Manager.

The Energy Commission is required to prepare an

IEPR every two years that assesses energy supply and demand, production, delivery and distribution, market trends and major challenges. Through the IEPR, the Energy Commission develops energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. Next slide, thanks.

Chair Weisenmiller is the Lead of this year's IEPR. The IEPR issue -- the Chair issued a Scoping Order on March 6, 2017, identifying the topics to cover in the report. The Energy Commission held 35 public workshops and webinars, many jointly with other agencies. Through the workshops the Energy Commission gathered public input that was integral in developing the IEPR. The initial draft was posted on October 16, 2017 with comments due on November 13. The final version was posted on January 26 with comments due February 7. An errata reflecting updates and edits in response to comments was posted yesterday, February 20th.

I will provide a very high level summary of the key issues presented in this year's IEPR. Next slide.

The report is focused on the need to drastically reduce greenhouse gas emissions from California's energy system. California is feeling the effects of climate change such as large wildfires, reduced snowpack and more

frequent heat waves, major storms and drought. Six of the state's largest, deadliest and most destructive wildfires occurred in 2017. A letter by prominent scientists and cosigned by Governor Brown argues that a rapid downward trend in greenhouse gas emissions must be initiated in the next three years to avoid the most extreme impacts.

Recognizing that California's actions alone are not enough, Governor Brown continues to lead international action. He championed sub-nationals to reduce greenhouse gas emissions through the "Under2 MOU," was a leader in achieving the 2015 Paris Agreement among nations worldwide, and was appointed Special Advisor for States and Regions ahead of the 2017 Conference. California's leadership is especially critical as a counterpoint to the Federal Administration, which has stated its intent to pull the United States out of the Paris Agreement. Next slide.

As referenced in prior IEPRs, the Governor put forward the following goals in his 2015 Inaugural Address to help reduce greenhouse gas emissions. Increase from one-third to 50 percent the state's electricity derived from renewable sources; reduce today's petroleum use in cars and trucks by up to 50 percent; double the efficiency of existing buildings and make heating fuels cleaner; reduce the release of methane, black carbon, and other potent pollutants across industries; and manage farm and

rangelands, forests, and wetlands, so they can store carbon.

Senate Bill 350, by Senator de León, subsequently codified doubling energy efficiency savings and increasing renewable electricity procurement to 50 percent by 2030. It also emphasizes electrifying the transportation sector and increasing access to clean technologies for low-income and disadvantaged communities. This report focuses on the implementation of SB 350 as a critical part of achieving the statewide goal to reduce greenhouse gas emissions 40 percent below 1990 levels by 2030. Next slide.

California has demonstrated that it can reduce emissions while growing its economy. Since the peak in 2001, greenhouse gas emissions per gross state product have declined by 33 percent, while the economy grew 37 percent. In 2015, the most recent data available, the electricity sector accounted for about 19 percent of the state's greenhouse gas emissions, and emissions were about 24 percent below 1990 levels.

Transportation accounts for about 50 percent of statewide greenhouse gas emissions and is the largest contributor to the formation of ozone emissions and small particulate matter that harm human health. Next slide.

SB 350 requires a comprehensive approach to energy planning targeted at meeting the 2030 greenhouse gas

reduction goal. Through their integrated resource plans, load-serving entities will identify the most cost-effective way to meet SB 350 goals given their unique set of resources and customer base. In August 2017, the Energy Commission adopted guidelines for the publicly owned utilities' integrated resource plans.

SB 350 also directs the Energy Commission to establish annual targets to achieve a statewide cumulative doubling of energy efficiency savings in electricity and natural gas end uses by January 1, 2030. The Energy Commission adopted a framework for achieving the goal in November 2017.

The Energy Commission and CPUC have also established rules for the 50 percent Renewables Portfolio Standard.

In building on the RETI 2.0 process, and supporting the utilities' integrated resource plans, the Energy Commission continues to develop landscape-scale planning tools for state and local planners to use as they consider renewable generation and infrastructure development.

SB 350 also emphasizes transportation electrification as a key part of California's low-carbon energy future. The state is working to both advance the infrastructure needed to support growth in transportation

electrification and ensure smooth integration of the grid.

In light of SB 350, the Energy Commission is also improving its analytical capabilities, as we just heard about, for the electricity and natural gas forecast to track and account for increases in energy efficiency savings, electric vehicles, rooftop solar, and other factors. Next slide.

SB 350 also emphasizes addressing barriers to clean energy for low-income and disadvantaged communities. In 2016, the Energy Commission worked in coordination with other state agencies to develop the Low-Income Barriers Study Part A, focusing on energy efficiency, renewables, and small business contracting opportunities for low-income customers and disadvantaged communities.

In April 2017, the California Air Resources Board released Part B focusing on the transportation sector. The recommendations for the Energy Commission's Barriers Study broadly address expanding access, increasing investment and improving resilience. The Energy Commission is working closely with the Governor's Office and other agencies to implement the highest priority recommendations. Next slide, please.

California's electricity sector is evolving as consumer choice is proliferating, spurred by market changes, technological innovations and policy actions.

Californians are installing their own rooftop solar and local government agencies are forming community choice aggregators that can buy electricity on behalf of their customers with relatively limited oversight from the PUC.

Investor owned utility retail electric load could drop by 85 percent in the next decade. As a result, the investor owned utilities are not entering into long-term contracts for renewable generation or other energy products. And there is considerable uncertainty about the ability of CCAs to secure the financing needed for long-term investments. This raises questions about how the roles traditionally filled by the investor owned utilities will be met, including who will make the investments needed in energy infrastructure, energy efficiency, research and development and energy services for low-income consumers. Next slide.

Amid this changing market structure, California's electricity grid must quickly evolve to support a low-carbon future. Integrating increasing amounts of solar and wind energy that vary depending on if the sun is shining or the wind is blowing requires a greater emphasis on flexibility and resiliency.

The California ISO's "duck curve" shows the net load which is load minus solar and wind generation. When solar electricity generation peaks at midday, the net load

drops. This puts downward pressure on wholesale prices, increasingly resulting in negative prices or curtailment of renewables. As solar generation trails off at the end of the day and demand remains high, the steep ramp up in net load is another operational challenge that has become more pronounced and steeper than anticipated, largely due to growth in rooftop solar. Next slide.

Various solutions are available to help meet these operational challenges. The Western Energy Imbalance Market has been very successful in helping to manage supply and demand fluctuations and is expanding rapidly. However, the benefits only come from the real-time market. Much greater resiliency and greenhouse gas reductions could result in a day-ahead market over a large geographic area.

Currently, fast ramping natural gas-fired power plants provide much of the flexibility needed to meet operational challenges. With the increase in renewables, natural gas power plants are operating less and less and many have ceased operation or gone bankrupt. While this helps reduce greenhouse gases, some natural gas-fired power plants are important for the reliable operation of the grid, either by virtue of their location or ability to rapidly ramp up and down.

While low-carbon flexibility is preferred, the options are constrained in the near-term. Electricity

time-of-use rate design needs to be revised to encourage shifts in energy use away from the evening period to when solar peaks mid-day. And despite impressive potential, demand response is underperforming as a grid resource in California. Electricity storage has been promising but faces cost barriers to large-scale deployment.

On the generation side, ongoing work to modify inverters at existing power plants and develop transmission-specific inverter standards is critical for improving the reliability of solar power plants. More work is needed on to ensure that California has the resources necessary to increase the resiliency of its grid as it further decarbonizes its energy system. Next slide.

As part of the 2017 IEPR, SB 1383 by Senator Lara requires the Energy Commission, in consultation with the Air Resources Board and the CPUC to, "Develop recommendations for the development and use of renewable gas, including biomethane and biogas." It further requires the Energy Commission to, "...identify cost-effective strategies that are consistent with existing state policies and climate change goals by considering priority end uses of renewable gas." The 2017 IEPR includes this analysis.

Two independent studies carried out by UC Davis and ICF International concluded that renewable gas production can generate up to four times the revenue for

transportation fuel use, as compared to electricity, because of the monetary value of credits generated from the federal Renewable Fuels Standard and the California Low Carbon Fuel Standard. Additional policies may be needed, and agencies may need to modify and enhance existing regulations, policies, and programs to fully enable commercialization of renewable gas and maximize methane emission reductions.

In planning for the future, utility executives are considering the use of renewable gas in the existing infrastructure, but concerns including pipeline safety would need to be further explored. Next slide.

Another issue addressed in the IEPR is maintaining energy reliability in the Greater Los Angeles Area. Vigilance is still needed to maintain reliability following the unexpected closure of the San Onofre Nuclear Generation Station in 2013, compounded by plans for the phased retirement of natural gas facilities that use in once-through cooling systems.

The State Water Resources Control Board approved a request initiated by Energy Commission, CPUC, and the California ISO to temporarily defer retirement of the Encina power plant to allow more time for the completion of a replacement facility.

The agencies also continue to evaluate risks and

implement mitigation measures in the wake of the massive leak at the Aliso Canyon natural gas storage facility in 2015. In the longer term California needs to begin to plan for the closure of the Aliso Canyon natural gas storage facility over the next ten years. Next slide.

While California works to transform its energy system, it must also prepare for the worsening effects of climate change. Climate impact risks can be lowered if greenhouse gas emissions are reduced to the levels in the Paris Agreement. However, climate change has already begun and more is set in motion by previous decades of greenhouse gas emissions.

The California Natural Resources Agency, Governor's Office of Planning and Research, the Energy Commission, CPUC, utilities, local governments and others are taking action to help the state prepare for further climate change. Next slide.

So that concludes my presentation. Again, staff requests that you adopt the 2017 IEPR incorporating the changes detailed in the errata. Thank you.

CHAIRMAN WEISENMILLER: Thank you. Let's take comments first and then we'll have questions for you later.

Grant Mack, please?

MR. MACK: Grant Mack again, with the California Public Utilities Commission. I want to thank you, Chair

Weisenmiller, for your leadership and the whole Energy Commission team for your thoughtful, brilliant and important analysis and time that went into the development of this year's Integrated Energy Policy Report.

Developing and updating this report is a monumental task and this year's report is no exception. Public Utilities Commission continues to value the expertise of the Energy Commission and it's unwavering collaboration and foresight toward achieving California's leading energy and environmental goals.

On a more personal note, as a former staffer of the Energy Commission, I'm always amazed and proud of the Energy Commission team for expanding the boundaries of energy policy and truly charting a path towards a safe, reliable, affordable and environmentally sustainable energy future. Thank you again for everything you do to keep California golden.

CHAIRMAN WEISENMILLER: Thanks.

Let's go on to Spencer.

MR. OLINEK: Good morning Chair and Commissioners, Spencer Olinek from Pacific Gas and Electric. As you know, we're in an important time for our industry and for global energy policy. And against that backdrop we always appreciate the CEC's hard work and leadership to continue to push the envelope on energy

policy. We support adoption of this year's IEPR and look forward to continue to explore a number of these topics in the 2018 IEPR Update. Thank you.

CHAIRMAN WEISENMILLER: Thank you.

Anyone else in the room or on the phone?

(No audible response.)

CHAIRMAN WEISENMILLER: Then let's transition over to the Commissioners. Again, I will make comments after adoption in terms of thanking people. But this has been a pretty broad-scoped IEPR. Part of it is being nominated by the Legislature to take on renewable gas, but certainly it's been a pretty wide scope dealing with the 350 issues. And I think the 350 issues sort of touch almost all of our programs, and this IEPR certainly does too.

So one of the things that really identified for future action is that we looked at the finished road maps that we have. Vehicle to grid, storage, demand response, all of which are pretty dated. I mean the good news is we're achieved many of the actions we planned on doing, but it's really time to go back and refresh those.

And again, whether it's a more coordinated single document, or subsets we need to figure that part out, but -- and I think certainly again, we're pushing forward on the disadvantaged community. We're going to talk about that a

little bit next, but there's still a lot to do there. So the bottom line is we did a lot. As anything we didn't really -- we still have some continuing activities to wrap up. But and some of this is like on the forecast is actually going to continue for years if not decades, but having said that I think it's a document we can be proud of. I certainly want to thank the staff that worked on it.

Any others?

COMMISSIONER MCALLISTER: I just want to thank, so I agree with all that and I'm not going to do another monologue. But again this is foundational stuff and I think it was very appropriate that the Chair preside this year, because of all the just cross-cutting issues that had to be in this IEPR. And you're stepping up and leading that process is something I think we all benefitted from.

And I'm not sure if you sat through all 35 workshops, but I know I sat through my share and there, I say sat through, but certainly don't mean that in any denigrating way. They're fascinating and that's what we're here to do and so I think they're really the bedrock of what we do here.

So thanks for taking that on and leading it. And I think it's a fantastic document.

COMMISSIONER SCOTT: I will echo that. Thank you so much Chair Weisenmiller for your leadership on this

year's Integrated Energy Policy Report. As always, it's a fantastic opportunity to convene experts from all around the world to really look at sort of cutting edge policies and how to keep California at the forefront. And similar to Commissioner McAllister, as always I learned a ton during this IEPR proceeding. And I thank you very much for your leadership on that.

COMMISSIONER DOUGLAS: I'll just add to that and join in those comments and those thanks. I also found the IEPR process this year really interesting. It was a really great opportunity to dial into the cross-cutting policy issues that we deal with here at the Commission and really see how the different worlds that all of us participate in, interrelate and come together in these cross-cutting policies. And so having you lead the IEPR and having this opportunity to also participate in a number of workshops and read through a couple different times and iterations, drafts of the write-ups that came out of that work, has been really helpful. And I have also learned a lot from going through the process this year.

COMMISSIONER HOCHSCHILD: You know the Boy Scouts give little merit badges and stuff, we get an IEPR badge if you can make it through. (Laughter.) No, my thanks and congratulations as well to Chair Weisenmiller and staff. And with that I'd move the item.

COMMISSIONER SCOTT: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This IEPR's adopted 5-0.

I just wanted to thank folks. I mean, obviously we'll start with Heather and her team. Again, it's been 35 workshops. It is just a lot of work to organize the workshops, make sure they're really meaningful and basically translate those into action. So again, certainly Heather and her stellar team, Stephanie Bailey, Raquel Kravitz and Denise Costa. Certainly thanks again. It's been a heavy lift.

Obviously Kevin has been really important to me to get this done. I certainly want to thank Kevin for his work throughout this, getting it pulled together and done.

Aliso Canyon, we focused on this year, I would just point out at this stage that we were really lucky and had a very warm December and January. And now we have a very cold spell in Southern California. Aliso's sort of running full blast at this stage. And power plants are -- gas use two cap power plants are being curtailed, but the ISO is maintaining the system by shifting load out of the Basin. So at this point we seem to be doing well, but certainly Aliso has been a key part.

I'd like to thank Lana Wong and Katie Elder and

the whole gas team for staying on top of the gas issues as we go forward.

One of our real themes has been climate and the impacts, the climate impacts we're having on California. And certainly Guido Franco, Susan Wilhelm, my adviser Pam Doughman really have made that a very strong chapter. I would also point out that Pam also worked on what are called the barrier side with particularly Mike Sokol on coming up with the indices, which again I would note that that's being posted. Our equity indicators on the draft form and looking for comments on that.

So on the Strategic Investment Plan, certainly Al Alvarado, Judy Grau, Jim Bartridge and Chris McLean and did a lot there. We've already talked about how important it was that the transportation sector session for the forecast to be really first rate. And also the section. I think Charles Smith did a really great job on the transportation chapter.

Renewable gas issues, they're not easy. But certainly Elizabeth John and Matt Ong did a great job on that part.

And again I certainly want to thank all the stakeholders. As I said, we focus a lot on the staff side of the equation, but certainly the participation of all the experts in these processes really give us the basis to pull

together a strong report. So again thanks all. And yeah, hopefully Heather and Chris will both be having some -- Heather's team will be having some time off before they start the 2018, which is looming somewhere on the horizon. So thanks.

So let's go on to approval of Disadvantaged Community Advisory Group. The DACAG membership.

MS. MATHEWS: Good Morning, Commissioners. As you are aware Senate Bill 350 as codified in Public Utilities Code section 400(g), requires the California Public Utilities Commission and the California Energy Commission to establish an advisory group consisting of representatives from disadvantaged communities. The advisory group is to review and provide advice on proposed clean energy and pollution reduction programs and determine whether those proposed programs will be effective and useful in disadvantaged communities.

The Energy Commission and the California Public Utilities Commission adopted the charter for the advisory group on December 13, 2017 in Energy Commission Resolution 17-13-2, and on December 14th of last year in California Public Utilities Commission Resolution E-4893, respectively.

On November 1st, 2017, both Commissions issued a solicitation for application to membership in the advisory

group, with an application deadline of December 22nd, 2017. Thereafter, Commissioners Rechtschaffen and Guzman-Aceves of the CPUC, and Chair Weisenmiller and Commissioner Scott of the Energy Commission, reviewed the applications and conditionally selected the following applicants pending review for conflicts of interest and other eligibility screening.

This joint selection committee recommends approving the appointment of the following persons to the Disadvantaged Communities Advisory Group: Stephanie Chen, Stan Greschner, Angela Islas, Roger Lin, Adriano Martinez, Jodi Pincus, Andres Ramirez, Woodie Rucker-Hayes, Phoebe Seaton and Tyrone Williams. Along with Chairman Kevin Day, who will be the 11th member who was chosen to be the advisory group's tribal representative by the Governor's Tribal Liaison.

Additionally, you have before you the accompanying Disadvantaged Communities Advisory Group Membership Resolution, which has been previously provided and included in today's back-up materials.

And with that, I will propose to turn it over to the Chairman.

CHAIRMAN WEISENMILLER: Okay, thank you.

So first any public comment? Please, Grant.

MR. MACK: Third time's a charm. Grant Mack with

the California Public Utilities Commission. I just want to say a few words. We're looking really forward to working with this very diverse advisory committee on how do we better design our policies and programs to ensure access to clean energy resources to disadvantaged communities.

Thank you to the Energy Commission, working collaboratively with our team, and we look forward to what this produces. Thank you.

CHAIRMAN WEISENMILLER: Anyone on the phone? Anyone who wants to -- please, come on up.

MS. MATHEWS: We actually have a member of the proposed members.

CHAIRMAN WEISENMILLER: Please.

MS. ISLAS: Good morning, this is Angela Islas from the Central California Asthma Collaborative. I'm the community health worker representing the Fresno County and Madera County areas. I perform a environmental home assessment where I just review on certain homes in disadvantaged communities in southeast-southwest Fresno, but I don't just do that area. I do, do all rural areas in Fresno County and Madera County. And the home environmental inspections just kind of do a little bit of an evaluation to see if there is any asthma triggers in the home for particularly asthmatic families.

And then I offer recommendations as well as

different types of strategies to maintain relationships with their physician, as well as being able to have access to their medications at home and in school and at work as well. Because I don't just do children, but I do allow adults to take advantage of these free services that we offer in these two different counties. So we have also expanded the program out to Kern County as well as in Kings County. So we are looking to just see if we can expand this free service out to North, Central and all of South Valley and the San Joaquin Valley.

So I'm actually really excited to be a part of this group and very excited to be able to give the best advice as possible with these programs. So really looking forward to meeting everyone here as well as everyone in CEC and CPUC. Thank you.

CHAIRMAN WEISENMILLER: Yeah, thank you for being here. We're looking forward to your assistance.

Okay. Anyone else in the room or on the phone?

(No audible response.)

Then let's transition to the Commissioners. Commissioner Scott.

COMMISSIONER SCOTT: Sure. So I would like to start just by thanking our partners at the Public Utilities Commission. Commissioners Rechtschaffen and Guzman-Aceves have been terrific to work with as well as Alice and

Mel and their whole staff who helped us put this together and also Alana Mathews and Mike Sokol and Galen Lemei on our team, for their hard work in this effort. As Alana mentioned, they have developed the charter. They issued the solicitation. They prepared the applications for our review. And they've just done a terrific job in putting this together for us.

As Alana also mentioned we received nearly 50 applications, which was really exciting and had a great number of strong candidates to choose from. And it was challenging to narrow them down to just ten. But I think the candidates we are recommending today each bring a unique background and a knowledge that will collectively result in robust representation of California's diverse communities.

As we all know, Governor Brown has identified an ambitious suite of climate and clean energy goals for California. And a critical component to us being successful in achieving these is assuring that all Californians have access to clean energy technologies and programs. And that our low-income communities are playing a meaningful role in helping us lead the way as we make this transition.

So I really look forward to working with our advisory group as they develop recommendations for

improving our SB 350 clean energy and pollution reduction programs, helping to ensure that they are effective and are useful to the diverse communities throughout the state. And thank you, Ms. Islas for coming today. I look forward to getting to know you better and to continuing to work with you and the other members on the committee.

So I don't know, Chair Weisenmiller, if you have any comments you'd like to make?

CHAIRMAN WEISENMILLER: Yeah, it's been a great process to work with Cliff and Martha. I understand the PUC will be adopting hopefully the identical resolution at its next business meeting. And we're all looking forward to really kicking off this group of meetings.

COMMISSIONER SCOTT: So with that, I will move approval of Item 5.

COMMISSIONER HOCHSCHILD: I'll second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: So this passes 5-0. And again, thank you. Thanks for being here.

Let's go on to Item 6.

MS. WENG-GUTIERREZ: Good Morning Chair and Commissioners, my name is Malachi Weng-Gutierrez and I work in the Renewable Energy Division. I'm here today to request adoption of regulations implementing updated data

collection language addressing a broad range of fundamental data used at the Energy Commission. The proposed regulations govern data submittal requirements regarding combined heat and power facilities, interconnected resources, natural gas hydraulic modeling and electricity and natural gas consumption data. The regulations also add automatic confidentiality designations for natural gas hydraulic modeling data and customer level consumption data. I will quickly walk through a few of the major proposed additions and modifications.

As California's lead energy agency, the Energy Commission is responsible for developing the state energy demand forecast and a variety of related analyses, which depend on collection of accurate and up-to-date information from utilities and other entities. These analyses are then used by many other agencies for their energy related activities. And in this role, the Commission collaborates with those agencies to ensure their analytical needs are met. Through the Integrated Energy Policy Report process, the Commission conducts a public proceeding to develop effective and equitable energy and environmental policies and legislation based on this data and subsequent analyses.

In order for the Energy Commission to meet its statutory obligations of identifying emerging trends in energy demand and generation, energy efficiency potential,

renewable energy development, and GHG emissions reduction efforts, and to assess the effects of energy efficiency savings on electricity demand on an hourly and seasonal basis, more disaggregated data is now needed. Additionally, planning for electricity system infrastructure is increasingly performed at a localized level requiring more detailed data. Staff has spent a great deal of time evaluating the minimum amount of data necessary to perform our mandated functions and considered feedback from stakeholders and academics in developing the proposed language in the current regulations.

To support the continued disaggregation of the demand forecast, improve data quality, track emerging trends, and assist with the GHG reduction work, Section 1353 will allow us to obtain customer level electricity and natural gas consumption data for the state's largest utilities.

To ensure the Energy Commission has the necessary information to address problems stemming from natural gas delivery and storage issues, Section 1314 will require the state's three largest gas utilities to submit data needed to better monitor, model, and analyze the interaction of California's electricity and natural gas systems for grid reliability.

In order to better characterize, assess, and

forecast load impacts from photovoltaic generation, plug-in electric vehicles and the operation of energy storage systems, subdivision 1344(f) requires utilities to report current research on these topics to the Energy Commission.

In order to understand and quantify the efficiency of co-generation facilities, the power plant reporting requirements in subdivision 1304 were updated to include more detailed thermal energy and waste heat information.

To ensure the Energy Commission continues to receive fundamental interconnection data for one the fastest growing generation resources, photovoltaic systems, the subdivision 1304(b) reporting threshold for interconnected resources was eliminated. Because we expect other load modifiers, including energy storage systems to become more common, we have included them as well in the reporting requirements. These new requirements apply only to information the utilities regularly collect.

With the implementation of new Section 1353 where we ask for the customer level information, some of the aggregated data currently collected may no longer be required. The modifications to the language within Sections 1306 and 1308(c) recognize this and relieve obligated parties from reporting the potentially duplicative data.

And lastly, in recognition of the sensitive nature of data collected in Sections 1314 and 1353, Section 2505 was modified to automatically designate submitted customer-level information and gas modeling files as automatically confidential.

As the Energy Commission acquires and uses customer-level data, maintaining security and privacy of customer information is paramount. Each data set collected by the Energy Commission containing confidential information carries an associated risk, and improper use or disclosure can lead to negative impacts to customers and to the Energy Commission.

To minimize this risk the Energy Commission collects only the data it needs to perform its mandated functions, automatically treats customer information as confidential, restricts access to such data and includes a broad range of technical and process controls in its data management practices.

The State of California requires the Energy Commission to meet information security policies and standards that are regularly updated to align with evolving cyber security risks and industry best practices. The Energy Commission regularly reviews its information security controls to ensure they meet state security policies and standards. Furthermore, all staff receives

regular training to ensure they understand their information security responsibilities and Commission expectations regarding handling and protection of confidential information.

Over the past year and a half, staff has worked with stakeholders to refine the language and clarify the objectives of this data collection rulemaking. The proposed language also benefited from stakeholders' inputs in a number of pre-rulemaking workshops and meetings.

The formal rulemaking began last August with the posting of the proposed regulatory language for a 45-day comment period. We received significant comments and staff worked to ensure that we addressed the comments appropriately with the revised regulatory language posted in January of 2018. The 15-day comment period ended on February 13 and we do not feel that any of the comments received require further revisions to the regulatory language.

If the regulations are adopted today, they will go into effect the third quarter of 2018. And with that, I would like to request adoption of these regulations and I would be happy answer any questions.

CHAIRMAN WEISENMILLER: Thank you.

Yeah, let's start with public comment. Grant Mack?

MR. MACK: Grant Mack again with the California Public Utilities Commission. We support the adoption of today's proposed regulations. As you all know, we live in the era of big data. And it is very encouraging this agency understands the opportunities and value that data can provide in developing, implementing and evaluating effective energy policies.

I also know how important this initiative is to Commissioner McAllister as you continue to be a thought leader in the demand-side management and energy efficiency space. The Public Utilities Commission looks forward to continuing our work with the Energy Commission to enhance the state's energy demand forecast and utility data sharing protocols as these new regulations go into effect.

Again, congratulations. And I look forward to watching how the Energy Commission will maximize the opportunities with this data. Thank you.

CHAIRMAN WEISENMILLER: Thank you. Thanks for being here.

Valerie?

MS. WINN: Good morning again, Valerie Winn, with PG&E. I too would like to offer our support for adoption of this regulation. I know that that's a bit of a shock. We've gone through many iterations over the last few years, but I do really though, as part of the process of getting

to the point where we are today.

I do really want to thank Malachi and his team. Where'd he go? Oh, there he is. Because this has been a very collaborative process where we have sat in numerous meeting rooms and talked about what we have, what are you trying to accomplish with the data. And building an understanding on both sides that I'm happy to be able to support this today.

And we've also already been working with other teams within the Energy Commission. Jason Orta and his team on the natural gas hydraulic modeling. And that also has been a very collaborative process where we've been building understanding about what the Commission is working to accomplish there and what data really helps to support achieving those goals. And a lot of sharing of knowledge and experience along the way.

So one thing as I look forward, as we start to provide customer data, which we have not provided previously, I'm very happy about the automatic confidentiality designations. But this is going to be a lot of data. I mean we have 15 million customers, interval meter data. And I think as we look to start providing that next year, we need to start now to think about how are we going to implement that? Because that is terabytes of data and it's going to take, I think, a lot of systems work on

both the CEC side and for PG&E's data professionals as well. I mean it's simply not something we provide routinely and there will need to be some infrastructure developed around supporting that routine provision of data.

So I look forward working with Malachi and his team on that. And again thank and we are happy to support adoption.

CHAIRMAN WEISENMILLER: Thank you. No, we've appreciated the opportunity to work with you and bring both agencies together on this, for the Commission and PG&E.

MS. WINN: Thank you.

CHAIRMAN WEISENMILLER: Thank you again.

Any other comments in the room or on the line?

(indiscernible)

Then we'll move to the Commissioners. I'll kick it off.

Obviously, you've heard how -- oh, please come on up. Yeah.

MS. HOU: Delphine again with the California ISO. I'm sorry. I submitted a card, but I think I combined both of my comments together, so apologies.

We definitely support this effort. And I wanted to take some time to respond to Commissioner McAllister's comment. And we think really having something like this is the cornerstone of not only having the data, the proper

data, to do our analysis and modeling, but really having that data so that we can further state policy and state goals.

So we find that this is an excellent start for the Energy Commission. The breadth of what's being asked here is fantastic. And from the CAISO perspective there's also data struggles. And we appreciate that having this for the CEC is going to improve the demand forecast.

But just to highlight a few things that we deal with on the CAISO side, is at a very granular level we even have a difficulty understanding sort of behind-the-meter generation profiles. And that impacts our short-term forecasting in the operational sphere. But moving that timeline out into something as long term as our transmission planning process, or even looking at supporting analysis on Aliso Canyon, all of this data is going to be very useful. But also that time scale is very different, so we really appreciate the effort here.

We fully support this and hope the information -- we understand it is a heavy lift. But anything that CAISO can do to help, we'd be happy to and appreciate it. Thank you.

CHAIRMAN WEISENMILLER: Thank you.

Transitioning now -- is anyone on the phone? So I think we've got all the comments.

Again, this is -- you've heard the forecast. You know, that we're continuing to work on enhancing it. To enhance it, we're going to need more data to really deal with the granularity and the changes in the industry. And this is a big step.

It's not -- we have sort of a second phase coming up that's going to deal with broad characterized non-traditional entities. All these entities that have not really part of our data collection process in the past. So this is just the first step. But again, it is really a critical one to really pull the agency forward more and more to deal with the dynamic nature of the industry at this stage. So again, this is huge. And as Valerie said, I mean we're really going to have to work together closely on the IT infrastructure side. And we certainly have also been working very strong on confidentiality, protecting the data once it comes in. And we intend to stay on top of that.

Yeah, Andrew?

COMMISSIONER MCALLISTER: Yes, so I just want to thank Malachi. The whole team behind this, but Malachi and his team have really been -- what's that? And Caryn Holmes as well. You guys have really tag teamed that. And just your persistence is recommendable. And I want to also thank PG&E and all the other stakeholders, because these

are important issues. We have to have it all right. I think we're at that point with this update.

I mean we have not updated our data regs for 14 years, something like that, longer than a decade. And so time is due. We need to sort of bring the agency into the 21st century analytical world that we live in. And so the technology exists to do this. Automation is going to be our friend, I think, as we develop the IT infrastructure.

And it's really important to our -- certainly for the doubling, but for any number of other activities that we do, for advising the Legislature on policy, for doing more targeted policy, so that we can better use our program resources. As Delphine said, I really appreciate your comments, to help understand really the baseline and the trending at an increasingly local level what demand looks like. What policy impacts are happening out there, so we can really elucidate that.

And really, the Legislature through SB 350 kind required us to go down this road implicitly, because we need to develop that narrative for them that they've asked for in the statute, to tell them how we're on the doubling and where the savings are coming from.

So this is really critical infrastructure for that. And I'm really happy that we're at this point.

I'm certainly looking forward to Phase 2 as well

and I'll add Malachi and Caryn to the group of people who deserve a vacation. And really actually I think we're going to learn a lot. And the I value your comments, Valerie, on I think this is a collective effort. I think we're all going to learn a lot about a valuable -- we're going to develop a lot of valuable knowledge about the energy sector.

And certainly, as AB 802 benchmarking goes into effect, as we dig into the Prop 39 data, I think all of these things are going to leverage the same infrastructure. And we're going to be able to target the sectors that really need attention, policy attention the most. You know, low income is -- you have multifamily -- there are any number of areas where those markets are not just going to take care of themselves. We need to sort of help push them along and develop policy to support that and advise the Legislature and the Governor's Office about that.

So anyway, this is again a foundational resource that is a long-term development. This is not going to happen overnight. The fruits of this, I think, are going to emerge gradually. And it's going to take some resources.

But I want to also just thank Grant for your comments from the PUC. I think the ISO, the PUC and the Energy Commission are going to, I think be able to take

part of those fruits to have this effort really, really pay off. And it's going to enhance our coordination frankly around the forecast and otherwise. So anyway, I'm obviously in strong support.

COMMISSIONER DOUGLAS: And so I'll just jump in and say that while I didn't really do any lifting whatsoever on this process, I certainly paid enough attention to it, especially in the early stages to know that it was a) not going be easy and b) absolutely essential to do. And I am really pleased to see this come to fruition. I'm really pleased to see that we have a package that has support and to hear that.

And so I think, as you have said Commissioner McAllister and the Chair as well this is going to move us forward in really important ways. This was essential to get done, so I'll be very pleased to support it as well.

COMMISSIONER MCALLISTER: Great. I neglected to thank Drew, the Executive Director, on this. A lot of the implementation of this is falling in the Executive Office and so I thank Drew's commitment to this. And Mike Sokol as well, who's been driving the discussion and making sure it keeps coordinated across divisions. You guys have been and will be critical to keeping the ball moving forward, so thanks for your commitment.

So I will move Item 6.

COMMISSIONER DOUGLAS: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Thanks. Thanks again.

Let's go on to 7

MS. GRANT KILEY: Good morning Chair and Commissioners. My name is Rachel Grant Kiley. I'm the Manager of the Energy Commission's Contracts, Grants and Loans Office. And today I am requesting your approval of a resolution to supersede the December 2013 resolution regarding the Executive Director's Authority to Approve Certain Commission Transactions. The change between the superseded resolution and this new resolution before you is to provide authority for the Executive Director or his or her designee to approve all applicable budget reallocations by specifically removing the $150,000 cap.

In December of 2013, the Energy Commission approved a resolution that directed the Executive Director or his designee to approve certain transactions. The internal policy that followed is what we call the Changes Chart. This chart spells out every type of change that can be made to an agreement and what levels of approvals each requires.

With recent changes in the Executive Office,

program staff from the Fuels and Transportation and Research and Development Divisions, along with Legal and myself met with the Executive Office to propose modifications to this Changes Chart to save time and effort on the part of staff as well as the Executive Office.

Importantly, these changes also benefit Commission contractors and grant recipients by reducing the time it takes to process amendments.

Of the changes proposed to the internal Changes Chart, only the change to the level of approval for budget reallocations requires a change to the December 2013 resolution. The 2013 resolution requires business meeting approval for cumulative budget reallocations in excess of $150,000. Because many of our agreements are for millions of dollars, many of these agreements also reach this cap. This means that currently many routine budget reallocations are brought before the Commission while other routine amendments are already approved by the Executive Director or their designee.

The proposed change would remove the current $150,000 cap and allow the Executive Director or designee to approve all budget reallocations of any amount as long as the other criteria for changes are met.

The purpose of this change is to make budget reallocations in a more timely manner, which benefits the

Commission by streamlining its work and benefits contractors and grant recipients by reducing the time they have to wait for approval. This change also allows for consistency between the Commission's approval process of budget reallocations and other routine amendments, such as no-cost time extensions, which are already approved by the Executive Director or their designee.

I respectfully request your approval and am happy to answer any questions or concerns that you may have.

CHAIRMAN WEISENMILLER: Thank you.

Are there any public comments or comments on the phone, here in the room or on the phone?

(No audible response.)

CHAIRMAN WEISENMILLER: No, okay. So let's transition to the Commissioners.

I think I had started this process a while back. And part of it was just looking at the authorities of the Executive Director, say at the ARB and here and there were are a lot less delegated authority to the Executive Director. And again, trying to really simplify the process, so we can get more done.

And I think we've had a phase with prior resolution, and I think everyone's getting more comfortable with it. It's time to take a bigger step.

COMMISSIONER MCALLISTER: I move this item.

COMMISSIONER SCOTT: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: So this passes 5-0. Thank you. Let's go on to 8.

MR. MICHEL: Good morning Chair and Commissioners. My name is David Michel of the Local Assistance and Financing Office within the Efficiency Division. We are requesting approval of an Energy Conservation Assistance Act, also known as ECAA, a loan to the City of Bakersfield.

The application is for a $3 million loan to upgrade nearly 16,000 street lights of high pressure sodium to LED street lights throughout the city. The street lighting retrofit will save approximately 4.6 million kilowatt-hours of electricity, and over $665,000 annually.

Energy Commission staff has determined that this loan is technically justified. And based on the loan amount the simple payback is approximately 4.5 years, well within the 17-year simple payback period requirement of the loan program and within the ten-year effective useful life of the LED upgrade.

We respectfully request approval of this item for the City of Bakersfield. I'm prepared to answer any of your questions. Thank you.

CHAIRMAN WEISENMILLER: Thank you.

Any comments from anyone in the room or on the line?

(No audible response.)

CHAIRMAN WEISENMILLER: Okay. Then let's transition to the Commissioners.

COMMISSIONER MCALLISTER: Yeah, it's a great project. You know, moving into the LED world and with a short payback and kind of a no-brainer for the city. So I'll move this item.

COMMISSIONER HOCHSCHILD: Just one comment, I'm in support of this project. But I was at UC Santa Barbara some months ago and the next innovation that's coming is an LED lens that increases the throw of the light, so you can basically have 20 percent of the light pulls that you would otherwise need, because the throw is extended better. And I think that's a great opportunity for those savings down the line. I don't know how close it is, but all the experts there were absolutely convinced that's where things are headed.

So did you move the item?

COMMISSIONER MCALLISTER: I moved it.

COMMISSIONER HOCHSCHILD: I second the item. Thanks.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Thank you.

MR. MICHEL: Yeah.

CHAIRMAN WEISENMILLER: Let's go on to Item 9, Merced Community College District.

MR. MCLEOD: Good morning. I'm Barry McLeod with the Energy Efficiency Division's Local Assistance and Financing Office. We are seeking approval for Agreement 004-17-ECG, an Energy Conservation Assistance Act loan -- Education Subaccount loan, 0 percent loan for Merced Community College District for $1,627,600.

The Madera Community College District has requested this loan to fund a photovoltaic combination ground and parking canopy mounting system at its Los Banos campus. The project cost is the full $1,627,600. The District will be financing the entire project with these funds.

The 525.1 DC kW system is expected to reduce the annual purchased electricity by about 680,000 kWhs, thus saving the District approximately $88,000 in the first year.

Energy Commission staff has determined that this loan is technically justified, and based on the loan amount and calculated simple payback is approximately 18.5 years

for this loan.

We are here seeking your approval and to answer any questions you may have.

CHAIRMAN WEISENMILLER: Thank you.

Are there any comments from anyone in the room or on the line?

(No audible response.)

CHAIRMAN WEISENMILLER: Okay, then we'll transition to the Commissioners. Commissioner McAllister?

COMMISSIONER MCALLISTER: Yeah, great. Thanks for the presentation and I'm fully in support of the project, certainly.

I did have a question and maybe we can follow up on this after the meeting. But the PV projects, energy efficiency is a wide diversity of projects and obviously PV can be different project configurations. If it has a canopy, it's a parking structure. So that increases costs. But I guess I'm wanting to ask sort of for some analysis about the variation in costs per kW, you know cost per capacity payback time of the various PV systems that we're financing through the ECAA and ECAA-ED programs. This one's relatively long. And there are others that are quite a bit shorter, so I'm kind of -- maybe we can unpack the drivers of those costs?

This was obviously within the terms of the ECAA

program, so there's no problem. I just want to ask you if you could maybe elucidate that or we can follow up later.

MR. MCLEOD: The difference in the cost of the canopy structure versus ground mounted?

COMMISSIONER MCALLISTER: Well, just the different factors that are driving costs. I mean I think we can imagine that's one of them, but there may be others that the various projects bring to the table. So it would be nice to sort of understand that.

MR. MCLEOD: All right. The canopy-mounted ones are not that much more expensive than the ground-mounted ones. It's just a matter of putting the system a little bit higher. And the canopy ones are going on top of the parking lot, so there's no ground distribution or disturbance. So the costs are fairly similar, from what I understand.

COMMISSIONER MCALLISTER: Okay, maybe we can follow up on that. I've noticed there have been some PV systems that we find that have had some ten-year paybacks, so that's a pretty big variation. So I do want to unpack that a little bit.

MR. MCLEOD: Okay.

COMMISSIONER MCALLISTER: But I'm fully supportive of the project, so I'll move this item.

COMMISSIONER HOCHSCHILD: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Thank you.

MR. MCLEOD: Okay. Thank you.

CHAIRMAN WEISENMILLER: Let's go on to Light-Duty Vehicle Hydrogen Refueling Infrastructure Operation and Maintenance Support.

MR. JENKS: Good morning, Chair and Commissioners. My name is Chris Jenks and I am with the Advanced Vehicle Technologies Office.

I am presenting 16 grant agreements for possible approval that would provide Operation and Maintenance funding under Grant Funding Opportunity GFO-17-601 for hydrogen refueling stations.

On August 25, 2017, the Alternative and Renewable Fuel and Vehicle Technology Program released the first-come, first-served GFO-17-601, Light-Duty Vehicle Hydrogen Refueling Infrastructure Operation and Maintenance Support Grants.

The purpose of this solicitation is to provide Operation and Maintenance support funding for publicly accessible hydrogen refueling stations that did not receive Operation and Maintenance support funding under Program Opportunity Notice PON-13-607, Hydrogen Refueling

Infrastructure, or which received only a portion of the potential $300,000 in Operation and Maintenance support funding, on a station-by-station basis.

The purpose of offering Operation and Maintenance support is to ensure that hydrogen refueling stations remain operational during the rollout of fuel cell electric vehicles.

The 16 grant agreements being presented today are for stations that were delayed in becoming operational due to unforeseen circumstances, but are now operational and qualify for Operation and Maintenance funding under GFO-17-601. These agreements will require the stations to report details of their operation and maintenance to the Energy Commission for three years after the effective date of each agreement.

Staff is asking for approval of these 16 agreements listed as a through p in Item 10. I'm happy to answer any questions you may have. Thank you.

COMMISSIONER DOUGLAS: All right, thank you.

Is there any --

COMMISSIONER MCALLISTER: Do we have any cards left?

COMMISSIONER DOUGLAS: Yeah, let's see here. We're on Number 10, so I've got a card for 10b, so that's Dwight Zuck. Are you here? It looks like it, come on

forward. I've got another one too.

MR. ZUCK: Thank you panel of distinguished Commissioners. And my name is Dwight Zuck with Air Liquide. We are one of those 17 stations on the list in Anaheim, California. We have several other projects behind it. So we're very -- like Commissioner Scott said earlier, there are a lot of moving parts in this and it did take -- we knew we were putting something together that hadn't existed before and it took a few more challenges. So we do appreciate the extension of the good will and assistance as we ramp up the station and the supply chair. Thank you very much.

COMMISSIONER DOUGLAS: All right. Thank you very much. We've got it -- is there anyone else in the room who'd like to comment on Item 10? I've got a stack of four notes for folks on the phone who'd like to comment, so I'm going to start with Atabak Youssefzadeh, Ontario CNG Station. Are you on the line?

MR. YOUSSEFZADEH: Yeah, I'm on it. Can you hear me?

COMMISSIONER MCALLISTER: Yeah, we can hear you. Go ahead.

MR. YOUSSEFZADEH: Okay. Hi. My name is Atabak Youssefzadeh. I'm the Architect and a partner in the Ontario Hydrogen Project and I want to thank the

Commissioners for this time, as well as the California Energy Commission for this project.

Without their help, this project would not have been possible. This system is an electrolysis system, which is somewhat a complex project. And we had some unforeseen construction due to the City of Ontario. But now we are past that and we are ready for the operation. And I just want to thank you for your help and I hope that we get this renewed.

CHAIRMAN WEISENMILLER: Thank you.

MR. YOUSSEFZADEH: And I'm here to answer any questions.

CHAIRMAN WEISENMILLER: Thank you, very much.

Let's go to on to American Honda.

MR. ELLIS: Hello, can you hear me?

CHAIRMAN WEISENMILLER: Yes. Please go ahead.

(Audio cuts in and out during phone call.)

MR. ELLIS: Okay, great. My name is Steve Ellis. I'm the Manager of Fuel Cell Marketing for the American Honda Motor Company. And I just wanted to thank Commissioner Scott, all Commission members and to (indiscernible) on behalf of American Honda Motor Company (indiscernible) with California. We thank the Energy Commissioner for its continued efforts and leadership to develop this (indiscernible) network.

Certainly we encourage (indecipherable) customers in the State of California (indiscernible) and today they are really showing the normal operation of (indiscernible) over 300-mile range driving (indiscernible) fueling.

We appreciate the Governor's basically doubling down vote to increase and accelerate (indiscernible) from the previous 100. To develop the confidence of our customers to (indiscernible) and provide normal operations just like (indiscernible).

We ask the State of California to do more and to help us more to move the northeast and upstate (indiscernible). I know that has nothing to do with this agenda item, but it's really critical that we really look at this as a national approach recognizing the fact that this is really the (indiscernible) in the State of California. (Indiscernible)

CHAIRMAN WEISENMILLER: Thank you.

Let's go on to FirstElement.

MR. STEPHENS: Hi. Can folks hear me okay?

CHAIRMAN WEISENMILLER: Yes.

(Audio cuts in and out during phone call.)

MR. STEPHENS: Great, well thank you. I'm Shane Stephens, the founder of FirstElement Fuel. We're a company (indiscernible) by California. My plan was to be there for you in person, but (indiscernible)

And I cannot state how helpful this operation (indiscernible) helping us achieve that part of (indiscernible). We have 11 fully dedicated individuals for services and 8 of those individuals are actually former Marines, so California veterans (indiscernible) As a result our True Zero hydrogen stations average (indiscernible) percent, 106,000 and (indiscernible).

So thank you again, for the element of support. (indiscernible) Thank you very much.

CHAIRMAN WEISENMILLER: Thank you.

Last is the California Fuel Cell Partnership.

(Audio cuts in and out during phone call.)

MR. GAGLIANO: Hi. Joe Gagliano with the Fuel Cell Partnership. I just wanted to reiterate our enthusiastic support for the O & M funding that is supporting the early market development and support of hydrogen fuel cell vehicles. (Indiscernible) We look forward to continue working with them in developing and reaching the goals in the Governor's ZEV Executive Order (indiscernible). Thank you very much.

CHAIRMAN WEISENMILLER: Thank you.

Any other comments from anyone on the line?

(No audible response.)

CHAIRMAN WEISENMILLER: Then let's transition to the full Commission. Commissioner Scott?

COMMISSIONER SCOTT: Great, I want to say thank you for the enthusiastic support from our station developers and the O&Ms and the Fuel Cell Partnership as well as our sister state agencies.

As you all know, we've got about 31, not about, we do have 31 hydrogen refueling open retail stations and there's another 29 under development. So we're making significant progress in standing up the hydrogen network, here in California. But we also recognize that we're still in the early market phase and that there's a lot of work to do. So the operations and maintenance support that's being provided here today through these grants is critical to ensuring that the stations remain operational, while the fuel cell electric vehicles are being deployed in California. And you heard that through some of the comments we just heard.

These O & M grants help reduce the out-of-pocket costs for the station developers, as they work to build efficiencies in station development and the supply chains. And it helps us to ensure that we continue to build a robust hydrogen transportation market here in the state.

So if you don't have questions, I will move approval of Item 10.

COMMISSIONER MCALLISTER: I'll second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This item passes 5-0. Thank you.

Let's go on to Item 11, Biogas Energy.

MS. MAGANA: Okay. Good morning Chair and Commissioners. I'm Pilar Magaña with the Research and Development Division and I am presenting the following three items for consideration. These three items are proposed under General Funding, Climate Change, Transportation Research Development and Demonstration.

The following projects were selected under a one-time funding directive and are neither EPIC nor Natural Gas funds. The one-time expenditure authority for $18 million is to support research to reduce petroleum use, drive greenhouse gas reductions and improve air quality from California's transportation sector.

The proposed projects are designed to inform near-term adoptions and implementation of low carbon fuels and to address critical research needs not addressed in current CEC research programs. While the ARFVT Program has focused on upgrading of biofuels, there is a need to focus on the conversions of waste feedstocks to an intermediate fuel that can be upgraded using existing infrastructures including refineries.

So this first item was selected under a

solicitation with the purpose of supporting the pilot-scale demonstration of thermochemical conversion systems that produce an intermediate fuel product, using California-based feedstocks with the goal of upgrading to low-carbon drop-in renewable diesel.

The project will fund installation and demonstration of an ablative fast-pyrolysis technology that takes a different approach from conventional reactors and is designed as a containerized system, enabling small, medium or large-scale deployment to be flexible with investment limitations and project-specific criteria such as feedstock availability and project location. The project aims to produce up to 1850 gallons of bio-oil per day from 20 tons per day of woodchips.

Currently, Western Placer Waste Management Authority is running the biomass though legacy combustion systems, which have inefficiencies and are also unable to handle the excess amounts of biomass being received. So by using an advanced thermochemical system being proposed, the Western Placer Waste Management Authority can operate a more efficient system and also create a useful product through the bio-oil production.

Project partners include California State University, Chico and the Joint BioEnergy Institute, who will perform measurement and verification work, while also

processing the bio-oil into swap-in vehicle fuel. Match funding is approximately $1.7 million for this project.

And I'd be happy to answer any questions. And Brian Gannon from BioGas Energy is also here to answer questions.

CHAIRMAN WEISENMILLER: Oh, good.

So I was going to ask first if anyone in the room or on the phone wanted to speak on this item? Yeah. Come on up. Please.

MR. GANNON: Hello, my name is Brian Gannon. I'm the President of BioGas Energy. And I wanted to thank the Commission for this opportunity to demonstrate the technology. And especially thank the staff, who have been so helpful in helping us prepare for this grant application.

The dual problems we are addressing here are the mass tree mortalities in the forests that are going to cause huge problems if left unattended. So by harvesting that wood waste, we still need something to do with it. So our technology intends to take that wood waste and make a bio-oil from that, using the ablative fast-pyrolysis technology. That bio-oil then can be refined in conventional refineries like the Chevrons or the BPs, into a low-carbon diesel replacement.

So we think that this is going to apply to the

low carbon fuel standard, make renewable fuel while addressing that massive problem of the tree mortalities in the forests. Thank you. If you have any questions, please let me know.

CHAIRMAN WEISENMILLER: Well, thank you. Anyone else on the phone?

(No audible response.)

CHAIRMAN WEISENMILLER: Then transition to the Commissioners.

I was going to say the next three are fairly interesting projects for us. As you know, we have EPIC and we have PIER Natural Gas, but we have done little research in the transportation area. And so this was sort of a one-time allocation of funding we got to do transportation research. I think the notion was to try to step up that area.

We're concerned obviously that the oil industry is not doing as much research on alternative fuels, low carbon alternative fuels, as necessary. So anyway, this is a great opportunity for us.

So can we move?

COMMISSIONER SCOTT: I'll move approval of Item 11.

COMMISSIONER HOCHSCHILD: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Thank you.

The next one?

MS. MAGANA: Okay. The next project is with Lawrence Berkeley National Lab's Joint Bioenergy Institute through a Federal Cost Share Solicitation. The purpose of this solicitation was to provide funding to applicants that were successful in receiving federal funding. This project was successful in securing approximately $120 million for the development of a bioenergy research center.

The Joint Bioenergy Research Center will support the production expansion of viable and sustainable domestic nonfood plant biofuels that are economically viable, ensure future energy security, reduce greenhouse gases to mitigate climate impacts and have the potential to create jobs in rural areas.

The CEC-funded portion of this project will focus on research and optimization of the deconstruction and conversion of sugars using California-based feedstocks for advanced biofuel production that can be used in internal combustion systems or used as a gasoline replacement.

LBNL will focus on the microbial production potential of advanced biofuels with an ultimate goal of achieving a cost for the advanced biofuel of $2.50 per

gallon within the next 7-to-9 years and will include scale-up up work that will be carried out at California-based biofuel production facility. Life-cycle assessment and techno-economic analysis of the technical results and performance will be carried out to ensure the conversion pathway meets all California low carbon fuel standard requirements.

The Joint Bioenergy Institute will be partnering with Sandia National Labs for strain optimization and Aemetis for the scale-up activities. We'd be happy to answer any questions.

CHAIRMAN WEISENMILLER: Thank you.

So is there any more comments from anyone in the room or on the line?

(No audible response.)

CHAIRMAN WEISENMILLER: We'll go ahead and transition to Commissioners. Again, this same thing, but this is I think the project any of us know at LBL, which is certainly interesting. It was good to be able to do some funding to get down to the second round. So anyways, do we have a motion?

COMMISSIONER DOUGLAS: I move approval of this item.

COMMISSIONER MCALLISTER: I'll second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Great.

Let's go on to 13.

MS. MAGANA: Okay. This agreement is with West Biofuels and was selected under a solicitation that focused on the pilot-scale production of a drop-in intermediate that can be used for upgrading to renewable jet fuel.

Renewable jet fuel is a promising near-term option for emission reductions in the aviation and military sectors. In order to reduce emissions for jet fuel applications in a short period of time, the industry needs an option that can be integrated into existing fueling infrastructure. Because the development and implementation process for aviation technologies is far more extensive. This solicitation and project will focus on finding an alternative low-carbon solution for a sector that currently has limited options.

So for this project, West Biofuels will partner with the National Renewable Energy Laboratory and UC San Diego to conduct research and pre-commercial demonstration of an innovative thermochemical conversion process called catalytic fast-pyrolysis, which is a fast, efficient and feasible method for converting lignocellulosic biomass to bio-oil by upgrading a dual bed gasification system.

While West Biofuels has demonstrated successful

performance of this system with California biomass at the lab scale, they will look now to demonstrate the technology at the pre-commercial level, and will be the first California bio-oil intermediate production facility using this process. By successfully demonstrating the modifications of a commercial gasification system, the project establishes the pathway to upgrading existing gasification facilities to advanced thermochemical systems to produce bio-oil. West Biofuels will be providing approximately 1.3 million in match funding.

And I'd be happy to answer any questions and Matt Hart, I believe, is also here from West Biofuels to answer any.

CHAIRMAN WEISENMILLER: Great, thank you.

So anyone in the room want to make any comments or anyone on the phone?

(No audible response.)

CHAIRMAN WEISENMILLER: Okay, we will transition to the Commissioners.

Again, this is a unique project in the sense that we're actually doing R&D on it in the local refuels area. And certainly it's good to see the strength of the applications we've gotten out of that.

COMMISSIONER HOCHSCHILD: Great.

COMMISSIONER SCOTT: This one's particularly

exciting. They're all great projects, but I like the jet fuel component as well to this one. So I'll move approval of Item 13.

COMMISSIONER MCALLISTER: I'll second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: This passes 5-0. Thank you.

MS. MAGANA: Thank you.

CHAIRMAN WEISENMILLER: So let's go on to 14, yes Michael?

MR. SOKOL: All right, good morning Chair and Commissioners. I'm Michael Sokol and I'm here to provide a brief update on SB 350 implementation. So just to recap, there were some key milestones for SB 350 implementation on today's Business Meeting agenda that you voted to adopt earlier. And I just wanted to quickly run through those starting with the Disadvantaged Community Advisory Group, which adoption today represents a key milestone. And then subsequently consideration by the CPUC will mark the formation of this group, which will start convening later this year to provide recommendations back to us on proposed clean energy and pollution reduction programs and their impacts on disadvantaged communities.

Secondly, I wanted to mark the Title 20 data

collection regulations, which as noted by the Commissioners have significant impacts and are a key element of the Energy Commission's data strategy in supporting potential policy improvements in the future. Supporting 350 energy efficiency doubling. And really supporting a broad range of the 2030 energy and greenhouse gas emission reduction goals for the State of California. Also, supporting future improvements to the statewide demand forecast, which was another item voted to adopt today.

Lastly, but certainly not least, I wanted note the 2017 Integrated Energy Policy Report, which was adopted today. And as you all know and as you heard there was a key focus on SB 350 implementation in this year's IEPR and so I just wanted to acknowledge all the great work from Heather and the team as the Commissioners already noted. But that was also a key element for tracking progress on SB 350 implementation and highlighting additional next steps that are going to be needed to really make sure that vision laid out by SB 350 becomes a reality over the next 12 years here.

So in addition to those deliverables, I wanted to highlight a couple of key upcoming activities for the Commissioners. Starting with on next Friday, March 2nd, a workshop hosted by the California Air Resources Board in coordination with the Energy Commission and the Public

Utilities Commission that's focused on kicking off a formal process to establish greenhouse gas emission reduction targets for the state's utilities and load-serving entities for use in our integrated resourcing planning efforts. And so we've been working closely with the Air Board and the Public Utilities Commission on this effort. Including a couple of workshops we held early last year with some of our stakeholders to kind of inform the background and lay out some of the context leading up to this formal process.

The second item I wanted to note was, as the Chair mentioned earlier, the draft Energy Equity Indicators Tracking Progress Report. It is currently in the final stages of internal review and we intend to post that along with a request for comments within the next week here. So we really encourage stakeholders to keep an eye out for that and provide feedback to us as we look to refine those indicators and those tracking progress in subsequent cycles.

So without going into any great detail, I do just want to acknowledge all the great staff work and countless hours that have gone into getting these deliverables to adoption today. And then with that I'm going to go ahead and pause and would be happy to answer any questions or else turn it over to the Commissioners for conversation.

CHAIRMAN WEISENMILLER: Okay. Yeah. Okay,

thanks, Michael.

Let's go on to the minutes.

COMMISSIONER DOUGLAS: Move approval of the minutes.

COMMISSIONER MCALLISTER: Second.

CHAIRMAN WEISENMILLER: All those in favor?

(Ayes.)

CHAIRMAN WEISENMILLER: Minutes passed 5-0.

Lead Commissioner and Presiding Member Reports; Commissioner Scott?

COMMISSIONER SCOTT: Great. Just one report for you all. I was fortunate enough to have the opportunity to go over to Berlin, Germany for the -- imagine Deutsch right, so D-E and then C-A for California, so DECA, Decarbonize Transport Conference. It was put on by our friends at ITS UC Davis and their compatriot think tank organization Agora in Germany. And it was a great opportunity to hear what the folks in Berlin are thinking about transportation, to talk about what California is doing, especially what the Energy Commission is doing in terms of transforming our transportation system in getting electric vehicles out there and working in hydrogen fuel cells and hydrogen fueling.

It was an interesting time in Germany, because there's a new government there. And they had not yet put

together their platform, so they couldn't really talk to us in specifics about what the plans were going forward except that, of course, they are working very hard to meet our global climate change goals. And they also have clean air issues that they are working on and so are very interested in decarbonizing transportation.

There were quite a few folks who had been part of our California-Germany Summit right after the CAISO Symposium last year. They're really excited to partner with us, looking forward to working with us again on putting together a second summit for next year or for later this year.

And there's a lot of excitement and interest for Governor Brown's Climate Energy Summit. People are thinking about what types of delegations, what types of groups to put together to bring to that summit. I mean, we're super excited about that. Many were working with Chair Weisenmiller, with your Advisor, Kevin, and so I encouraged them to continue to do that.

And then I had the opportunity to represent the Governor's Office in Oslo at the Nordic EV Summit. This was really exciting. There were more than 300 people there from over, I believe 70 countries. And in Oslo what's really exciting about Norway is in December they had 50 percent of sales were plug-in electric vehicles, 40 percent

of that are battery electrics, and then another 10 percent was plug-in hybrid electric vehicles. So to just see, and that's a huge jump over the last two to three years where they were probably more around 5 percent of sales. So it's been a huge jump in a very short amount of time.

To look at some of the awareness numbers, more than 80 percent of people in Norway are aware of electric vehicles, have been in one, have seen the charging for them, know about them, have considered buying them. And that is what we are looking to do in California, so it was great to have an opportunity to hear what they have done, how they have done it, trade some notes on what we're doing. They still have challenges, as you can imagine, with multifamily buildings and dense city centers making sure that you get enough charging infrastructure the same way that we do. But then to hear what some of the other Nordic countries were doing, hear about what India's doing, what China's doing on electric vehicles, kind of all around the world was a very exciting opportunity.

And I was delighted to have the opportunity to represent what California is doing there. So start, you know, my presentations with a photo of Governor Brown, talking about climate change just in case anyone wonders where California is on this. And then talk about the importance of decarbonizing our transportation sector to

meet those goals, and some specifics about what California is doing.

As you all know, a few Fridays ago, gosh almost a month now, Governor Brown issued a new Executive Order, so we will go from 1.5 million zero emission vehicles in 2025 to 5 million zero emission vehicles in 2030. One of the most exciting parts to my mind is that he also put in place an infrastructure goal, so for 250,000 chargers by 2025 including 10,000 fast chargers. And also to have 200 hydrogen refueling stations by 2025. So the Energy Commission will have our sleeves rolled up. We're going to get going on that, but it was exciting to have some news hot off the presses to announce while I was doing those travels.

So that's just a quick summary of what I've been up to.

COMMISSIONER MCALLISTER: Okay, that's exciting.

Yeah, just quickly I guess, the highlight of my last month or so. I did spend a week in Washington at a couple of Board meetings for NASEO, the National Association of State Energy Officials, and Alliance to Save Energy that happened to have their board meetings the same week. And took advantage to do some meetings with Leg staff and obviously many of our counterparts in other states. Kind of socializing a lot of what Commissioner

Scott just talked about, you know, and the big goals that we have on the transportation front, electrification front, and just all the big policy movement that's happening here.

I always get a lot of jaw dropping from the other states when I talk about the numbers, you know, 900 million, 500 million. Those are numbers that other states just don't have, so they're looking to us. And even purple states, red states, blue states, all are really interested in what we're doing, so I just wanted to convey that back here.

At the federal level it's largely defensive plays, trying to keep bad things from happening. And the Democratic staff understand that and are interested in our views and I think are strategizing about how to sort of keep backsliding from happening, so that's an ongoing conversation.

And then a lot of positive movement and coordination across other states to sort of take up the slack in terms of appliance efficiency standards and state level building codes and just aspirational goals that the various states have and are interested in collaborating much more proactively.

On appliance efficiency standards actually, there's kind of a wave of local, state level legislation to codify existing federal efficiency standards, so that if

those weaken then they don't weaken at the state level. There are probably ten or twelve states that are in a space where we're all kind of working together to figure out how to make a block that's bigger than just the West Coast, sort of more than just California. And that way go ahead and keep moving markets, because that'll do it. If a bunch of states get together that'll be a very clear signal to the market that they need to move forward.

So there's some model laws passing. New York is considering one that essentially would put in place at NYSERDA an activity like our appliance standards and give them more legal authority. So that's an effort at the state level of Vermont and other states have been passing model legislation to codify some of their standards. And so it's an effort, so I think it's exciting and it's sort of a cross-state effort that's really positive. And we're building a lot of relationships that I think will continue on regardless of where the federal direction happens to go.

I guess that's all I'll say this week or this month.

COMMISSIONER DOUGLAS: I'll just report briefly. I had the opportunity to speak at the VerdeXchange in January, late January on the climate adaptation sea-level rise topic. And it was a chance to talk about Cal-Adapt and recent improvements made to Cal-Adapt and also other

tools available that allow us to better model and understand those impacts and others and help foster resiliency. So that a nice event.

COMMISSIONER HOCHSCHILD: Well, first I just want to say I'm thrilled to welcome Terra Weeks as my new Adviser. And actually, Terra, if you could just come up and say a few words about your background. It's great to have you on the team.

MS. WEEKS: Hi Chair and Commissioners, I am thrilled to be here. Some of you may recognize me from my time as a Fellow when I was in graduate school two summers ago working in Commissioner Hochschild's office. But I am excited to be back on the team full-time, I came on just about three-and-a-half weeks ago now. And my background is a mix of renewable energy, kind of technology and policy, so I have spent some time working in the solar industry for solar marketing startup in the Bay Area. And then went on to work for the City of San Francisco in the Department of the Environment on their renewable energy program. And a lot of my work there centered around local reach codes going above state code on renewable energy projects.

And most recently, I was working for Elemental Excelerator, which is a clean tech accelerator focused primarily on energy startups. But they take a systems approach, so also take a look at transportation, water,

agriculture, etcetera. And I helped scale a team in Palo Alto, which they just launched this year, which is focused on increasing access to innovation in disadvantaged communities. So I'm excited to apply some of my background here at the Energy Commission.

COMMISSIONER HOCHSCHILD: So we're thrilled Terra's going to be hitting a lot of homeruns for us in the months and years ahead. And she joined Drew and I on a visit to Stanford recently. I'm very pleased to report we have over 100 applicants for the Stanford Fellowship Program, which is how we got Terra. And I've instructed Terra to get the very best folks to come to the Energy Commission this summer. And I want to thank Drew for joining me for that visit as well.

I just want to say a few words about the solar tariff. I've said this publicly in every speech I've given every week since it happened, but I just want to share my perspective with my colleagues a little bit. This is a 30 percent increase in the price of solar cells. It has already had a very, very negative effect on pricing, because the industry rightly regarded this as being the likely outcome six months ago when the process began. And so what's happened is everybody went and forward procured, prices went way up, so we've seen an uptick in solar prices. And the Solar Job Census just came out and we've

dropped from 100,000 solar jobs to 86,000 in California.

It is obviously very selective to do this, because everybody in this room and in the state practically has a cell phone. We're not manufacturing any cell phones in the United States. Nobody is slapping a 30 percent tariff on imported cell phones, so this is a big self-inflicted wound. And it will set back the clock although not change the ultimate destination for us. And it just remains a big hurdle. There's layoffs going on right now at companies in California like SunPower and others that are dealing with. Even companies that are manufacturing as SunPower is, in part in California. So I just highlight that, because it was a major, major event in the renewables industry.

I also just want to thank my colleague, Commissioner Douglas, who led a very fruitful discussion on offshore wind with this task force with a number of different parties. And one of the highlights there is looking ahead. You know, basically there's consensus in the offshore wind industry from the heavyweights: Siemens Gamesa and Trident and Statoil that within the next five years or so they're going to be at 12 megawatt turbines. That's where the industry is headed as a minimum and some are saying as high as 15, so that really is good to kind of just calibrate on.

Then the last thing, I went at the Chair's request to cover an event in Squaw Valley. They just became the first -- I believe the first ski resort, not just in the state but in the world, to commit to get to 100 percent renewable energy, which they're doing in concert with Tesla. And we will be having the cofounder of Tesla, JB Straubel, in April here to come talk to staff about the results of the Australia Tesla Storage Project, which is the largest lithium ion battery storage project in the world. And they have some actually, I think encouraging results on grid reliability and ancillary services as a result of that.

And I think that's it for me.

CHAIRMAN WEISENMILLER: I was just going to start out by, of course, thanking Diane for helping us get the fellows. And I'm just going to hit a bunch of topics that I'm sort of involved in lately.

I went to VerdeXchange with -- well I guess Janea was the one who missed that and they missed her. They kept asking about you, but again it's -- to the extent so much of California is south of Wilshire Boulevard it's a good opportunity for us to interact with that segment of California.

There was an EPIC event too, where we basically had an all-day event with the utilities walking through the

R&D's projects. Nancy Skinner did a kickoff, again very well attended, like 600 people. So again that was sort of built over time the ways to showcase what EPIC is doing and that was a nice good step forward.

We also had an event in Silicon Valley that week on the China-California Clean Tech group, brought together a number of the state incubators to talk about the opportunities of working together with China on clean tech.

Associated with that actually CFIUS, which is the group in D.C. that evaluates any international investments and infrastructure in the U.S., has really tightened up quite a bit what they do in terms of anyone other than the Americans buying an infrastructure and anyone building anything near a base. And so we actually got the first project through or helped Wilson & Walsh get the first project through. KEPCO is buying some of the recurrent projects that are dealing with the much more stringent security mitigation plans now.

So that was good. I met with Commissioner Peterman. We had a group meeting on storage. And I met with Commissioner Randolph on adaptation. Obviously with the fires we're dealing with adaptation issues on a real-time basis and sort of moving from academic studies to how do you respond to what's happening in Northern and Southern California this year or last year. So it's a busy time.

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

MS. VACCARO: So I have two items. I'll cover the first and then I'll leave it to you to cover the second, which will be announcing that we will be going into a closed session today.

CHAIRMAN WEISENMILLER: Right.

MS. VACCARO: And the first item is that I am very pleased to let you know that there's been a transition. Bill Dietrich, who spent quite a bit of time in the Efficiency Division as both a supervisor and an office manager, has joined the Chief Counsel's Office. Bill is over here in the far corner.

CHAIRMAN WEISENMILLER: Hello, Bill.

MS. VACCARO: And those of you who know him know he has extraordinary technical skills and a very keen mind. And we are so pleased to have him join the Chief Counsel's Office and the Transactions Unit. So welcome, Bill.

CHAIRMAN WEISENMILLER: Well, welcome.

MR. DIETRICH: (Indiscernible.)

CHAIRMAN WEISENMILLER: Yeah, and after we go through the Executive Director and Public Adviser Report and public comments then I'll announce we're going into closed sessions. So let's go on to Executive Director Report.

MR. BOHAN: Hi. Just two quick announcements.

First, it's not even been two months since Courtney Smith started as Chief Deputy and she's already making a tremendous impact. So I really want to thank her, however she left a void in the Renewable Energy Division. And we had lots of applications for the Chief Deputy job and then lots of applications for the Renewable Energy Division Lead. And I'm pleased to see the interest we got and emerging from the group was Natalie Lee, who you all know. But she's just been a tremendous force in the Division for the last several years, worked closely with Courtney. And it makes for a nice transition to have her just step into the lead role, so thank you very much.

CHAIRMAN WEISENMILLER: Okay. Great.

Public Adviser Report?

MS. MATHEWS: Two things I just want to highlight is last month I had the opportunity to go to the Community Choice Aggregate Supplier Diversity Symposium and that was a good opportunity to share some of our AD 65 (phonetic) diversity initiatives for diverse business enterprises. And let them know about the funding opportunities we have at the Commission.

And then this week I will be attending the first of three energy and environmental symposiums sponsored by the Environmental Defense Fund in partnership with the Strategic Growth Council and California Air Resources

Board. And they're going to focus on raising environmental and energy equity issues in disadvantaged communities, particularly communities of color.

CHAIRMAN WEISENMILLER: Great.

Any public comment?

Okay. Then the Commission will now go into closed session as specified in Agenda Items 17c and e. Specifically, Item 17 provides notice the Commission will adjourn to closed session with its Legal Counsel pursuant to Government Code Section 11126(e)(1) to discuss the following litigation to which the Energy Commission is a party. Item 17c *Energy Commission v. Electricore, Inc. and ZeroTruck* and Item 17e *National Electrical Manufacturers v. Energy Commission.*

We anticipate returning to open session at about 1:00 o'clock. That's an estimate and good.

(Adjourned to Closed Session at 11:41 a.m.)

(Return to Open Session at 1:02 p.m.)

COMMISSIONER DOUGLAS: All right, 1:00 o'clock in the afternoon. We're back on the record. We've completed our closed session. We don't have any reports and with that, this Business Meeting is adjourned.

(Adjourned the Business Meeting at 1:02 p.m.)

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REPORTER'S CERTIFICATE

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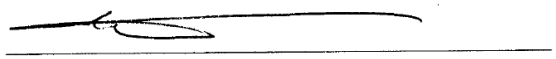

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