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CALIFORNIA PUBLIC UTILITIES COMMISSION AND
CALIFORNIA ENERGY COMMISSION

In the Matter of:)
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Joint En Banc Hearing)
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JOINT EN BANC ON

CHANGING NATURE OF CONSUMER AND

RETAIL CHOICE IN CALIFORNIA

CAL/EPA HEADQUARTERS BUILDING

1001 I STREET

BYRON SHER AUDITORIUM

SACRAMENTO, CALIFORNIA

FRIDAY, MAY 19, 2017

8:45 A.M.

Reported By:
Gigi Lastra

APPEARANCES

JOINT AGENCY PARTICIPANTS

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STAFF:

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SPECIAL GUESTS:

Assemblymember Bill Quirk

PANEL PRESENTERS (* Via telephone and/or WebEx)

Panel Discussion - Agenda Item No. 3:

Ralph Cavanagh, Natural Resource Defense Council (NRDC) (Panel Moderator)
Marcel Hawiger, The Utility Reform Network (Presentation)
Strela Cervas, California Environmental Justice Alliance
Tim McRae, Silicon Valley Leadership Group
Mark Byron, University of California, Office of President
Nora Sheriff, Alcantar-Kahl Law representing California Large Energy Consumers Association
Julien Gervreau, Jackson Family Wines

APPEARANCES (Cont.)

Panel Discussion - Agenda Item No. 4:

Sue Tierney, Analysis Group
(Panel Moderator)
Anne Hoskins, SunRun
Geof Syphers, Sonoma Clean Energy
(Presentation)
Ron Perry, Commercial Energy
Jeff Cramer, Coalition for Community Solar Access
(Presentation)

Panel Discussion - Agenda Item No. 5:

Ren Orans, Energy and Environmental Economics, E3
(Panel Moderator)
Caroline Choi, Southern California Edison
Steve Malnight, Pacific Gas and Electric Company
Dan Skopec, Vice President, San Diego Gas & Electric

Panel Discussion - Agenda Item No. 6:

Jan Smutney-Jones, Independent Energy Producers Association
(Panel Moderator)
Sue Tierney, Analysis Group
Ren Orans, E3
Ralph Cavanagh, NRDC
Jon Wellinghoff

PUBLIC SPEAKERS (* Via telephone and/or WebEx)

Aubrey Stone, California Black Chamber of Commerce
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Rick Brow, TerraVerde Renewable Partners, LLC
Craig Goodman, National Energy Marketers Association (NEM)
Karey Christ-Janer, Self
Edward Mainland, Self
Doug Karpa, Clean Coalition

I N D E X

I N D E X (Cont.)

I N D E X (Cont.)

This section will be an opportunity for our panel moderators, as well as nationally recognized industry experts, to reflect on the day's discussion and share their perspectives ...

Moderator: Jan Smutney-Jones, Independent Energy Producers Association

P R O C E E D I N G S

May 19, 2017 8:49 a.m.

PRESIDENT PICKER: So thank you for joining us here at our en banc on customer retail choice. For those of you who are not familiar with the nomenclature, this is simply a way in which we can gather all the Commissioners, in this case both from the California Public Utilities Commission and from the California Energy Commission to hear in public information that will help all of us to understand perspectives on issues that are emergent or are developing in California.

So for those of you who are in the Klamath Room, the overflow room, there is additional space here in the auditorium.

I want to thank all of you for joining us. I want to thank all of our panelists. I want to thank both my staff and the staff of the California Public Utility Commission's Energy Division. I want to also acknowledge the attendance of Assemblymember Bill Quirk, who skipped an important day in his district to join us here today.

Just some housekeeping, in case of an emergency, I will signal that there's an emergency. We leave through the back doors, down the stairwell to my right, to your left, and out the front the doors and across the street to Cesar Chavez Park. I am a wilderness first responder, but

my ticket has expired, so you take your chances if you ask me for first aid.

So I'll just kind of help frame the day a little bit. And then ask for comments from my colleague and my coworker, Bob Weisenmiller.

The reason that we here is that we're seeing absolutely dramatic changes in California's electric utility industry. Things that most people tell me are absolutely unprecedented in the past 100 years, since the industry first came in to being. And a lot of this is brought about by a sequence of innovations and technology, as well as many incremental policy actions that are taken in several different decision making arenas.

Between rooftop solar, community choice aggregators, direct access providers, the California Solar Initiative, battery storage and other programs like the Self Generator Incentive Program, or the single and multiple family solar housing grant programs as much as 25 percent of investor owned utility retail electric load will be effectively unbundled and served by either self-generation or a non-IOU source or provider sometime later this year.

That's another set of challenges that has crept up on us. It's another set of developments. It's another set of opportunities that we never really thought through

in a coherent way.

So this year is likely to grow quickly over the coming decade, with some estimates that over 85 percent of retail load served by sources other than the IOUs, the investor owned utilities, by the middle of the 2020s.

So we've also set ourselves down a path to fundamentally transform our energy and transportation systems through deep carbonization. And that will in turn will create a growth, equity and prosperity. But achieving this 40 percent below 1990 GHG levels by 2030 will require many tens of billions of dollars in the new infrastructure, massive wind and solar farms, tens of thousands of electric vehicle chargers, millions of EVs. And all of that supported by a resilient, nimble and flexible grid that's still being developed.

So a lot of this policy was predicated on a system of centralized procurement, through three large electric utilities and the local municipal utilities. And that strategy for building a massive carbon reducing infrastructure is being sundered. In 2000, we made somewhat of a similar policy shift to disaggregated choice of electricity providers in response to legislative mandates. But this time, we're again moving forward through a broad set of customer choice programs and we're moving in that direction without that coherent plan to deal

with all the associated challenges that competition poses, ranging from renewable procurement rules, to reliability requirements, customer protection, developing reliability programs. It just will upend many of the settled questions that have been in the background.

So I think the question is fundamentally, how do we organize our electric system to achieve our goals? And who's going to be at the center of financing that? So before we proceed to think about what's coming next, I'm just going to review in more detail how we got here.

Here's a brief history of the California market. It does not call out, for example, key programs like the Self Generator Incentive Program. It's just a way that people can see how incrementally we have started to move in this direction, but without a central strategy.

So again, last time we tried this leading up to the new millennium, we deregulated the electric industry and we created a flawed retail market and retail design for consumer choice. Now, essentially private electric utilities only provided wire and transmission services. And customers were expected over time to buy their electricity from third-party companies.

After a catastrophic collapse of the new markets, California very consciously made the decision to return to the three IOUs and the multiple municipal utilities as the

dominant and monopoly providers within their geographic areas of retail electric service for California consumers, but began to restrict the ownership of generation for those electric utilities. So we still had a market for portions of this system.

So in addition, part of that response was to develop new business models and tools to enable alternative models of customer choice.

Three of today's major vehicles were initiated in this period, in 2002. The Legislature passed AB 117, which created the framework for community choice aggregation. In 2006, the Legislature also passed SB 1, creating the California Solar Initiative. In 2012, AB 2514, which created the energy storage mandates. So you can see how these things happened, but not in a rigorously defined and thought through program.

Slide two just sort of points out how innovation is actually starting this process of hollowing out the investor owned utilities and their role as central procurement and providers.

So the confluence is these disruptive business models represented -- I just did two examples of CCA and net energy metering -- are to some extent dramatic. In the case of CCAs it's local elected officials after years of thinking about starting to embrace the challenge. And net

energy meeting, which is fueled by unprecedented cost reductions in PV solar.

So we've seen a 30 times increase in California customer engagement in new energy solutions to the point that as of today, over 1.9 million Californians will be acting on some type of energy choice by the end of 2017.

So looking forward to 2020 and beyond, it's entirely conceivable again that the vast majority of Californians receive their retail electric service by a entity other than a utility.

So front and center in this energy transition is the fact that technology, advanced metering infrastructure, rooftop solar, increasingly price drops in battery storage, just as examples are allowing customers themselves to invest in systems that allow them to meet needs that were once the sole providence of a regulated monopoly utility.

So this progression, and the implication that Californians are going to be driving an increasing share of the investments in the energy systems through consumer-oriented purchases of electric cars, rooftop solar, batteries in garages, if that continues we must be increasingly focused on reorienting our energy system to enable customer engagement.

But there's a whole range of other services and compacts, whether it's advanced energy research, energy

efficiency grant, low-income support, protecting consumers, resource planning, ensuring reliability, that are financed by a charge based on the volume of electricity used. So as customers depart, those costs may be passed on differentially to different retail customers, depending on the program. And there's the less of that centralized planning that helps us to be sure that we're able to meet our goals.

This is the challenge of a democratizing electrical system is that as millions of people make choices we also have a whole range of not just distributed energy, but distributed decision making. How do we make sure that it adds up to the state's policy goals?

So slide three just kind of shows a little bit about how we think this trend could continue that just kind of points to increasing shares. We didn't include direct access since the Legislature has not lifted the cap. If that were to take place, I would expect that direct access for commercial and industrial customers, as it has in other states, like Illinois, would also probably take bites out of the IOU and potentially some of these other shares.

So after today's proceedings, the CPUC and the Energy Commission -- and we'll work with the California independent system operators -- we'll work closely to develop a set of strategic options to consider how we

proceed. High on this list will be the role of the utility, the CCA and rooftop solar and retail market. And how regulatory models themselves must change to accommodate this transition from a few very, very large utility decision makers to millions of distributed market participants.

So thank you and I look forward to hearing your panelists and speakers. I will say that people are starting to hand me papers that they would like to have entered into the record. So I encourage you to give them to Nick Chaset, so that we can serve them on all the lists and they can become publicly noticed.

I also will say that I'm sorry that we're not going to have Peter Fox-Penner. He had an emergency that came up, so he couldn't join us today. He has a statement, which we'll also produce as part of the record, but I would recommend his book to you "Smart Powers," an analysis of how you can look at these different trends.

So with that, I'll shut up and pass it along to my colleague Bob Weisenmiller.

CHAIRMAN WEISENMILLER: Thank you. Thank you, Michael, for the opportunity to be here today. And at the same time for actually starting to deal with some fundamental questions.

Often times in our agencies we have a myriad of

applications that are dealing with pieces of the puzzle. And this is a welcome opportunity to take a more comprehensive view. Obviously, we're at this nexus of regulations, market and technology. And as you said, certainly the technology is changing fast. I want to remind everyone that most or our industries are not considered utilities and are not regulated by the PUC. And so going forward, again you're back to the question of which of the functions are still utility functions and which are not and what are the consequences of that mixture?

Again, I want to remind everyone of a couple of basic points. One is that certainly markets can change on a dime. Technology can also really go through traumatic transformations. Regulatory processes take forever. You know, I've heard people describe it as watching paint dry and many of you have been in those processes. So one of our challenges, particularly I think this notion of getting out in front with the plan, is if we don't when we hit these regulatory singularities we're going to be scrambling really, to try to catch up with the consequences.

Another sort of fundamental thing, again is that most industries are not considered utilities and are not regulated by the PUC. And certainly more and more of those industries are getting into some of the services. Again,

people really don't care about electricity or gas or whatever as much as the basic energy services. Certainly, I think Ralph and I went through this discussion many decades ago where people aren't really here to consume electricity, but they want light, they want heat, they want food. And certainly that's a way of producing that.

And so again when you look at the Alfred Kahn definition of a utility in the "Economics of Regulation," it's where do you have economies of scale? I mean, if the fundamental premise would be that you don't want to have a number of competing distribution lines in downtown San Francisco say that -- or at stage I would argue, before the late '70s the theory was well, it's cheaper to build a larger power plant than a smaller power plant. You can reduce rates, you can grow a rate base, shareholders and consumers are very happy.

At this point, there's clearly not economies of scale in generation. At that point, in the late '70s it was pretty clear that building larger nuclear plants was not an economic solution, particularly relevant to energy efficiency, renewables, cogeneration. So at this point again, when you look at the procurement function, people have lots of choices. I mean that's the basic message that we're talking about the technology. You can have a solar system installed on your roof. You could have combination

of energy efficiency. You can get zero net energy.

Probably the choices are greater for commercial industrial customers than they are for residential, but certainly people are looking at aggregating the residential choices. So again, a regulatory compact would, which has provided reliability, has provided service to all, has provided some degree of consumer protection, what do we do going forward?

Thinking about, for example, reliability I was in this room not that long ago when FERC and PUC were debating this question of capacity markets. And the PUC solution was, "We'll just do bilateral contracts to keep the central facilities operating."

What I understand at this point, given the changing nature of industry, utilities are not signing bilateral contracts. So we're in this sort of transformation, at this point. We know we had a system which sort of worked before. We're going into the future, which if we think about and are clever can work, but we've got to get out in front of it. This other part of it, just like I said, it's really critical that all Californians have access to essential energy services at a reasonable cost.

Well, the reality is competitive markets. You're going to see your products to folks that can pay your bills

and that can pay their bills. And unfortunately, some of our citizens can't, or need some degree of care or other opportunities, ways of making sure they continue to get those essential services. I mean, markets do not care about everyone is the bottom line, so how do we make sure as we go through this transformation we're not leaving folks behind?

Other sorts of questions is obviously this is great for innovation and we need to keep pushing the innovation. We also need to be continuing to be pushing for jobs. Certainly, the utility sector, utility workers have phenomenal legacy benefits in many respects compared to the clean tech industry. But how do we again make sure, going forward we're not only benefiting everyone, but we're making sure that we maintain that good jobs opportunities for our citizens?

So I think basically we're going through a real transformation. It's important to think fairly deeply about the issues that are coming up, try to get out in front of them. I would say one of the really critical things obviously, as Michael talked about, we have very aggressive greenhouse gas goals. We need to transform our whole societies in that way. Utilities are part of the engine for doing that. And their ability to do that, to provide the financial commitments, are not obvious going

forward. So somebody's got to help us do that transformation. And there are ways that innovation can drive it faster. And there are other ways where we may find the pieces we need not really in place.

So bottom line is it's a good opportunity today to start the conversation, think deeply about some of these issues. And realize we need a plan going forward, so that we get out in front of stuff before markets or technology really opens up opportunities we haven't thought about, or challenges we've not thought about and try to address with what's going to be a slow, deliberate, careful regulatory approach.

So thanks.

PRESIDENT PICKER: So every one of the Commissioners who sits here before you has had a hand in pieces of this. And so this is probably our first chance to really sit as two bodies, and even within bodies, to think about what it means that these individual efforts are leading to a transformation. So I'd like to just check to see if any of my colleagues have anything they'd like to say.

I know Commissioner Peterman has been looking a lot at these kinds of issues from the keen eye of an economist as to how costs are distributed.

COMMISSIONER PETERMAN: Thank you, President

Picker, Chair Weisenmiller for convening this forum. We have a lot to go over today, so I'll be brief. Let me just echo my thank you for all of you participating.

We began to touch upon these issues with our en banc in February on continued choice aggregation. And there is still follow-up work we're doing in response to that. But I think that discussion and really seeing the broad interests in what was happening, not only with community choice aggregation, but implications for the utility, got us thinking more broadly about declining load. And so I do think it's necessary to start having this conversation and for us to be able to identify what are the different steps as agencies we need to take.

In particular, I'm interested in understanding and getting feedback on the order in which things need to happen. Because everything unfortunately cannot happen at once, but it's time to start the process.

COMMISSIONER MCALLISTER: I would echo that thanks for all of you for being here and for Chair Weisenmiller and President Picker for convening this. I'm really looking forward to the conversation, I will be very brief here. I guess I would just put a couple of words out there.

One is we're looking for ways to integrate. And the regulatory process is not easy to do that within.

Certainly, I oversee the energy efficiency efforts at the California Energy Commission. And I would just encourage us to, in that area and other areas, to think about how we can look at solutions as not bolt-ons. You know, often we have carve-outs and bolt-on solutions and sort of it gets pretty kludgey and pieced together.

And so if we can integrate and think about how we can take all these various sources of energy supply on the demand side, and on the supply side. And just figure out how we can integrate them into a market that works together and sends the right signals to each of them, instead of having to bolt on different solutions and have individual rules for each section of the solution.

So I'll try to think about those kinds of solutions and help us work through these issues, so I really appreciate all of you being here.

PRESIDENT PICKER: I will say when we were putting the slides together for my presentation I thought about including a slice in the slides for 2020 for zero net energy buildings, which is your proceeding. But at this point, we can't even guess what that's going to do to declining load in the electric industry.

COMMISSIONER MCALLISTER: That's a great example of an issue that looked like a nice silver bullet ten years ago. We didn't have all the market-based solutions that we

have now and the meter meant more then, than it does now. And it's increasingly kind of an arbitrary distinction at that meter. We have stuff out there on the Grid. We have stuff behind-the-meter. And we really need to figure out ways for all of that to work together.

So zero net energy really doesn't look much like it did ten years ago and we have other solutions and we're fortunate to have those solutions. I mean, I think we have a lot of opportunities to do things in an economically optimal way that will still get us where we want to go. And that doesn't necessarily mean having all the resources for an individual property behind-the-meter.

For example, I mean we could talk about many issues in that same light. We've learned a lot. We have a lot more technology, and innovation and smarts in the state as compared to ten years ago. So I think it's really an opportune moment to revisit that issue along with all these others.

COMMISSIONER RANDOLPH: I'll just briefly thank President Picker and Chairman Weisenmiller for convening this. As we look at issues of looking at the big picture in integration, consumers, as they're making these choices, it's not their responsibility to look at the big picture. It's our responsibility. They don't see the full cost picture. They don't see the full reliability picture. And

so having discussions like this, where we can identify those challenges and potential solutions is absolutely our responsibility. And I'm excited to have the discussion today. Thank you.

PRESIDENT PICKER: Commissioner?

COMMISSIONER GUZMAN ACEVES: No.

PRESIDENT PICKER: Nothing, oh okay. Okay. Well, thank you.

So with that, I'm going to turn this over to Nick. Are you going to introduce the Panel Chair?

MR. CHASET: Yes, thank you.

So our first panel is our consumer-oriented panel. We have a group of esteemed representatives of various consumer groups. And the panel will be moderated by Ralph Cavanagh, so I'm going to pass it to you, Ralph, to introduce the speakers and kick it off.

PRESIDENT PICKER: So Mr. Hawiger, could you turn your name-tag around, so that we can see it? Thanks.

MR. CAVANAGH: And actually if all of my colleagues could do the same.

Thank you, Nick. I'm Ralph Cavanagh. President Picker, Chair Weisenmiller, it's my privilege to present to you six admirably qualified representatives to address the question, "What customers want", which is how we're starting. And although the diversity of California and its

desires and wants can't possibly be captured in six people, Nick Chaset and his colleagues have done as good a job as is possible, as I think you'll see in a moment.

The way I'd like to suggest we proceed, and of course I have no power whatever to enforce this suggestion, is that the Commissioners allow the opening statements to go in order and we'll proceed from left to right. After which I will look to all of you and I will be astonished if you do not consume the remaining time. But in the unlikely event that you don't, I will have a few questions for the panelists as well.

We will begin with Marcel Hawiger, who is an attorney for The Utility Reform Network. And each panelist is going to get the same minimalist introduction, because their remarks will speak eloquently for themselves.

Marcel? I'm right here. I'll come up and shut you down, Marcel.

MR. HAWIGER: Thank you very much.

Commissioners, thank you very much for inviting TURN to participate in this important en banc. My name is Marcel Hawiger. I'm a staff attorney with The Utility Reform Network. TURN, for those who might not know, is a statewide consumer advocacy organization. We represent the interests of residential utility customers at the Public Utilities Commission and at the Legislature and wherever

else we have the resources to participate. I'm going to skip some of the introductory, because we don't have much time in this seven minutes.

(off mic colloquy.)

And let's see, am I supposed to point this in some particular -- okay. I hope to get through a few topics, but we'll see how many I actually cover. Let me say the Staff White Paper does an excellent job summarizing where we are in terms of energy procurement. Since about 2000, obviously for about the first decade it was mostly the investor owned utilities, the municipal utilities and the legacy direct access or retail choice in California.

As President Picker mentioned, since 2010, what we've seen is a huge growth in community choice aggregation and rooftop solar.

And I think the central issue facing California is how do we get to a 50 percent and more renewable and clean energy future while maintaining reliable service and hopefully at the lowest possible prices. I fully agree with President Picker, your comment that technology and reduced solar costs have driven the rooftop solar explosion.

I want to make two points, main points, in my remarks. One is I think under this existing system, we can meet our goals although there are some significant

regulatory issues that we have to solve. And my colleague, Matt Friedman, discussed some of those issues with respect to community choice aggregation at the prior en banc. What I hear now though is a renewed interest in a discussion about reopening this sector, the direct access electric service providers. And I want to posit that the structure of direct access is fundamentally different from community choice aggregation. And that the best way not to meet our goals is to reopen direct access before solving some of the existing problems.

Direct access, unlike CCAs and rooftop solar is not driven by technology. I want to suggest that it's driven by the traditional problem of lumpy generation investments. You've all probably seen this graph. You know, you build a power plant. You get excess capacity for some time until load catches up and then you build another power plant. The promise of distributed resources, solar, storage, etcetera is that we can build it smaller. Consumers can put it in smaller. They can put it in faster, hopefully it can better match actual load growth. And hopefully we can avoid building large power plants that become stranded if load growth doesn't material as forecast.

This is what actually happened in California. It's not just theory. The 1980s, each line here is 500

megawatts, '84,'85,'86,'87,'88,'89, over 1,000 megawatts of new power plants came online each year including about 3,500 megawatts in 1985 when Diablo Canyon came online. You note that there is kind of a flat line in the '90's and we could maybe talk about that later. A number of factors, at least one of which was opening the discussion, opening the discussion about retail competition by the Public Utility Commission at that time. And concerns about who's going to be the one responsible for buying load, but there were other factors.

Anyway, all the capacity got built in the '80s. The result was that there was a lot of cheap wholesale power in the spot market. We were in that point where there's excess power plants capacity. People were happy to sell power cheap, but utility rates were high. They reflected the imbedded costs of building those power plants. So large industrial and commercial customers wanted access to that cheap power. They went to the Legislature and lo and behold, we got direct access.

Where are we today? We're in somewhat of a similar situation today. The early 2000s -- and note now each line is 1,000 megawatts, not 500 -- a number of power plants built. Some were built in the early days of the market by companies such as Calpine that built merchant plants on the hope of high energy costs. Some were built

in the mid 2000s as a result of the resource adequacy rules and utilities signing long-term contracts. But most importantly here we got 2009, 2012, 2013, 2014, large editions of power plants, you know, it was 3,000 megawatts in 2012, almost 7,000 megawatts in 2013. These are mostly new wind and solar utility scale renewable plants built under long-term contracts to the utilities.

Now, they don't have the same impact as the combined gas cycle, a lot of capacity, less energy. Still, we all know we are in an era where we have cheap wholesale power negative pricing. No wonder other industrial and commercial large customers would like to get it. Why not, it's out there. Who wants to keep paying for the capacity costs that are imbedded in utility rates?

What about residential customers, what happened the first time around? Well, you see in this graph industrial customers, 30 to 35 percent of the load went to direct access. Large commercial customers, about 15 percent went to direct access. The small commercial and the residential especially less than 3 percent ever went on to direct access.

And there's also this interesting time period between December 2000 and July 2001, when wholesale markets went haywire and all the electric service providers dumped their customers back down to the utilities.

I'm going to skip this for a moment. So what's my message? My message is that residential customers -- direct access did not benefit residential customers. They signed up for clean power, mostly based on elusory promises of 100 percent green power that was basically met with renewable energy credits, no new renewable generation built.

The direct access model is built on cherry picking large commercial, industrial customers who want cheap prices who have fairly good load factors. It's based on short-term contracts with customers. I don't know all the contracts. I don't think anybody signs up for more than two years, certainly not more than five years, with their electric service provider. They do not sign long-term supply contracts that result in new renewable generation capacity being built. And that's different from the CCA hope. And we can come back to that.

The acquisition costs for residential customers simply don't make it worthwhile for anyone to go after them unless you forcibly through them all out into the retail competition market. And the evidence in states with retail competition shows that generally prices for residential customers are higher than the default utility rate. And I'm not talking about interstate comparisons, because those are very difficult to do. I'm talking within a state that

has both retail competition and a default service provider.

In fact, I gather that although the New York State Public Service Commission just recently started a rulemaking to consider ending residential retail competition, due to a lack of benefits. So --

PRESIDENT PICKER: And also predatory marketing.

MR. HAWIGER: Absolutely, which we have certainly seen in some of -- I don't know if it's predatory -- we've heard complaints on the gas side about marketing tactics.

I think at the moment where we're at we can deal with some of our issues, because community choice aggregation is built on a model of a stable customer base that may allow for contracting long-term with renewables. There certainly are credit issues and we're hoping that those will be resolved. There are still issues to be worked out. What happens if prices do go crazy in the wholesale markets? There are also accountability for the CCAs. Both of those are not present in the electric service retail competition model.

The Staff White Paper lays out very nicely the problems and issues we have to solve to get to a greater than 50 percent renewable future. Do we continue to rely on the utilities to procure long-term capacity and then allocate other costs among other entities? That's sort of the current model. Do we require all entities to meet

clean energy and reliability goals, which would require some changes in jurisdiction or do we create a wholly separate procurement entity? Sorry, you know, my --

PRESIDENT PICKER: We don't have anybody here from DWR to answer your call.

MR. CAVANAGH: Wrap up, Marcel.

MR. HAWIGER: I'll just leave you with the message that I think there's going to be a challenge already with the existing market, but I think we can solve them. And I would encourage you not to consider and go forward with reopening retail competition until we figure out some of the existing challenges we have in our procurement model.

Now I'm also happy to talk more about what I see residential customers benefitting. How they've benefitted ,the rooftop solar explosion, what has driven that, what challenges remain. But I think -- was that a one minute or was that a time out? (Laughter.)

MR. CAVANAGH: It was one minute, but you've used it.

MR. HAWIGER: Okay, so hopefully we can come back through some of that. I thank you very much for your time and I hope we can continue this conversation.

MR. CAVANAGH: Thank you, Marcel.

We'll be hearing next from Strela Cervas who is

the Co-Executive Director of the California Environmental Justice Alliance. Strela?

MS. CERVAS: Thank you so much, it's working now. (microphone).

Hello everybody, thank you so much Commissioners, for having me here today. I really appreciate you inviting the environmental justice perspective to come here. I'm probably going to have probably the most different perspective, coming from an environmental justice community. And I'm going to speak pretty broadly. I was asked to talk about the vision for CEJA, the California Justice Alliance, and what our top priorities are and what are the solutions we've been working on. So I'll just lay that out.

So first of all, who is the California Environmental Justice Alliance for the people in the room that don't know us. So we represent 30,000 working class people of color all across California. And we're really founded on the idea that people had had enough of their communities being the dumping ground for pollution and toxic facilities and unsafe drinking water. And that we have a vision for our people that deserve a healthy place to live, play, and go to school no matter what your race is. And that all people should have an opportunity to participate in policies that impact them on a day-to-day

basis. And that the most vulnerable communities and the most impacted communities should be the leading voices with what their own vision for a healthy and sustainable community should look like.

So I'm going to lead with what our energy equity work is. Last month, the NAACP came out with a report that said that electricity is a human right. Electricity is a human right. And we actually, at CEJA, really do believe that. They talked about a man having to resort to using an electric generator to power his home after losing service from the Grid. And then got carbon monoxide poisoning from a generator that ended up killing himself and his family. And then a mother in New York, who used a candle light to power up her home and the authorities said that the candle was responsible for killing her three children and herself.

Here, in California, we see very similar issues of drastic examples of this magnitude. And a new report from PSE Healthy Energy came out that said that over 80 percent of peaker plants in California are located in disadvantaged communities. And we see that these peaker plants are some of the most highest polluting communities. And they're located in the most vulnerable communities.

So given all of that, what we're really excited to see in California is a transition off of fossil fuel and leading into this new fossil-free era, where we're bringing

in a lot more renewable energy and efficiency systems into especially disadvantaged communities.

What we talk about in CEJA is something called the green divide. And what we often fight for are energy systems that are specifically prioritizing environmental justice communities that have been often left out of the green economy. Recent reports show that only six percent of all rooftop solar has actually reached disadvantaged communities. And so this is really the green divide that we're talking about that disadvantaged communities are often told that the green economy will save them, will give them jobs, will bring in a lot of infrastructure. But right now, what we're seeing is still a huge gap in the clean economy.

There aren't a lot of local jobs and a lot of local economic opportunities for these communities and we see that this can really be addressed.

One thing that we did in partnership with the California Energy Commission this past year was support the release of the SB 350 Barriers Report. And I don't have to go through everything in that report, because all of you Commissioners wrote it. But for the people in the room, I'll just highlight a couple of different barriers in that report that don't only apply to SB 350, but I think should be highlighted for the purposes of this en banc.

One is that environmental justice communities experience low home ownership rates. So we have a lot of number of renters in our communities that often don't get the benefits of the green economy. There is insufficient access to capital. There is building age and a problem with old building stock. And then there's a lot of remote and underserved communities all across California.

There are different program and policy barriers, so one is market delivery. And to this what we mean is how do you actually effectively reach low-income communities and disadvantaged communities? And that you really need to partner with community-based organizations on the ground that really know how to do that.

There's a lot of data limitations. So for example, the narrative is that rooftop solar cannot penetrate low-income communities or disadvantaged communities, because our rooftops are really unsuitable. We live in really old buildings again, but there isn't a whole lot of data that shows this, and many other examples of data limitations.

And then there's the unrecognized non-energy benefits. So what often communities want is to feel that the state and our policies are actually investing in environmental justice communities, and that it's not something just for the rich and the wealthy.

So the top priorities and the solutions that we seek to address some of these things are -- we do a lot of advocacy to transition away from fossil fuels. And the conversation, I think today, has been would you prefer IOU versus CCA versus direct access? Again, what we're really excited is transitioning authentically away from fossil fuels and dirty power plants and oil refineries that are located in disadvantaged communities and bringing in a lot more local distributed generation into these communities.

Closing that green divide, so again how can we increase that 6 percent or even less of the renewable energy in these communities? And turn that into 25 percent or even 50 percent of the program, renewable energy programs, into disadvantaged communities. And various examples to do that are how to get specific carve-outs in different policies. There are also not just a carve-out but actual concrete big programs that can scale up.

And then how do we actually get the public health benefits and then the local jobs and economic benefits into these communities.

Community participation is also a big deal for us. So this is something that I would like to highlight, because energy policy is something that is incredibly wonky. We're sitting in a room in Sacramento and it's very, very costly resource intensive, capacity intensive to

bring up the thousands and thousands of community members that are impacted by policies that are passed by our Legislature and our state to come and speak for themselves and talk about what they really want in their communities. So I would encourage that we think about how to authentically engage in communities and for there to be a real community voice, so that that is meaningful.

And then a comprehensive suite of programs, so what we think at CEJA is that there is not really a one size fits all. Again there are a variety of different barriers that are listed in the SB 350 Barriers Report and many others that I can outline. And we have advocated on a comprehensive suite of programs that can address the many different barriers.

So we've advocated for a good NEM and VNEM program with a specific focus for disadvantaged communities. We've advocated for shared solar programs, again with a specific focus on disadvantaged communities. We've advocated for a feed and tariff model as well. And we've also advocated for CCA models supporting the local members that are part of CEJA. So we have a number of local member organizations that are part of the California Environmental Justice Alliance that are advocating for CCAs on the ground. So from San Francisco to Richmond, to San Diego, now in L.A., and then we also have a partner in the

Central Coast that have been in conversations around a CCA.

So I would say that again there is no -- for us I don't think there is a one size fits all, because there are a number of different variables there.

And then lastly is collaborative partnerships. And so this is something that we've been working on with both the California Energy Commission and the CPUC. And what we mean by this is that we really want to engage in collaborative partnerships with all of you of. And not just come up here and have two minutes to speak, but really invite you to come to our local member organizations on the ground, so that they themselves can tell their stories. And they themselves can talk about what the barriers are and challenges are and then what their vision is for an equitable energy future.

We did this when we partnered with the CEC on the SB 350 Barriers Report. We're now doing it with an energy equity tour. Some of you have engaged in that where we're bringing some of the CPUC Commissioners to local members on the ground and they get to tour the local area. And look at what the dirty fossil fuel facilities are and then also what are some of the really exciting models for renewable energy locally.

So with that, thank you very much. And I'll bring it to the next speaker.

MR. CAVANAGH: Thank you.

The next speaker is Tim McRae, Vice President of the Silicon Valley Leadership Group. Tim?

MR. MCRAE: Good morning, Commissioners. I am going to speak first about the Silicon Valley Leadership Group, because we're sitting here on a customer panel. And we do represent a lot of large end users of energy, who are energy customers, but we represent more than just that. We represent rooftop end utility scale solar companies, energy service providers, energy efficiency, demand response and solar storage companies and an investor owned utility. And that membership informs our comments and where we come from on these issues.

I will say that we try to engage with both the California Public Utilities Commissions and the California Energy Commission. And when we do, we often try to poll all our members and see what it is that we have to say about a particular proceeding. And then we usually weigh in once. And we don't have the nimbleness or the flexibility to be able to say, "Oh, TURN said this and reply to comments over here. We agree with what PG&E said in these sets of comments."

And when I first joined the Silicon Valley Leadership Group about four years ago I said, "Is it worth it for us to weigh in, in this way? And I talked to a

number of people including staff at the CPUC. And one staffer at the CPUC said, "Actually, we really appreciate when you weigh in, because you have to stitch together a number of different perspectives. You have to weigh out all these different heterogeneous groups." And that is something that we have to do when we make these decisions, so I hope that you consider our remarks in that light.

That said, there are no easy answers in energy. I'll share our perspective on direct access and community choice aggregation and rooftop solar. But I will say that every problem and every solution in energy is heterogeneous and complex and nuanced. And no one understands that better than the seven of you sitting on this stage, so I really commend you for your service on these Commissions.

Direct access, we supported Senator Hertzberg's bill last year, which would have raised the direct access cap and filled it with renewable energy only for a certainly amount of, I believe it was 4,000 megawatts. We did this in part, because we have direct access customers and folks who want to be direct access customers. We have energy service providers who have been happy to fill that load. But interestingly, we also have customers who are procuring their own 100 percent renewable energy. And they wanted to be able to have a level playing field as they made their commitments to bring in more renewable energy

and want everybody else to have to play by the same rules.

On community choice aggregation, we have not taken a public position either for or against community choice aggregation. So the comments that are offered here are my own. I think that the best way that I can describe what I think about community choice aggregation is that the upside is that it's a blank sheet of paper. And the down side is that it's a blank sheet of paper. What are you going to do when you start with a sort of complete zero and say, "We want to procure energy on behalf of large amounts of customers"?

I understand the appeal. It's greener. It's cheaper. It provides choice. Why not? But I still think that there are downsides. One downside I'll offer is what I call "institutional knowledge.". I worked for a couple of years earlier in my career for the Pacific Gas and Electric Company. And when you work for PG&E, the first person that you meet is Joe who's been working on energy efficiency projects for the last 30 years. And you say, "Joe, we're thinking of doing this particular type of project." And Joe will say, "Oh, that's interesting. We tried that about, I don't know, 20 years ago. And we did it for five years and it kind of worked. And then the CPUC didn't like this part about it. Or we weren't able to work this part about it out. And so we just discontinued it, 15

years ago."

And when you start at a community choice energy company, you don't have 22,000 Joes. PG&E has institutional knowledge across a wide range of issues. And I think that that's something that you lose when you start with that blank sheet of paper.

There are upsides. I think that IOUs have to serve the shareholders. And being able to pile money into more services for your customers and not have to worry about serving your shareholders is a benefit. And of course they can buy greener, cheaper power right now.

But the one issue I will flag, and this is something I know that you'll be thinking about, is that the compensation of investor owned utilities for investments they made previously in renewable energy contracts is a question of fairness. They were required to enter into these contracts and it's not their fault that renewable energy got cheaper and we don't think that they should be left holding the bag.

Rooftop solar, so the Silicon Valley Leadership Group has been solidly in support of promoting rooftop solar for years. I've been here for four years. We've been solidly supportive of them in that time on net energy metering, on residential rate reform discussions, saying it should be a portfolio content category one resource in the

calculation of renewable energy credits, helping permitting streamlining efforts. And quite frankly, it's a low-cost way to reduce greenhouse gas energy throughout California, that individual Californians, both families and businesses can choose as a tangible, personal way to combat the climate crises. And that should not be left out.

That said, I don't think that rooftop solar is the exact same as direct access or retail choice and I'll get into why. First, promotion of rooftop solar and distributed energy resources mitigates the risk that power will be in the hands of a small number of market actors, as it was in the energy crisis in the early 2000's. And so you want to have distributed energy out there to be able to mitigate that risk.

Second, rooftop solar eliminates the need for significant investment in transmission wires. If you've got a lot of folks out there who are generating their own energy on their own roof then you don't have to worry as much about the transmission investments that we will need. Not to say that we don't need transmission investments.

And third, when it is used, solar and storage, an increasing number of people who are putting rooftop solar and then using storage as well, that can be used to balance the Grid. And it can direct clean energy, clean solar electricity where and when it is needed most lowering costs

for utilities and ratepayers. And I will stop there and look forward to your questions later.

MR. CAVANAGH: Thank you, Tim. Mark Byron is here, presenting the views of the Office of the President of the University of California. Mark?

MR. BYRON: Hi there, my name's Mark Byron. I'm the Executive Director of Renewable Energy Programs at the Office of the President of the University of California and thank you for inviting me today. Before I get to my comments, I'd like to give a little background on the University of California. Everybody knows UC. Hopefully, there's a few UC graduates here at the dais and in the room. But I'll give a perspective UC from an energy view.

So UC is 10 campuses, five medical centers, three national laboratories. We're a California institution, obviously. We're committed to the carbon neutrality goal of the state. UC set forth in 2013 that by 2025, we will be carbon neutral in our operations and that is a big lift. It's a big lift, because we are two million megawatt hours energy consumption. We have 800,000 megawatt hours of self generation. We consume a lot of gas, 14 million MMBTUs a year.

We have 1.2 million megawatt hours of energy that we purchase off the Grid. We have many supplies. We have bundled utilities, municipals, WAPA and direct access. So

we see every part of the state in our procurement operation.

We have campuses that have been direct access since the beginning. We are now our own direct access supplier. So my day job is running an ESP. And we are registered at the CPUC as an ESP. We've had Enron, Arizona Public Service Renewable, but we are now our own. We've been into two agreements for long term supply. 200,000 megawatt hours of brand-new solar facilities in Fresno County. We are the scheduling coordinator for those two assets.

So we are a supplier and we are a customer in the California market. So we experience all the wholesale and retail parts of electricity business, as an institution.

And just as a side bar, I heard Strela say policy is wonky. And Timmy said there's no perfect solutions, so I'd just like to add that energy markets are brutal. (Laughter.) Keep that in mind as you make your policy.

So the question posed to the panel was, "What do we want?" And from our perspective what do we want? So at the University of California, we want to achieve our carbon neutrality goals and prove it can be done. We want to be a good state actor. We want access to each campus, so we can be our own supplier and create our own portfolio. We want the ability to reach our emission goals and a

portfolio suitable for UC and its many stakeholders. We have competing goals of carbon neutrality, program costs, state mandates. And we'd like the flexibility to achieve carbon neutrality and goals in a manner that can weave those competing interests. We are carbon neutral focus, but we like headroom above the RPS to create our own supply and our own portfolio.

It concerns us to see layoffs at SunPower, their stock price down, Calpine looking for a buyer. We'd like a robust market of suppliers to create supply options and solutions for us and to bring ideas to us, in addition to our own ideas. We're concerns about cost transfer from IOUs to other connected ratepayers, such as UC stakeholders.

So our vision, you know, where our mission is education, research and public service, so our vision is to show a way and show it can be done as a large institution. So we want a reliable grid. We want open access. We want cost control. We want many green supply options and related suppliers. And we want to be carbon neutral by 2025.

So the other part of the question that I read were the steps. And I was thinking what steps, because that's a big question. And maybe there's partial or full direct access lifting, maybe it could be partial to related

entities, educational institutions. Maybe direct access could be coupled with CCAs. So if you've left the utility for a CCA, there's no reason why an ESP can't be part of that area and then we can be a supplier. Or maybe it can could be for CNI only, or industrial only and you can protect the consumer, because there have been bad events that happened to consumers with direct access.

Also, I'd like the utilities and everybody to keep an eye on the reliability effects of the 50 percent and beyond RPS standard. The ramping in California is spectacular and ramping is when generation arrives and departs. It's 10,000 megawatts I think was the ramp yesterday approximately in maybe an hour or two.

I one time did a study of Latin American electric grids. A large grid there is 800 to 1,000 megawatts and we're ramping 10,000. SMUD is 3,000. The whole CAISO just blows right past that, with all the generation showing up. It's fantastic that we've been reliable so far. But as we keep adding renewable generation, we've got to keep mindful of that. I don't think outages serve anybody's policy purposes.

And I would like to throw out as we go big, I understand the rationale and the reasoning and why it exists a bucket system in renewable energy procurement. I truly get it: state jobs, local infrastructure, tangible

improvements to the California Grid. But as we go big and as we think through these issues, I think we should reconsider the bucket system and where generation is located and what is best for California in total. I gave a presentation yesterday to many campuses that receive direct access service and the presentation in part was raising my rates, or the rates they receive for direct access power, because the duck curve has collapsed so much. And it makes all the renewable energy, specifically the solar we (indiscernible) twice as expensive as we modeled.

So it's weird that the lowering of market prices raises retail rates, but that's what I mean when I'm getting to energy markets are brutal. So with that, I conclude my remarks and I'm glad to answer any questions you have.

MR. CAVANAGH: Thank you, Mark.

We will hear next from a Nora Sheriff, who is representing California Large Energy Consumers Association, which all of us know as CLECA.

MS. SHERIFF: Thank you, Ralph. And thank you Commissioners, good morning. I would like to express my appreciation for having the customer panel go first. I know that's not how the agenda was originally structured. I think having the customer voice first when you're looking at retail choice makes a lot of sense, because oftentimes

the customer voice can get lost. These are hard, complicated questions and important issues. And I really do appreciate being able to offer CLECA's voice and CLECA's perspective.

Now for those of you who don't know CLECA is an energy advocacy organization comprised of large industrial customers, high load factor, high voltage for PG&E and Southern California Edison service territories. Some members take bundled service. Some members take direct access service. Some have onsite generation. All members, however, participate in demand response with some having participated in demand response since the 1980s.

Now our vision, what do we want and what does CLECA want in 2022, I think was the timeframe? Most of the power plants facing once-through cooling retirement, once through-cooling requirements, will have retired. It will have been ten years since SONGS went offline. In about another two-and-a-half years, Diablo Canyon will be retiring. We'll be a lot closer to the 50 percent RPS, perhaps on our way to a 100 percent RPS depending on the Legislature and the goals that are set there. And 2030, the target year for the climate change goals will be fast approaching.

With that context, I expect in 2022 what CLECA wants, our top three equally important priorities will be

about the same as they are now. And the first two are the same as TURNs and that's having customers charged the lowest reasonable cost for reliable electric service. And having access to attractive and reasonable demand side management tools. And for that, for CLECA that means energy efficiency that takes into consideration the individualized operations of industrial sites and demand response and multiplicity of demand response options.

I'd like to drill down a bit into demand response, because it gets a lot less attention usually than energy efficiency and solar PV. And I want to clearly communicate to you, the policy makers and also any members of the Legislature that may be listening why demand response matters and why you should care.

First, the demand response incentives help industrial customers mitigate the impact of the high cost of power here in the state on their cost of production. And looking at the neighboring states' rates, looking at global electricity rates in India and China, California power costs are much, much higher.

And we want to keep industry, or we should want to keep industry here in the state as opposed to leaving the state to meet our ambitious climate goals to avoid carbon emissions leakage. If you want to reduce emissions, then don't just move them out of the state. If you

consider cement, steel, industrial gas, or beer, to name a few key products that the CLECA members make you want those produced in California, not somewhere else. They wouldn't just not get made. And also maintaining manufacturing in the State of California helps, Dr. Weisenmiller, with keeping jobs in California. It's to just the utility industry and the rooftop solar installers. Also manufacturing are good jobs sources.

So if the big goal for the state is fewer emissions, the energy policy has to consider the impact that demand response can have on industrial customers. So what does this mean in the context of retail choice? Well, we think that there should be multiple demand response options from multiple demand response providers. It should include the investor owned utilities, CCAs, direct access providers. Competition should be able to encourage innovation and the multiplicity of options for the customer to choose from.

And so looking at the structure of the retail market, how do we ensure that these three priorities: lowest cost, reliable service and robust energy efficiency and DR options, are embedded? I think you have to have real competition, reopened direct access. And remember CLECA has both bundled members and direct access members. There's got to be a way that we can figure out how to do

this without reliving the energy crisis, and do it fairly.

Competition can keep costs down. It can also go hand-in-hand with reliable service if resource procurement across the load serving entities is balanced to ensure minimized costs, minimized reliability challenges and also minimized carbon. And that reliability can turn on the load serving entities model for procuring resources. You can't just procure short-term resources. You can't just procure solar or mostly solar. There needs to be a balancing of the resource procurement. And this doesn't mean don't do it. This may mean that the procurement practices for the ESPs, the electric service providers, for the community choice aggregators, may need to be regulated a little bit more like the investor owned utilities procurement practices are regulated. Obviously, this would require a statutory change.

So the challenge will be ensuring that even playing field among the load serving entities and their procurement processes while ensuring reliability, affordability and decarbonization. I think that the progress is going to be lumpy and I think that the process is going to be pretty bumpy, but that doesn't mean that we can't do it. It does mean you're going to have to prioritize and their reliability cannot be sacrificed.

As some of you may know, on Wednesday May 3rd at

7:00 p.m. the ISO declared a Stage 1 Emergency Event. There was no flex alert. There was no warning. They went straight to a Stage 1 and as I understand it, it was because there were insufficient operating reserves. They mis-forecasted load by about 2,000 megawatts. Some of the imports didn't show up. Some of the generation they dispatched didn't show up. And they had to respond and they had to respond quickly.

This may happen more in the future as the renewable output grows. And what did they do? The operators called the three investor owned utilities and said, "Give me your demand response. What demand response do you have?" And then five minutes later they called them back and said, "Okay. Give me everything you've got." And they dispatched the demand response. I shouldn't use that term, they didn't dispatch it. It was out of the market. They took the demand response on the load side. They got about 940 megawatts. That number might change as they drill down further, but about 940 megawatts of emergency demand response on May 3rd at 7:00 p.m. and that prevented blackouts.

So to my knowledge most of the CLECA members were part of that 940 megawatts of emergency demand response that dropped the load. CLECA's aggregate annual demand is 450 megawatts about, depending on the economic cycles. And

so we think it's really important to keep that emergency demand response as an option for the entire state. It's critical to keep it for the customers' sake. It helps them with their electric costs. It's critical to keep it for avoiding emissions leakage. You keep that manufacturing in the state by giving them that DR tool to manage. And it's also critical for the reliability of the system grid. That's on one hand.

On the other hand, we can't just rely on emergency demand response to bale the Grid out every time. There's only so much disruption an industrial customer can take, because they want to focus on making their widget.

So in the future, I hope we don't have blackouts or skyrocketing rates or increased carbon. I really do hope that the structure of the retail market allows for full competition, particularly for the industrial customer classes. I like what my colleague from the UC system suggested, reopening DA, looking at ways that we can do that. I think that with real retail choice the ability to choose among distributed generation, CCAs, DAs, ESPs and IOUs, customers can vote with their ratepayer dollars. And under each option, there should be robust DR.

I want to end on one note, a real concern that industrial customers have about the regulatory structure and the regulatory model. And that's risks around data.

Industrial customers operate in competitive markets. And their usage data is commercially sensitive and market sensitive. And particularly how much an industrial customer uses on a particular site, that needs to be maintained and kept as confidential and private data. It's currently subject to the 1515 Rule under the CPUC requirements. And I know that there's some discussion around changing that, so parties can plan for their climate action plans.

However, I've got to emphasize that confidential customer usage data, particularly for industrial customers in competitive markets, needs to be protected and maintained. And I'll look forward to our later discussion. Thank you.

MR. CAVANAGH: Thank you.

Our final panelist is Julien Gervreau who is the Director of Sustainability for Jackson Family Wines. Julien?

MR. GERVREAU: Thank you, good morning. I'm here filling in for Katie Jackson today, who sends her regrets. She could not make it.

My name is Julien Gervreau. I'm the Director of Sustainability for Jackson Family Wires. We're a family-owned wine company based in Santa Rosa. We have 1,500 employees and we currently purchase electricity from CCAs

in Sonoma, Mendocino and Napa Counties primarily because we believe in their charter goals of providing a greener mix of energy while reducing greenhouse gas emissions at a competitive rate. And ultimately reinvesting those ratepayer dollars back into the local economy.

We're also the largest generator of solar electricity in the American wine industry. It pales in comparison to what the UC is doing, but we have six-and-a-half megawatts of onsite renewables installed across nine wineries throughout PG&E service territory. And these arrays were financed in large part through energy efficiency savings via PG&E's Wine Industry Efficiency Solutions Program, which in many ways helped tip the scales for us from a financial perspective to invest in energy efficiency.

So the types of steps that we ultimately view as important to the structure of a future retail electric market, our asks have been couched in my comments below under each priority.

So for us, our first priority is for the CPUC to take a consistent stance with regard to distributed generation rates. Recent changes to rate schedules and time of use periods have artificially devalued the electricity provided by PV assets that we've installed effectively dis-incentivizing us to install more solar.

Most of the solar we've already installed is on the A6 rate schedule, which is no longer available to large commercial customers. And recent changes to NEM 2.0 and the proposed change to move the peak time of use period to later in the day all ultimately compound to make solar less profitable for us moving forward.

As a private company, we make our solar decisions on based on 25-year cash flow projections. So changing time of use periods with just a ten-year grandfather clause has a negative impact on our financial calculus. And ultimately if we can't predict, with some common sense, what our rates are going to look like in the future it makes it difficult for us to invest. All this being said, we're looking at installing an additional five megawatts of onsite solar over the course of the next few years, in support of our own internal sustainability goals to be 50 percent powered by onsite renewables.

So our ask is really to help make this process smoother by protecting the value of each kWh that we generate through onsite renewables.

Our second priority is to really partner to increase the renewables mix on the Grid while keeping electric rates stable and service reliable, which is kind of the holy grail that we're all here to talk about. But essentially for us as a family-owned company, committed to

the long-term stewardship of our lands and our communities, our interest is in supporting California's transition to a carbon-free electric grid in the most cost effective manner possible.

Fortunately, solar and wind power are among the most inexpensive energy sources available today. So it stands to reason that the CPUC should be doing everything it can to support the proliferation of those generation sources.

Looking beyond solar, onsite battery storage is one of the next technology developments that we see as critical to helping expedite the transition to a carbon-free electric future. We've installed currently over four megawatts of batteries across six wineries that we have in California. And we're currently leveraging them to mitigate costly demand spikes. And we also participate in demand-response as well.

Unfortunately, the financial benefit of these batteries is greatly diminished when you factor in our solar arrays, because those solar arrays also eliminate base load for us. So from our perspective a better model would be for us to store excess solar energy that we generate from our solar panels during the day in our batteries. And power our wineries with that excess energy at night, which is not currently feasible from a cost

perspective.

So while this may seem contradictory to our first ask of protecting our solar investments, what we really want is more options that ultimately enable us to explore the best way to integrate solar, storage, and whatever's coming next down the pike.

The duck curve has been referenced here a few times today and it's often been used as an argument against continued investment in solar. But for us we really view it as a lean in opportunity for two reasons. One, as I mentioned it costs less to generate solar electricity today than any other energy industry. So from our standpoint the CPUC should be supporting it continually. And two, battery storage technology, we view it will be an important component to smoothing out the duck curve. But right now, as I mentioned it's just not cost effective, under the current rate system.

So with those two realities in mind, we'd like to push the CPUC to consider a couple of the following what if scenarios. First, being what if the CPUC created optional rates for us to experiment with so test the cost and the benefit of emerging technology, like batteries to pair with solar to help them pencil easier. You know, what if the CPUC made electric vehicle charging free from noon to 5:00 p.m. and kept that decision stable for the next ten years?

That would see us as an organization, we would install more charging stations at our offices and our wineries and a field of dreams scenario, our employees would buy more electric cars. And ultimately, what if the CPUC used the duck curve's excess solar energy to incentivize things like hydrogen generation to fuel carbon-free cars? We have all this excess solar on the Grid, let's lean into it.

But the biggest question mark for us is we really don't know how all these options will be most cost effective until we try them out, until we kick the tires on them, as it were. So really our second ask is for this optional rate class that helps better reflect what the energy generation usage curves look like at specific times of day, so we can kind of help explore these opportunities.

Our third priority is for you all to -- and I think I'm echoing a lot of my colleagues on the panel here -- is to really support a level playing field for PG&E, for CCAs and for ESPs to all compete.

And from our standpoint, we recognize the role that we play, as an employer of choice in supporting our local communities. We ultimately believe that every dollar we invest in our employees will be amplified in strengthening and building community resilience and CCAs are very similar in this way. Because of their community center charters CCAs provide ancillary benefits that

support reinvestment in the local economy and address the needs of local communities that the CCA serves.

For example, Sonoma Clean Power recently negotiated favorable pricing terms for local car dealerships to get a lot of people in Sonoma County into electric vehicles. I understand they're doing it again later this year. And I salute those efforts, because those are things that shareholder organizations don't necessarily reinvest in. So we fully support a marketplace in which competition is fostered and encouraged. But we ultimately advocate that consideration needs to be given to any unforeseen consequences, impacts, that this could have both on PG&E and CCAs.

Some of the things that we're concerned about are scenarios where if we open the market to more direct access, providers they'd cherry pick the most profitable commercial industrial without considering the rest of the ratepayer classes. And will it ultimately lead to a scenario whereby PG&E creates new costs? We all saw the PAM charge that came out this month. And I think you could make an argument that new players into the market create questions about the value that things like that, that those services provide.

And ultimately most importantly, how will all this ultimately impact PG&E's ability to maintain reliable

service at all times for all customers, which is written in the white paper. So we're fine without adding more players in the field, as long as the playing field remains level.

Another thought is could you create a structure whereby PG&E and CCAs are ultimately able to bid on a direct access portfolio in a competitive way with the direct access providers? And if you're going to allow more ESPAs into the marketplace, our standpoint is you need a degree of regulation in place that protects all of us against the destabilization of the customer base, because we've all been down that road before.

Thank you for your time.

MR. CAVANAGH: I think all of my panelists.

So President Picker, Chair Weisenmiller, it's hard for me to imagine you won't have a word or two to say in response.

PRESIDENT PICKER: Well, the first thing I'll just observe is that there is no clear consistent voice from customers as to what they want. They want it all. They want it the way they want it. And they want it now. (Laughter.) So I just want to go back to --

MR. CAVANAGH: I hope you don't think that was my fault, Mr. President.

PRESIDENT PICKER: No, it's in the nature of Californians. So Ms. Cervas and Mr. Hawiger, you didn't

really seem to talk much about the potential for self generation, so phenomenon such as the UC or some of Mr. McRae's customers who seem to be the populist voice of just departing entirely and going their own way. What does that do for some of the programs that you think are important, particularly for the EJ community? What happens when large customers or large numbers of small customers through rooftop solar and through micro grids actually leave the Grid? How do we actually finance those carve outs? How do we actually finance the programs that low-income customers depend on? Where does that come from? How do we do that?

MS. CERVAS: So I have a couple of ideas. With respect to direct access, one of the things that we've been advocating for is a lot more local distributed generation.

What we see, the trend has been historically -- is in renewable energy programs is to focus more on the large scale utility scale model, which I know some of the panelists focus on. For us, because we are really focused on the communities that have not been able to benefit in the renewable energy market, is looking at the communities that are most impacted by fossil fuel and have the most opportunity and the most at stake in them, so which are the environmental justice communities.

So we've long advocated for local distributed generation that is smaller scale, specifically one megawatt

or less. And so with the model that is larger scale that might not penetrate disadvantaged communities at the local level. That said, we again as I mentioned, support models such as community solar or shared solar, which are a little bit larger, but within disadvantaged communities.

To the point around financing, I mean that is a huge debate conversation within the California Environmental Justice Alliance. It's something that we've made a priority to look at, investigate in, and then support policies around looking at financing models specifically for local distributed generation in environmental justice communities.

We've looked at anything from Cap and Trade funds, obviously the Greenhouse Gas Reduction Fund to the EPIC funds at the California Energy Commission. And having a specific percentage of those funds directed towards the Spanish communities and low-income communities. It's a variety of number of things.

So those are some things that we've looked at, but it is a huge debate in our coalition.

MR. CAVANAGH: I think Nora had a comment.

MS. SHERIFF: Thank you. President Picker, I would like to take a stab at offering up a response as well if you're looking at the funds for the CARE, low-income energy efficiency, and energy efficiency funding and

expressing some concern about the loss of ratepayer dollars for those programs. I'd just like to note that for customer generation departing loads for industrial customers, which are larger installations, three megawatts, five megawatts, ten megawatts, fifty megawatts, normally they still pay the public purpose program charge for the load that that's departed, on top of the service that they're still taking.

So the way it's structured right now, for better or worse, if a customer invests its own private capital in say a bottoming cycle combined heat and power installation that uses waste heat recovery to produce energy, they'll not only pay for that customer generation, they'll also still pay a public purpose program charge on that ten megawatts, on that twenty-five megawatts. And that will go to fund the low-income CARE program, low-income energy efficiency and also the energy efficiency programs.

PRESIDENT PICKER: So you're advocating that we lump onto that departing load charge, new future programs for carve-outs in disadvantaged communities?

MS. SHERIFF: Not necessarily, I think it's something that needs to be looked at, in a holistic perspective, right?

I think the rulemaking that is hinted at, at the end of the staff paper, says we're going to look at all of

these issues. And I think departing load charges is one of the critical issues that needs to be looked at in a holistic fashion.

PRESIDENT PICKER: Sorry, I thought I had just solved your problems.

COMMISSIONER GUZMAN ACEVES: What about demand response, how is that any different? You do want the demand response costs to be covered in those shared costs.

MS. SHERIFF: Those are covered through either the distribution rates or the generation rates, not through the public purpose program charge.

COMMISSIONER GUZMAN ACEVES: No, but in terms of what's incorporated into PCIA?

MS. SHERIFF: No, I don't think demand response costs are recovered through the PCIA.

MR. CAVANAGH: Well, Marcel is about to solve this problem.

MR. HAWIGER: Well, I think if I may just drill down a little bit, I think, President Picker, you're asking specifically about some of the public purpose programs. And I tend to agree with Ms. Sheriff that the Public Purpose Program Surcharge is designed to do that. It's a non-bypass able charge.

And I think it's a workable solution, but it creates -- definitely politically it was a huge fight,

especially for net energy metering customers who were exempt from paying, historically from paying the public purpose program. And now under NEM 2.0, they pay about half of it, but they don't pay the other half. And I think that is a problem and it will continue to be a fight.

But I think there is a workable solution to that. I do think there's a separate issue rather than paying for public purpose programs, the issue of maintaining indifference for historical procurement costs, which is what the PCIA is intended to do. It covers basically procurement costs from contracts that utilities sign to serve certain customers. And I think that issue is obviously a huge fight.

In the context of CCAs, I think it will require probably some changes. I think it can be solved, because at least you know sort of the customers who move to the CCA. They were there at some point and they went to the CCA, hopefully they'll stay with the CCA.

I think if you have more direct access, it becomes a hugely more complex equation. Because how do you figure out what customers you bought for when the customer might be a CCA customer this year, then move to an ESP, then move back to a CCA, or they were a utility customer and then CCA comes in. But then they move to an ESP provider. And then just the tracking of who's customers

were included in load forecast in a particular year becomes enormously more complicated.

But that's a different issue, the PCIA issue from the public purpose program charge to pay for public purpose programs. Though that will continue to be an issue and I think it's part of the issue of net energy metering.

And for in terms specifically rooftop solar, TURN does believe that the present system is not sustainable. It's not fair to customers, because different customers get different subsidies depending on how much they generate, how much they consume. Because they get paid for their solar exports if they're residential customers, depending on where they are in the tiers.

Later it'll be TOU. If you're a CARE customer you get to pay less, because your retail rate is less, because your retail rate is less, so you get less subsidy from net energy metering and ultimately it's a subsidy from those who don't have solar to those who do. And I'm happy to talk more about that, but I don't think it's a sustainable system the way it is.

PRESIDENT PICKER: So --

COMMISSIONER PETERMAN: Well, go ahead.

PRESIDENT PICKER: I was going to move to a different question, but if this is --

COMMISSIONER PETERMAN: Well, it's kind of

related to this question.

CHAIRMAN WEISENMILLER: Yeah, actually I have one on this question too, so why don't you go forward, Carla?

COMMISSIONER PETERMAN: I think the other aspect of self-generation that I'd appreciate the perspective of Mr. Hawiger and Ms. Cervas on, is how do you do liability and integration? So we've moved from this paradigm where our generation resources also provided reliability in their constant production. And so if you move to a situation where you have primarily distributed generation and local communities, are you envisioning then that those renewables are integrated with local resources as well, such as energy storage? Or are you envisioning that there's a roll for utility of third-party entity or some type of market to be providing broader reliability services that are not localized to support that local generation?

PRESIDENT PICKER: And I'll have an add-on question. Because I was --

COMMISSIONER PETERMAN: Because that's where you were going right?

PRESIDENT PICKER: Yeah. Well, really bluntly what are you doing between 9:00 a.m. and 11:00 a.m. on August 21st? Particularly for those who are self-reliant, self providers, Jackson Winery and PUC?

COMMISSIONER PETERMAN: That's the solar eclipse

for anyone who's not following that wonkyness.

MR. BYRON: So what are you doing between 9:00 a.m and 11:00 am.?

MR. BYRON: What, 9:00 a.m. to 11:00, you mean during the ramping period?

PRESIDENT PICKER: Solar eclipse, Northern California. You're going to lose 75 percent of your solar capacity, Southern California, 62 percent.

MR. BYRON: That's right. Well, we schedule our energy out of the California Independent System Operator, so the Grid balances the load.

PRESIDENT PICKER: Ah, okay.

MR. BYRON: We purchase research adequacy to ensure the reliability system. We purchase in excess of our expected demand, based on a 15 percent reserve requirement. And we also buy flexing ramp to ensure that we're part of the solution.

PRESIDENT PICKER: You're going to have a heavy morning ramp too.

MR. BYRON: And we're going to have a super-heavy morning ramp up.

COMMISSIONER PETERMAN: I'll just note that I think this one of the issues that's different from the first time, when we thought about retail choice, which is the intermittency of the generation. And what that means

in terms if there's a market solution for that, what is the competitive market look like, to for example deliver the emergency response that we talked about on May 3rd. And that's what I'm trying to marry this idea of a -- and really understand the vision that CEJA has in terms of distributed energy and how that fits into a broader reliability framework.

MS. CERVAS: Yeah, no I mean I think that it is a mid-term to long-term model, obviously we're not going to get there this year, next year, whenever. But we do support -- I mean, one of the things that we're looking at in a couple of the different programs and policies that have been passed most recently are marrying solar and storage. And so we do support storage.

We have looked a lot at the micro grid model. But in the micro grid model, and any solar plus storage model and how that concretely benefits or gets into disadvantaged communities, there are a couple of micro grids. For example, in L.A. where I'm based, there's -- but what we look at are, are those systems getting into disadvantaged communities and how is it supporting both the reliability and really our approach has been more to look at the benefits in the system.

COMMISSIONER PETERMAN: And I'll just note to that point, for those who aren't aware, in a recent energy

storage decision the Commission adopted we directed Edison to convene a working group on community storage with particular focus on disadvantaged communities, both pretty early on in that concept I would say.

MR. HAWIGER: If I can chime in?

CHAIRMAN WEISENMILLER: No, let me start on something to try to, at least -- it seemed like one of these, Marcel, you were making direct access out of, "Oh, my god. The industrials are going to leave."

And I think President Picker's premise going into this was, "Look the procurement function at this point is not a utility function." If UC wants to install solar everywhere, that in terms of the conception impact of that or energy efficiency or whatever, I mean direct access is a tool for them. But it's not the only way that they can substantially reduce their utility service.

So again that's the reality at this point, is procurement options much broader than just it's either utility or direct access. And so that gets to your point. It's like what's the net in difference (phonetic) when they leave? But again you have to be thinking about this is a new world, but the other part of that new world is the provider of last resort, which we haven't talked about yet. But again the utilities are sort of semi-social animals that have been regulated long enough. They have no problem

as the provider of last resort. And there are regulatory mechanisms to make sure that all customers are taken care of.

But a lot of these new entrants don't have those constraints or those obligations, so how do we deal with that?

MR. HAWIGER: Well, I understand they have different options. But presumably we're talking about the options they have for self generation tend to be clean, renewable options, either through solar or some of the other programs that have been partly subsidized by this Self Generation Incentive Program or whatever.

Assuming we're not looking for a future where lots of customers build diesel fired self generators, but putting that aside I don't see that as a problem. Because essentially what we're looking at is how do we plan to ensure that the energy of whatever entity is purchasing in the wholesale market for resale to customers that, that energy is 50 percent or 60 percent and eventually 80 percent or more renewable and clean energy.

Now, if there is self generation, lots of self generation, the remaining portion becomes smaller and smaller. That's fine as long as we can figure out how to ensure that whether it's the utilities or LSEs actually construct new renewable generation that's clean that will

meet the net load, and I mean renewable and net of self generation. And I just don't think they can do that. You can do that planning function or at least right now, we haven't figured out who can do that planning function if you re-open retail competition. And I think it's just going to be a mess.

CHAIRMAN WEISENMILLER: Well, but again it's any number of Tim's people have just said they're going 100 percent renewable now. And they may choose to do it with a large scale. They may deal with it onsite. But it's happening really fast right now with direct access.

MR. HAWIGER: Then I think we have to ask what does that mean when you say they're going to do 100 percent renewable. It's the same question we've had with some of the early CCA programs, it's the same question we had with retail choice the first time. If you're not self generating are you buying renewable energy credits from Wyoming Wind, from Oregon Wind, from facilities that have existing contracts and would generate anyway?

But they're very happy to do the resource shuffling. They're happy to get a premium schedule. They say that they're selling power to you and buy dirty system power to replace the energy under the contracts they have. Is that what we want? Do we want large hydro and wind from the northwest that then we pay a premium for. And say we

get it, it's clean. But there's zero change in renewable energy when you look at the integrated energy system.

That's the central issue is are we going to really create new renewable energy across the entire west, or are we just shuffling resources by allowing for contracting that meets vague clean energy goals, but has not enough specificity and accountability that we can really say anything is changing for greenhouse gas reductions in this area.

MR. CAVANAGH: Julien?

MR. GERVREAU: Yeah, I'd like to just comment on that because we're -- I'll give you a real world example of where we are with that exact issue.

We're kind of exploring how we can achieve our renewable energy goals and presently they're set at 50 percent. But just in looking at our energy consumption, I know that it would take about 15 megawatts of solar generation for us to be able to offset 100 percent of our energy usage. And we actually have land that is not dedicated to vineyards that would actually be perfect for that. And if you look at it, our challenge is how do you be able to take the land that we own, the generation that we need, the space that we potentially have. But then look at that in a way that will work for us from a cost standpoint?

I mean right now, the options are a feed and tariff program where we don't even own the RECs so we can claim to be a host of the program. And generate at wholesale rates which is not going to really excite my CFO. So I mean just looking at, I mean how do we all work together to figure that out, because we're essentially -- we have the space, we have the desire, we have the will. But our other option is to do some sort of a virtual PPA with some wind farm somewhere in, not California. So how does that --

PRESIDENT PICKER: Well, I'm not opposed to all those things. But aren't you, in effect, still just arbitraging the existing dominant utility market system?

MR. GERVREAU: I mean this particular area is near a major city that has a ton of demand.

PRESIDENT PICKER: Okay. But you're still using the utility infrastructure to set a market that you can sell to them to resell.

MR. GERVREAU: Under the current system, yes.

RESIDENT PICKER: Okay.

MR. GERVREAU: Yeah.

MR. CAVANAGH: Mark, did you have something?

MR. BYRON: Yeah. There was an interesting statement I heard, just to give a different perspective. The duck curve has a interesting environmental impact.

MR. CAVANAGH: Oh, hit your microphone.

MR. BYRON: Oh, sorry. Is that better? Yeah, so the duck curve from my perspective has a interesting statement if you look at it. It kind of means the marginal environmental benefit at that point in time is zero. Meaning if you add another solar plant there's going to be no change in the CO2 emissions, because you're decking, you're basically reducing CO2.

So there is a big criticism buying renewable energy from out-of-state and a big criticism of renewable energy credits. Renewable energy credits are evidence of the production that's tracked in WREGIS. It's you buy it long-term or short-term, but a project, a wind project from out of state in a state still consumes coal, that still consumes lignite, basically has 2,200 pounds of CO2 per megawatt hour marginal benefit. So it might reveal itself in the form of a REC to the buyer, but that REC probably had a better environmental benefit than a additional solar project in California in April.

MR. HAWIGER: So if I may just? I think the REC has value only if it would not have been produced, but for your contract and that's always the central issue. Is it actually additional renewable energy?

MR. BYRON: But you can't abandon the existing fleet of renewable generation. And the way they get

additional revenues is through things like resource adequacy for liability and RECS for a renewable attribute.

MR. HAWIGER: Well, why don't we just --

PRESIDENT PICKER: Why don't we just assume that there's a disagreement about the value of the RECS in the system and see if there are other questions.

MR. BYRON: Yes.

COMMISSIONER PETERMAN: I was ready to jump in about that.

MR. HAWIGER: Could I just chime back in a little bit about rooftop solar and this local reliability issue, if that --

COMMISSIONER PETERMAN: Yeah

MR. HAWIGER: One thing I want to say is from the big picture perspective TURN looks at net energy metering and self generation, lots of these programs including CARE as subsidy programs. And we try to take a sort of public interest perspective. You know, CARE is a subsidy for individuals, because it allows them to get affordable energy. And they face huge risks of disconnection, otherwise and no electricity service.

Net energy metering, energy efficiency, those are all various subsidies that go to individual customers who get individual benefits through bill reductions. We tend to look at those and think, "Well, is there value to it?

Is there a social value to it? Are you actually reducing energy use or generating renewable energy at a price that is better than having the utilities build something or buy something?

And I think this issue that Mr. Gervreau brings up about solar is just that. He would like to get better subsidies for their onsite solar and then they're producing clean energy. And I understand that. And they're getting direct benefits from it. That's good.

But then my question is well, if we're going to give greater subsidies through redesigning net energy metering or some other program, is it really worth to us in terms of achieving clean energy goals? Why should we do that instead of having the utilities contract for utility scale solar or even providing different incentives for everyone else, under net energy metering.

So that's how we look at it in the big picture. And I think net energy metering is a big question. But in terms of the reliability issue I would just say I think your original question -- I'm going to punt on the eclipse, because god knows, I'm assuming we know that. You know, there's enough foreknowledge and we have enough excess capacity. I haven't looked at the numbers at all, but I'm assuming even if we have to ramp up some of our gas-fired generation for two hours or four hours in the year, so be

it.

But the local, I'm not -- then there's also the big problems of solar in terms of the ramp and over generation. Again, right now there's no shortage of flexible capacity for several years down the line. So I'm not sure whether the local reliability question was something different from those system impacts. And we certainly don't see any impacts right now from rooftop solar on local reliability, and in terms of either voltage or backflow through the substations. And that's certainly an issue that I know the Commission is dealing with in the distributed resources proceeding and with Grid modernization. And we hope to be a part of that solution.

COMMISSIONER GUZMAN ACEVES: Well, can I follow up on that, because I think potentially Commissioner Peterman was heading towards -- we have this question before us a lot lately about cleaning up the local reliability. And how much of that, as you were alluding to in your earlier examples of NEM -- you know, the public purpose programs, NEM, DR, to a certain level those are all subsidized with the entire base of the utility rate base.

And when we look at reliability and how we're currently meeting those needs, and we're going into a place where all these different providers are meeting their own reliability needs to direct requirements to the ISO, what

role is there in a shared cost to getting to a clean RA scenario? Is that possible with this future of very different providers in one region? How do we do that kind of planning coordination?

And, Nora, you kind of talked about a little bit of a vision of this of how you continue to require DR. Do you require it as a shared base as you would a public purpose program or do you require it from each individual CCA IOU? That planning looks really cumbersome.

MS. SHERIFF: I think it would depend on the type of DR. And that's why I was alluding to meeting a multiplicity of demand response options. I think there's one level of the system emergency DR. And that's a model that the State of California is very familiar with, has had since the 1980s.

I think there are new innovative models coming out of the market. The ISO wholesale market for proxy demand response resources that could be provided by a lot of different demand response providers be it a CCA contracting with the third party DR, be it a third party aggregator going through the investor owned utility, be it an energy service provider that is also using that third-party aggregator.

I think what we need to do is we need to be open to all of these new types of demand response. And I would

actually take some exception to the concept that demand response is subsidized, because it does through the cost effectiveness test that the Commissions established. And so most of the programs are cost effective. And if you look at it on a portfolio basis, the programs that are more cost effective bring the programs that are less cost effective, up to that cost effectiveness standard.

COMMISSIONER GUZMAN ACEVES: Yeah. No, I agree they're cost effectively, absolutely. But you're basing it on the bigger -- your cost effectiveness test is of shared amongst a lot of customers --

MS. SHERIFF: Right.

COMMISSIONER GUZMAN ACEVES: -- and if we're going to parse those out, maybe a certain investment in like a large industrial user cost effectiveness is no longer there.

MS. SHERIFF: Well, and again that's where I was thinking we would go to different strata of demand response programs. What do you need for the entire system for reliability might be different from what you need to arbitrage on price in the day ahead market, so different types of demand response programs might have different funding sources.

MR. HAWIGER: If I may just add, at the moment the reliability demand response that Ms. Sheriff is talking

about is funded -- if any customer can participate then it's funded through distribution rates. Everybody pays for it. There's no problem. So and in terms of it's a system reliability issue, not so much like a local circuit reliability issue at all, but I would just add that I think we have some different perspective on demand response. TURN has always supported some of the emergency demand response. And the question is how much do we pay for it?

I think Ms. Sheriff is right. It's been around for a long time and it's basically been at certain times of economic development rates for large customers who get paid a lot of money, so that they can drop load. Their load drop is great. It's valuable. I like it.

But the question is how do we value it? How do we pay for it? And we've promoted going through a more competitive market for that. That is an area. Energy efficiency demand response, those are areas where there's a lot of actors. Where those parties can aggregate customers, sign up customers, and provide demand response services. But the question of why do we have an interruptible rate? We have an interruptible rate, because energy by itself is not that valuable if you drop it only a few hours a week. So you've got to have some kind of capacity payment for demand response.

And an interruptible rate is one way of doing it.

Having where the Commission has now piloting the demand response auction mechanism, which is another method where third parties can aggregate even interruptible customers that we haven't gone there yet and bid them in to get capacity payments. And bid them into wholesale market and perhaps reduce costs that way.

CHAIRMAN WEISENMILLER: So I was going to cede my next question to Ralph, seeing as he's been so patient.

MR. CAVANAGH: Well, I will not accept that invitation if there's one other Commissioner who has a question. So let me just check, yes?

COMMISSIONER MCALLISTER: I have a very quick follow up on this demand response discussion. I mean personally, I think demand response has to be a big part of the solution or we're going to overinvest in other things that are heavy hardware costs. You know, the costs of battery storage are going to come down. But it's not low yet. And demand response, all the technology is there to do it. But we have this kind of fragmented marketplace. We have a lot of different kinds of demand response. And some of it's probably necessary from a technical perspective.

But I guess how do we create markets for demand response, so that demand response 2.0 and 3.0 aggregators, not the 1.0 that is calling off a telephone and flipping

switches, which is necessary. How do we incorporate those into the market in a way that they can actually make a go of it and make some money?

Because I hear from these providers that they have all this great technology that they're working with customers behind the meter. They could provide automated daily very effective demand response to the Grid, but there are no signals that let them create cash flow from that. So I guess my question is do you have thoughts, any of you have thoughts, on how that marketplace can be specified such that it is viable?

MR. CAVANAGH: Nora?

MS. SHERIFF: Thank you. I have one thought that I'd like to offer. And this is something that CLECA has suggested a couple of times in a couple of different proceedings. And that is to try to incent load, not just to drop, but also to increase.

I think right now the difficulty is the lack of a price signal. If we could get somehow through an optional dynamic rate overlay, and say just for the generation component of the rate, not the wires component. But say just for the generation component of the rate let those customers who can increase their load, and help soak up some of the excess renewable generation when wholesale market prices are low or even negative, I think that would

be a great way to turn on that market. And allow customers to really access the benefit, allow customers to lean into the duck curve and help soak up some of the excess renewable generation. But that's a different type of demand response than we've ever had before.

And I know that smart people are working very hard on it, at the ISO and at the Commission. But I think that should be an area of real focus, demand response that ramps up load, not just the traditional demand response that ramps down. So that's one rate design option, I think, that we could look at.

I think there's a lot of different technology aggregators out there. And there are different ways that you can try to platform that to enable equal access for all the different technologies.

MR. CAVANAGH: Marcel?

MR. HAWIGER: Yeah, I would add that right now, the utilities spend about roughly 100, 120 million a year on demand response. About a third of that is for technology incentives. For large customers to put in auto demand response technologies, etcetera, so we're getting some of that capacity in there. There's an inherent tension. It's hard to pay a lot of money for demand response right now, in an era of large amount of excess capacity. So there's a certain amount of tension there

that will not go away, because the promise of demand response is we're counting on it in our long-term planning. And so presumably, 15 years down the line, 20 years down the line, you'll have less generation, because you're counting on demand response. And then prices will go up and perhaps we'll be paying them more.

But I want to offer one other sort of thought. I wonder if can you put my presentation back up please, I'm sorry. I just wanted to show you two slides as just something to think about in this area, with respect to residential customers. Because there's always been a hope that residential customers, especially with air conditioning can provide that demand response. And so two slides -- and however in its current application, Edison for example is actually saying, "We're really worried about using." In the future, in theory, if you rely on demand response more you're going to have to call it more. You're going to call it a lot more hours, because you're going to actually be using it instead of peaker plants.

But Edison is saying right now in their Summer Discount Program, which is their air conditioner cycling program -- this is from their testimony and their application they just filed the beginning of this year. They say that they've seen attrition from residential customers, because they've been calling the program rather

than 0 hours or 20 hours, they're calling it 30 to 35 hours in 2014-2015.

Now, to me that's still a very low number of hours. I don't know if it's really true that it's because of this that customers have been dropping off or if there are other reasons. But Edison seems to be saying -- and Edison's program gets dispatched for two or four hours and most of the customers have signed up for 100 percent cycling, which seems a little extreme to me. I've never really supported the 100 percent cycling, but they pay them more so they sign up more and now they're losing them. But their notion seems to be that we need to call customers for four hours at 100 percent or there's no value.

Now, I'm on the Ohm Connect Program. Ohm Connect is one of the third parties that is aggregating residential and non-residential load and getting contracts through the DR, distributed resources auction mechanism process. I get messages twice a week, pretty much at least, that it's an ohm hour tonight, since February.

They seem to have a very different model. Now it's all one hour and it's happens all the time. I don't know, which one is right? Is Edison right in terms of the value and how often you should call customers? Or is Ohm Connect right that you can call them a lot, but it's only for one hour. So that's something that I think hopefully

the Commission will be reviewing and Energy Commission will be analyzing some of those data. There's going to be lots of data that will be coming from the DRM Program from the third parties about their bids and their dispatching the market and I think that should be --

CHAIRMAN WEISENMILLER: Okay, why don't you wrap up? Go, Ralph.

MR. CAVANAGH: Yes, so Chair Weisenmiller, President Picker, we've reached the end of the panel. And I believe the schedule now calls for a break until 11:00.

I will just point out my personal gratification as the moderator of this panel, that although none of the panelists was prompted in any sense obviously the aura of the Byron Sher Auditorium caused all of them to put emphasis on the environmental performance in general and energy efficiency in particular. I salute them for doing so.

And we look forward to the remainder of the panel.

PRESIDENT PICKER: Thank you all. And we're going to take a 15 minute break and then start promptly at 11:00. (Applause.)

(Off the record at 10:46 a.m.)

(On the record at 11:08 a.m.)

MS. TIERNEY: I'm going to take advantage of this

moment when people are taking their desks. I'm Sue Tierney, from Analysis Group and I am so privileged to have a chance to spend this day and learn from what's going on in California. This is a wonderful panel on customer choice and direct access and community aggregation from the supplier point of view.

And we have four people, who come from different perspectives in the industry. And we're going to take them, in using Ralph's great suggestion, we're going to take them in order here. The first speaker is Geof Syphers, who is the Chief Executive Officer of Sonoma Clean Energy.

MR. SYPHERS: Good morning, and I want to thank the two Commissions and also the morning panel for teeing things up so well. I really appreciate you giving this topic the attention it deserves. I think the rapid growth of community choice is clearly an opportunity to make improvements to California's energy system. It obviously is the shakeup in a way that is one of the reasons why we're here.

And I think as many as have hinted at all morning, and in prior conversations people have outright said here, it may be time for the investor owned utilities to begin a gradual and graceful exit from selling retail electric generation. I think there's been a mismatch since

decoupling. I think having monopolies in markets that have a significant commodity component has really not served ratepayers well. And so I think we have this opportunity now to think about the bigger picture, about what our future looks like.

I want to thank PG&E too for starting a dialogue with Sonoma Clean Power on fundamental market questions. And I expect that we will be able to put forward a distinct proposal on exit fees that's different from the PAM, as the utilities noted in the recent application.

Community choice programs access the full breadth of energy providers and have significantly stepped up competition in California. And we actually don't mind that a handful of electric suppliers have grumbled about us. It just means that their margins are getting smaller and the ratepayers are benefiting. And so as I think most of you, we've got well over a billion dollars of construction going on in California with community choice programs now. It's probably nearing about two billion at this point, because of all the new projects that have been going on. Enough that some staff at the ISO have raised concerns that we may be building renewables too fast. So we have some fascinating questions ahead of us about what to do about that. And really where are we now?

You know, as we bring competition, we're

protecting the public against direct access cherry picking of large commercial customers, we do ensure that all residential and particularly low-income residential have access to the benefits of a competitive market. And that's an important distinction in community choice.

We all recognize that California's greenhouse gas goals are no longer primarily dependent on building new renewable sources. And that's a new era. President Picker, you've pointed this out, I think consistently at every presentation I've ever seen you talk at.

The new paradigm of fuel shifting, load management, demand response, storage, electrification of transportation, it all recognizes that turning down and turning off fossil sources is the thing that matters, the subtraction-ality of fossil. Addition-ality of renewables is no longer the point. It's still a tool that we have. And I'm not saying we don't want to build renewables. But it's a tool. It's not the goal. And that really calls for a close look, all of those different kinds of activities, at who can deliver the results.

So the current paradigm assumes that it's easier to command the big three investor utilities to build infrastructure and implement customer programs, but I would say that's worth reconsidering. Investor owned utilities weighted average cost of capital is a full percentage point

higher than public agencies and public utilities.

Investor owned utilities have shareholders, who are conflicted about measures that reduce capital investment, for example, by targeting low cost places for electric vehicle charging. And two out of three of the big utilities are directly conflicted about reducing gas sales. And so we need market actors that can step in and fill some of those voids.

California really needs community choices programs to run pilots. We can do so very quickly. And one of the things that we're starting to do is create demand response master aggregation agreements in our clean grid standards that allow us to have any number of demand response providers underneath them. And what that does is it protects the customer against poaching and hanging onto customers that don't want to be in programs or want to make switches.

Right now, one of the big problems in demand response is some companies have hung on to customers, made it difficult for them to leave the program. And so the public is benefiting by having that kind of oversight.

Sonoma Clean Power has got an electric vehicle bulk discount program, as was mentioned. Lancaster Choice Energy has just bought 85 electric buses. These kinds of things are happening, because community choice is

responsive to local needs, like MCE's LIFT program, the Low-income Family and Tenants Program. And it's really accessible public oversight that we're really looking for in one of those areas where community choice can help.

So how to get the bigger opportunity for community choice I would argue is solving the exit fees. So one of the key topics in front of us is getting the exit fees right. And I think we all can concur that there's some problems with how they're done now.

There are four key principles I want to offer now on exit fees. And the first is transparency. Whatever we do, we need to make sure that all the existing contracts that are going to feed into these fees and all the portfolio information about them is auditable by individuals that aren't directly in the market. And that means staff at community choice programs that sign non-disclosures and don't do trading. It needs to be auditable.

The second is there is a duty to mitigate costs. What's been put forward so far to the CPUC on the PAM proposal, the Portfolio Allocation Method, implies essentially there's not duty to minimize costs feeding into the fee. And that doesn't make sense. In any sort of breakup the judge would order that both parties have a responsibility. And in this case that responsibility of

mitigating costs is clear. There's a need for certainty and in fact that's a need for all parties: ratepayers, the IOUs, the community choice programs. And that can't be achieved with a floating year-by-year process such as the current PCIA, or the proposed PAM. We really need increased certainty, increased ability to forecast, we want to minimize the risk of rate shock.

And then finally and maybe most importantly we have to stop double procurement. This is -- is there a slide that you've got up? So I want to point out in the middle of this slide the PCIA was double procurement. The dollars on the left are showing dollars per megawatt hour, over the next several years. And there's a couple of scenarios there.

This is just the current PCIA. This is the way things are now. When an investor owned utility hangs on to all the contracts that they no longer need, because a CCA is formed and removed some of the customers, then the electric market becomes doubly exposed to market risk. Because you have two complete entities with two complete portfolios of energy. And in that dashed line, if you exercise all the RPS contract extension options, you can see that the fee is higher, over time. If you don't exercise it, it drops off sooner.

If you go to single procurement, that bottom

line, where the utilities in 2014 would have taken up to 12 months to sell based on the forward price curves at that time, all of the contracts for Sonoma Clean Power in our case, the fee actually would have been massively lower. That represents hundreds of millions of dollars over time, the difference between those two lines.

And that was our expectation. When we formed, the expectation was the utilities would dispose of their long contracts. We would be a potential buyer of those contracts, but the market would as well and our customers would cover the difference there. What's disturbing is the proposal that's before the Commission now is called PAM and it's that top line. And that's net of assignment of RECS.

And so the real number is actually close to $60 per megawatt hour for 2017 and that's a disturbing kind of number, because every single one of those lines represents indifference. We're not arguing about indifference. We're arguing about behavior. What is the responsibility of each party to minimize costs, to take actions to protect ratepayers.

So I think if a utility chooses to double procure generation resources, by holding onto contracts it doesn't need, then the costs and risks of that obviously need to be borne by the utility. And maybe by its shareholders, because that doesn't appear to follow policy at this point.

And community choice programs do have a legal obligation to buy for our customers.

There's too much energy procured in California. And as more CCAs emerge, if this practice continues we're going to have even more and more energy procured. And I think the argument for this, at least what I heard informally, is that the utilities need to be there in case the CCA fails. And I would argue that's just a flat wrong assumption. We don't do that for any other aspect of the electricity market and the power sources that community choice programs have don't disappear if the CCA fails. They continue to produce. Their owners actually continue to sell into the market.

So it's my belief that competition is best served when a responsible public agency oversees the bidding and the provision of electricity by a broadly diverse market of electric suppliers. And that's exactly what community choice does. So I look forward to resolving the exit fee issues, so we can unlock the potential of CCA further. Thank you.

MS. TIERNEY: You set a high bar, Geof. You got in on the wire. That was great.

And Ann Hoskins is the Chief Policy Officer of SunRun.

MS. HOSKINS: Thank you, Sue, and thank you very

much President Picker and Chair Weisenmiller and all the Commissioners. It's a real pleasure to be here. I just want to touch on a couple of quick points and then hope we can get into some discussion.

One question really is why am I on this panel? SunRun asked ourselves that, because we're not a direct access provider. And we're really different than a CCA. Our customers are generators. And they're consumers. And in our view, they're providing really significant services to the Grid. And there's opportunities. We're so excited because we're on the cusp now of them being able to provide much greater opportunities to some of the challenges that the state is facing.

President Picker, you asked a really interesting question about the two-hour solar eclipse. And the first thing that came to my mind is, "Wow, it's really too bad that solar plus storage is really just rolling out now." Because our solar plus storage, our BrightBox offering, if that were in place across the state in a much broader way, people would be able to charge the night before and would be able to cover that two-hour period. We have that technology.

And the message I'd most like to leave with you today is that we're still going through a lot of regulatory transformation with distributed solar. There were some

comments earlier that I'll address about that, but I don't think this is the time to add another level of regulatory uncertainty on distributed solar. Particularly as we're working to try to combine it with storage and become an offerer of grid services.

Right now, as you are well aware, we're right in the middle of really implementing NEM 2.0. It put into place a fairly complicated system, where our customers are now slowly over -- as different utility rate cases are being completed -- are facing different types of time of use rates. And we have a really important obligation to make sure that our customers understand that. That our sales people understand it and that we're able to provide a product that will provide value to customers.

And so our understanding going into this, is we have a little bit more time before we're going to think about the next level of reform on that. And I would just ask you to think about that as I understand you're trying to look at the big picture here. And at one level that's really important. But at the same time, I think we heard from the representative from Jackson Winery, just how important it is to have some certainty. And it's certainly one of the key principles of regulation right, is to try to have some level of certainty for customers and also for providers.

So that's one of the messages I just wanted to share with you is that we do have some concern about having another proceeding. We obviously are involved in the rate cases that are setting the TOU rates. We're involved in the distribution planning proceedings, which are critically important I think for understanding where our services are being provided. As well as where there's the greatest benefit of distributed generation. And I think adding another one on top of it for us may be hard for us to participate in the productive way that we would otherwise want to.

A couple of things I just want to touch on, almost in response or just to, I guess step back. Because I take it as a given that distributed solar is really consistent of the policies of California. And just as a step back I myself just out here in September. I served on the Maryland Public Service Commission and we always looked to California as a real leader. And California is the leader and in fact so much so, that that's how the distributed solar industry grew.

We have over, I think about half, close to at least half of our customers are in California. And so this is an incredibly important state in setting solar policy and in setting policies that supports a reduction of greenhouse gases. And we view our customers as on the

front lines of that. Our customers tend to be very mission driven, as do our employees. And we want to continue to help support that and to work with the Commission and other stakeholders to try to do it as efficiently and as effectively as possible.

And as I mentioned, the really exciting development is now we're starting to have the opportunity to do solar plus storage. For us, it started in Hawaii and we've sold over 1,000 storage units. And now we're offering, in California, we've applied under the SGIP Program, so we're participating in that. We're trying to participate in demand response. We see ourselves as this technology rolls out as being part of the solution for that more reliable grid to be able to eventually hopefully bid into CAISO. So we're trying to participate there as well.

That this is something now that it's not just the issue of our customers' self generating, which we think is valuable, because they're not polluting and their reducing load. But also offering something back to the Grid.

And one of the issues that is a concern to us is that while we fully understand the need for grid modernization -- I certainly do having been a formal regulator in the importance of reliability. We do have a concern of some of the proposals that utilities are putting forth right now, of such great magnitude, billions of

dollars for grid modernization when we feel like, "Wait a second. We have this technology and we think with this technology we will be able to be part of that solution."

And there's a really interesting study that Berkeley Labs, LBNL, put out in January, and if you haven't seen it I hope you will look at it, which tries to put this in context. Because believe me I love California, because California likes solar and we know we're welcome here. There are some states where it's much more -- where we'd have a more difficult time.

And I think the issue here though is when we go out to some of these other states and we hear about oh, there's all these subsidies that are thrown around or cross utilization. LBNL puts it in context, even if you had 10 percent penetration of distributed solar, it is miniscule the impact on the rates as what we are going to be facing with the huge grid modernization proposals that are coming out of across the country.

And so what I think is we have an opportunity right now with this technology as long as the Commission gives us a little more runway, as was initially planned I think with NEM 2.0, to continue to have solar be accessible, expand accessibility to more folks, and also be there as the anchor to support grid services.

And finally, I just wanted to touch on one of the

issues that the Environmental Justice representative raised, because I think that's also really critical. And it's something that I personally, and the company is very committed to try to find a way to expand access to all renewables but certainly to distributed energy.

And we had been working, recently entered an arrangement with GRID Alternatives trying to make use of some of the SASH funds that the California has put forward. Trying to find ways that we can work with other organizations both developing affordable, distributed solar. Also in hiring from more diverse communities through groups like the Greenling Institute trying to find ways that we really can expand access.

And one of the things I would ask you think about as we consider additional potential charges that could come out of these proceedings, is that those charges make it less accessible.

And I think that somebody mentioned earlier Mr. Sherman Upercomm, (phonetic) who I think was one of my teachers back in college. And you know, I mean think about the economics of this, you know when we keep putting all these assessments on the user, on the use, it does affect behavior. And it affects the economics of how this works. And that is really the challenge of making this accessible. And I think the opportunity to have funds like SASH like

some of the other incentives, figuring out ways to help us, so that we can raise the capital to provide leases on more affordably with groups like GRID Alternatives, we have to keep in mind that this needs to have a value proposition for the customer.

So that I just want to again thank you for your time. I really want to look forward to talking with you. As I said, I'm not sure that distributed solar really belongs here, but I fully appreciate the opportunity to speak with you today. Thanks.

MS. TIERNEY: Thank you, Anne.

Our next speaker is Ron Perry, from Commercial Energy, where he is the CEO.

MR. PERRY: Thank you, President Picker and Commissioners for allowing employee-owned Commercial Energy to represent direct access providers in the state. As an active participant in natural gas and power markets in California for the last decade, and celebrating our 20th anniversary this month, we have three goals today.

First, describe the unique competitive advantages of direct access providers versus compared to utilities and CCAs. Second, apply the lessons learned from natural gas direct access over the last dozen years in California to the power market. And third, suggest regulatory and legislative changes to help decarbonize, diversify and

directly serve customers.

First, what are the unique advantages of ESPs? Well, ESPs are at the heart of entrepreneurship. We exist to identify inefficiencies in the market and develop products or services to fulfill that unmet need or lower the cost of a known one. My team has a relentless focus on bringing innovation and market transparency to over 3,000 current clients in California.

Here's how a direct access supplier works. Today, think of us not as energy supplier companies, but service companies, managing supply, demand and delivery costs of a business. At commercial, we see our role as educators first and solution sales second. We teach our clients what causes volatility in the markets, educate them on the long-term cost drivers and how wholesale prices, compare to the utility tariff.

To execute our sales, we have to find each and every customer. We don't get an opt-out option. This is a meticulous, costly process. We analyze usage at a 15-minute level with our insight tools. That's why we love time of use pricing. It brings the same price signals to customers that we have seen in buying wholesale power since 1998.

Our energy strategy can be as simple as a supply contract for a couple of years with a hedging increment to

it, right? But we earn loyalty by showing our customers how we perform to meet their goals.

We apply our CE 360 view of supply, demand and delivery to cost to identify next solutions. Our workforce development employs local contractors to execute behind the meter projects, which deliver decarbonization. From battery storage and solar roofs we've done HVAC and hundreds of lighting retrofits to fueling stations and onsite co-generation projects. At its best, this is an intimate relationship with the client, not transactional.

We must offer this full range of services, because we're in a brutally competitive market. To earn an electricity customer, we typically split the available gross profit from the wholesale market with the client. This means that a DA-served business can see all in savings of 10 percent, currently, below the utility costs including the PCIA. Compared to the 1 percent savings of CCAs the competitive market puts much more of the savings in the client's pocketbook.

The utility model is more of a command and control vision of a planned economy. Quoting from your comments at the last en banc, centralized planning is critical to ensure that GHG reduction strategies are harmonized and resource investments are made efficiently. But this, pardon the expression, Soviet style central

planning must be balanced by the Commissions' goals for diversification and innovation.

I'll borrow a line from Amory Lovins when he was once told that his thoughts were "outside the box." He said, "There is no box."

The problem is the utility box is enormous. And the utilities seem to agree. At the last en banc they asked this Commission to consider pausing, "all procurement mandates not tied to reliability until the Commission can ensure that bundled customers are financially indifferent to the departing load, because the joint utilities portfolios are well positioned to achieve their 50 percent standard. And a temporary suspension will not interfere with this progress."

These assets distort the market in the long run as seen in the debate over the PAM charges. If these centrally-driven investments were still efficient, the PCIA would be negligible. Prudent portfolio management is about diversification. Just as you would not invest all your money in bonds at a low interest rate, you diversify with stocks, real estate, cash to protect your downside.

The utilities' LTTP acts like bonds, so when the market moves they get devalued. To the extent that DAs and CCAs are allowed to be in this marketplace in the short term, instead of being compelled to build long term, we

provide the space in the marketplace for innovation and proper market signals.

On the other hand, CCA providers, they claim to be closer to their members by virtue of their local Board of Directors. But those members are cities whose first duty is to their own citizens, not the collective of the CCA. These cities can return the utility service on one year's notice and the customers can return under the same rules as an ESP any time they want. So there's no guarantee of continued loyalty to help fund their long-term investment plans. They are succeeding today because they have one competitor, a regulated utility that is priced well above the current market.

Because the market yields a 30 percent gross margin, to the CCA and the ESP, making guarantee savings of 1 to 2 percent of the posted price and keep the difference of 10 to 20 percent to fund their coffers. Because ESPs function in a more competitive market we cannot keep that kind of gross margin. We have to return it to our customers. But we do agree with Don Weiss of Marin Clean, (phonetic) at the last en banc and Geof, choice is good.

So, what lessons did we learn from natural gas? Unlike electricity all natural gas consumers in California have the choice of supplier and have had that right since before the energy crisis. As a result, the CTA market

share in PG&E's core supply peaked at about 50 percent of small and medium businesses and 25 percent of total core supply. We think that's an upper bound of the potential market penetration in a fully open direct access market once you have accurate indifference calculations.

What works in natural gas has been this: one, transparent price comparisons to the utility. Two, gas storage assets are owned by independent energy producers most effectively, not utilities. I can point at Aliso Canyon and McDonald Island to prove that. Three, third-party owned generation is essential. We have not needed any utility-owned natural gas production to serve the core in the past decade. It's all imported, 90 percent. And finally four, transparent pass-through of stranded costs works in gas, as it has on our interstate gas transmission and storage.

These assets are similar to the capacity and supply costs embedded in the PCIA. But unlike the PCIA assets, CTAs get the option to use the assets we are paying for. We do not get that option under the current formulas. Applied to electricity, these assets would count towards our procurement and our RA responsibilities and be assigned to us to meet our load obligations.

Finally, what are our recommended regulatory and legislative changes? At the last month I've had Mike Day

of Goodin MacBride review the current legislation for CCAs. We believe you do not need new legislation to allow direct access to serve business customers immediately.

We have the brief here. The legislation enabling CCAs specifically permitted direct access with two specific restrictions. First, we can only sell to businesses inside a new CCA territory, not outside it. So the joint utilities can rest assured ESPs won't be everywhere, just in the footprint of the CCAs that are running today. Second, the ESPs have to sell to the CCA, who then sells to the business customer, at the contract price that was agreed to. This will involve a process of scheduling and balancing between active ESPs, their clients and the relevant CCAs. That process will require written procedures to ensure fairness between all parties.

We're happy to work cooperatively with the CCAs to implement the statutory requirement. The CPUC should be the arbiter if this cannot be done amicably before the end of this year.

With direct access available inside CCA areas, the urgency to get legislative change to expand or eliminate the cap is diminished. If the political will exists today, we could take direct access further, once we agree on the indifference methodology. And we would support graduated increases to the cap, over a ten-year

period.

Finally, we must increase transparency for the consumer. The joint utilities actually noted that that portfolio transparency is important for comparisons between CCAs higher renewable options and joint utility's green tariff program.

The CPUC's recently completed design thinking study highlighted that customers prefer a limited selection of options that provide them with choice and the ability to choose. But if customers can't see the future price, they can't make an informed choice.

We recommend that the utilities and the CCAs show their average forward price and the imbedded volatility of that price over a five-year time horizon. This allows customers to make five-year business decisions, rather than the critiqued one to two year that direct access has historically been. It's because we can only see one to two years.

Finally, the same process should be used to forecast in different costs of both utilities.

I'm good, all right?

MS. TIERNEY: (Indiscernible) go.

MR. PERRY: In summary, and I'm right there. I get to breath now. In summary, we recommend the CPUC accept the joint utilities' offer to suspend further LTTP.

By the end of the year, The CPUC should enforce, if necessary, the current law and allow DAs to sell through CCAs. And we should have transparency of stranded costs, transparency of supply portfolio costs going forward.

Thank you very much for your time and the opportunity to be here.

MS. TIERNEY: Thank you, Ron.

We have another Jeff on the panel today, Jeff Cramer, who is the Executive Director of the Coalition for Community Solar Access.

MR. CRAMER: Great, thank you very much. And thanks to both Commissions for having us here and letting us share our perspective.

(Brief pause to set up talk.)

Okay. So I'm here to offer a perspective on how community solar is growing throughout the country. CCSA is a national trade association for the community solar sector. And we represent over 30 businesses, professional services, solar providers, customers in the community solar space. Our mission is simple. And it's to expand access to solar to all customers. Any customer with a bill should have access to solar, so I'll continue banging the drum to expand choice for customers in California as well.

We are not active currently in California as community solar as I'll discuss, in other states doesn't

really exist or isn't moving or active here. But I may have some recommendations that could be helpful to you, that could work within existing statute and possibly some recommendations that would require changes to statutes.

So just to start I'll say what probably everyone knows and that is that customers want solar. I think that's one of the reasons we've seen a lot of discussion here today on the expansion of solar. It's because customers want it. And a number of studies in the last couple of years have proven that customers across customer types from corporate customers, small commercial customers, residential customers, want access to solar.

Unfortunately, not all customers have access to it. According to our estimates, which work with a number of studies in this space, show that roughly 85 percent of customers today do not have access to solar. This is a GTM, Greentech Media graphic, that demonstrates a perspective for 120 million U.S. households in the country. And as you can see, as you go down the curve here, there are a number of limiting factors that don't allow all customers to have access to solar.

Well, the 85 percent number is probably not correct for California. We would estimate that at least half, the majority of customers in California, don't have access to solar. And as we heard in earlier presentations

about 6 percent, I understand of all distributed generation, is owned and operated by low to moderate-income communities here in California.

Community solar is growing across the country. As you can see from this graph, the number of projects being developed in the third-party led are growing rapidly. This year, next year and beyond, most of that growth is happening in the northeast, Massachusetts, New York.

Thank you former Commissioner Hoskins for opening up the market in Maryland. I'll talk a little bit more that. As well as in Colorado, Minnesota and some other emerging markets.

Just to give you a quick overview of how these programs are working in Massachusetts, we have about 60 megawatts of operational community solar. That's likely to grow to about 200 megawatts in early 2018. That program is driven by virtual net metering. And that's actually moving to a declining block incentive program, starting at the end of this year.

New York, that market has just opened. They have taken a value stack approach, which creates a credit that resembles retail rate. A market transition credit is also in a declining block program where it offers proxy value for distribution system benefits and environmental benefits to create positive economics for project development there.

In Maryland, we'll likely see up to about a 200, 192 megawatt pilot program in 2019. That's a program that was designed to reach about 1.5 percent of 2015 peak load. The one lesson learned, I think, from Maryland, that could be interesting for California is -- and obviously, I'd love your take further -- but there was a policy goal to expand access.

And there could be significant debate around how do we assign a value to these community solar projects? And they decided that's a discussion worth having, but first our goal is to expand that access. So we know what works and compensation at the full retail rate, at least to move the market much like onsite has received for gigawatts of on-site solar, here in California, has received retail compensation. And that will drive the market, that will create standard contracts, expand access, right? So that's one method of phased approach to deploying megawatts into the ground, right? And expanding access through community solar.

Illinois, actually yesterday there was a big meeting in Illinois to discuss implementation of their program, which was based on 2016 legislation. They also have a credit, that's based on a value stack for the energy credit. A DG rebate and then an adjustable block program. We're expecting about 200 to 300 megawatts by 2020, in

Illinois.

In Minnesota, we are expecting about up to 400 megawatts by the end of this year. The compensation for a generation there is based on the retail rate. And the second phase of the program is moving towards a value of solar tariff.

Colorado was largely the first market in the country to expand access to community solar. It also works in a retail rate environment, although the credits are calculated user-by-user. There's also a 5 percent low income carve-out. Many lessons learned in how to deploy solar to low-to-moderate income communities have been established in Colorado. They started with a project-by-project carve-out and now have moved to a standalone program that has seen some successes.

And then lastly, there are voluntary projects. I believe a little bit over 100 megawatts in the country where utilities are deploying community solar projects on their own in 25 states across the country, some of which have very high subscription rates, some of which have lower subscription rates. Typically, the ones with higher subscription rates offer an economic benefit to the customer.

Finally, there are a number of markets across the country that are opening, and I've listed them there and

they're in the implementation phase.

CCSA operates, based on a set of core principles that we believe all programs should be designed around.

In addition to those core principles, we've put out a policy decision matrix for Commissions, Legislatures around the country to show how to best design programs that actually expand access to customers. This is just a brief example of how we created the matrix, asking key questions they have to think about. And then offering recommendations.

Obviously, I'm not going to go through all of these here, but these offer a good insight into how you can design one mechanism of a program that will affect another. Whereas in California perhaps you want larger projects, I'm just speaking off the cuff. And then you can have a lower credit, or vice versa in some markets. So this is an example of all the standard features we think are key to designing a successful community solar program.

In California, I think a lot of these facts are quite obvious. In your white paper you noted that 85 percent of customers may go out, be purchasing generation from outside their IOUs in the 2020s. And we believe community solar should be one of those options. As it currently isn't now, and there are a number of benefits that fit with California's energy policy goals. It's

clean, greenhouse gas reduction. It's local. It enhances the distribution system, especially when paired with storage. It involves customer financing of greenhouse goals. It's scalable. Obviously increases access and has co-benefits like job creation, community development. And it's also flexible. It can work across models from IOUs, third parties, to even CCAs.

Today, in California the ECR program -- unfortunately the economics don't really work for community solar at this point, especially when coupled with administrative requirements like 60-day customer acquisition of at least, I believe, it's one-sixth of the total project size, the securities laws, the preapproval of marketing materials and unsubscribed energy treatment.

So as we go forward in California -- this is my last slide -- I'll say that we have some basic recommendations. And that is you need to start with clear policy guidance. If the policy guidance is we want to expand access to solar to everyone who has an electric bill there needs to be a program that can insure that megawatts are driven into the ground. And perhaps that's done through a phased program, right? Or perhaps it's done by changing the existing program at a larger scale. There needs to be a dedicated program to reach LMI customers.

And most importantly, you just need to make sure

that these clear policy goals then translate into an economic value proposition that works for customers, access to all consumer classes. And direct ties to specific projects that include competition, consumer protection, and community engagement. That's all I have.

MS. TIERNEY: Thank you.

Mr. President, Mr. Chairman, Commissioners, you heard from four very different market segments. And I'd like to give you guys the opportunity to start because we're all very interested in what's on your mind.

PRESIDENT PICKER: We'll, I'm going to call on Commissioner Randolph, who really get a chance to ask her questions in the last session, but she says that her question is equally relevant here.

COMMISSIONER RANDOLPH: Exactly.

So in both panels there's been discussion about sending market signals through rate design. And so one of the practical questions that I have in this space is as you have more providers then you end up with even more entities setting rates. And so how do we address rate design and sending the right signals and not having -- you will have solar customers that are CCA customers, or IOU customers. And customers in the same territory are going to have different rates.

And when you're talking about trying to come up

with some of the creative rate designs that Nora talked about, and the gentleman from Jackson Family Wineries talked about, how are you encouraging the development of those in a consistent way?

MS. TIERNEY: Geof?

MR. SYPHERS: I'll start and I'm sure there's others who will jump in. One thing to note is that as a practical matter, community choice programs don't currently have the option to have different rate structures. We legally do, but as a practical matter, the billing systems of the utilities won't provide us the data to do billing for 60 days if we want to have a different rate structure, different hours or time of use periods or that sort of thing. So that's a functional problem right now.

So as a practical matter all of our rates have the same design as the investor owned utilities. They may have different values for the generation charge and they do. So that's one thing to note.

And the other is I would encourage the Commission given the comments, and I think it's correct, that regulatory process lags real market movement. And the realities of the evening spike and the duck curve aren't really reflected in current time of use rates yet. I would encourage the Commission to think about creating pilot rates that smaller implementation can test out while the

Commission is taking the time to the general three-year cycles and get the updates to time of use rates.

I think this is something we've heard interest from direct access, we've heard interest from CCAs. I think the solar community will be interested, particularly if they're optional. I think optional rates are going to be very popular with customers as well. And I think that could do things to resolve, for example, the mid-day negative price spike. We're trying to put electric car charging in downtown location, but we can't yet, because nobody wants to actually charge their car when delivery rates are high. Even if our generation rate was zero, we would be charging far more than the actual cost of electricity, during much of the year, because we see so much negative pricing in the middle of the day.

What if we could encourage electrification of transportation by having a pilot that had essentially no or very little even delivery charge in the middle of the day. And we actually ran that for a number of years and had a commitment to that. We could try that at a small scale, like at a CCA and then scale it up to the state if it works.

And so that concept, that's just an example. But as a concept, I think the idea of having pilots that can test out good ideas quickly --

PRESIDENT PICKER: Just I'm going to interject a point of information. AB 327 actually limits the range of pilots that the PUC can allow the utilities to default people to. And so while the utilities will be proposing, and we will probably be deciding a number of default tests, we cannot deem or require anything beyond simple time of use. So time variant programs could possibly be approached by opt-in programs and particularly through those default programs, because then the utilities have the option to offer people true choice.

But I will say it's not even just regulatory drag, it's the challenge of multiple decision making processes that are much slower than the pace of change.

MR. SYPHERS: Yeah, and voluntary is good with me.

MS. HOSKINS: I'll just add that another one of the many benefits distributed solar is going to bring to California is that we are testing a lot of this out, right? I mean, where our customers are going through it right now.

And I think that one of the themes I tried to share earlier was that we do need to always the balance the complexity of the rate design with the simplicity, so that we can make sure customers understand the value propositions that they're having. But at the same time, I think that's one of the benefits of having competitive

markets whether it's in energy or in telecom, is that part of our job is to figure out how to communicate with our customers and to spend the time with the customers and help them understand the value proposition. But I would say that there's opportunity and I would say that the solar industry would be very happy to try to share the lessons learned in a way, right? As you're looking towards the time when you'll be facing this into a much broad range of customers of how it's worked and where there may have been more confusion or the like.

But so far we think it is working. We think it is valuable in terms of having the ability to give a price signal to move the resource to one that's more valuable. So I'm sure people were a little scared about it a few years back before I was here and discussed it, but I can tell you that we're embracing it. And are happy to work with the Commission as we start get lessons and feedback from all of our customers and sales people.

PRESIDENT PICKER: And so the real impact the time of use rate for solar self generation is actually to move to more generation to the west side of the west-facing roofs.

COMMISSIONER PETERMAN: May I ask a follow up question? So two questions, and Mr. Perry, I'd like you to respond to both.

So the first relates to transportation electrification. The investor owned utilities and the CCAs have both expressed a willingness, and an interest in supporting transportation electrification through both charging and some support for vehicles. So I wondered if you could share what you see as the ESP role in that space.

And then second, I'm broadly interested in your thoughts about the relationship between ESPs and CCAs. I've heard you articulate both a cooperative model where you're the supplier to the CCA. And then I can envision a competitive model where you're both targeting the same customers.

And I'd like Mr. Syphers to also respond to that second question.

MR. PERRY: Thank you, first on VTG, on Vehicle To Grid, that's one of those ways where I believe direct access really can bring a solution to the marketplace. Because of our tighter relationship with business clients, I can go to a building owner, commercial office space, now and say, "Let's put in plugs."

We started our business in Montana. You know what's standard in Montana? You plug your car in at night, in the winter, to keep the engine warm. Everyone has a plug. We don't do that in California, because we don't need to, but it's not that cost prohibitive. And if we had

the ability, maybe we'd have a way to pull energy into those cars at noon, as Jeff was talking about, as well as a pilot program.

The difference is with a DA provider, at least in our business, we don't look at anything as a pilot. We don't roll something out to the market place until it's completed. And so I think we can touch the customer quicker. He can help his employees easier. And I think that gets us a little bit tighter.

I don't have any specific recommendations on it, per se. Obviously battery storage fits in with this very well. And now you're talking about a customer with battery storage and he can dump load into that and pull load down. And part of that goes to the -- you have a proceeding right now, that was filed up at Lourie (phonetic) two weeks ago, that talked about the idea that you get wholesale input if you pull power at the peak hours, or excuse me, the excess generation hours. And there is no transmission or TND costs to bring it in. That's an interesting idea. It's tricky, right? The metering part of that gets a little odd.

So I'd like to have a deeper answer. I think Commissioner Wellinghoff will talk to this deeply this afternoon.

On the second question of competition versus

cooperation with the CCAs, let's take the word target out of customers. And yes, we're a competitor. We have to be. That's the only reason we survive for 20 years was we compete for customers by adding value, doing more than just a commodity price savings versus anybody, our competitors or the utility, right? So on that level, we need to show up and see if we can serve a customer better.

I believe that while CCAs as startups have done pretty well to get going at the end of the day, they are startup businesses that use public capital in some cases to get initial funding and get going. And that's capital's in the form of mayors and cities and so forth. Private companies, publicly traded companies, we have to put actual capital in and go to market. And so you have to have a fully built business plan and that makes us maybe a little more, I don't want to say disciplined, but we have to be tougher.

And so that'll be interesting, but I do believe that that'll be good for the client. If the client values community choice more than a hedged price that maximizes his savings, or that like from us he can get a time of use price based on wholesale market prices. We've done that since 1998. We've sold power on the hourly and balance market pricing to clients, including hospitals, right? And it's worked wonderfully well.

If other side, on the cooperation side, is really one of no different than the utilities have to cooperate with us for scheduling and balancing and billing services, right? There are administerial things that we have to do together. We have to be treated fair when we go through that process. And we have to walk through that.

MR. SYPHERS: Well, thank you. I want to draw a distinction in my comments, which were critical about DA between existing direct access and new direct access. And I see a clear distinction there.

I think my concern is about the expansion new direct access, because the impact on ratepayers, in a sense taking away larger, more lucrative customers, which we don't like to admit. But the reality is large industrial and commercial customers pay more per unit, in effect of the real costs, than residential and low income.

And so I think one of the things to point out is direct access definitely does business in CCA territory now. They're going to continue doing business. We buy from many of the same providers who serve direct access. In fact, I think we have nine of them now in our portfolio. And one of the key important things to note is that our regions have broadly elected to have policies that govern greenhouse gas, renewables, local investment, programs, special programs for low-income folks, ratepayer

protections that aren't stipulated by the state.

And those do cost money. Those are things that we have decided to invest in. We've decided to buy much more long-term contracts than is required even under SB 350. We've hedged out with a massive amount of baseload renewables, because we feel like that's going to be a huge defense against the duck curve. And none of that's required, but all of it has a cost. And yet we felt that that was an investment that was in the social benefit of the State of California, and particularly our region to make.

So the hard part is if we invite in a competitor that doesn't follow the public policies that we've adopted, or doesn't have to, it's not a criticism. It's just an acknowledgement that that is a very unequal type of competition. And so my fear is, is that leads to costs going up for low-income folks in small business.

And I think that's a hard problem to solve, because having another exit fee that flows to CCAs is not something I would really recommend at this point. We have a complicated enough system as it is. So I think that's where I would leave it.

COMMISSIONER PETERMAN: Thank you. And I'll just add the reason I wanted to ask that question, I think a challenge for us is distinguishing between the implications

for different types of service. And there are some differences between ESPs and CCAs and distributed solar, so I'm trying to get my head around what rules apply to everyone and what would be distinct. So thank you for that.

CHAIRMAN WEISENMILLER: Yes, I had a follow up just on the question, taking Carla's to the next step. Which was how similar are the -- obviously we're in the process of coming up with the IRP process for the driving utility investments. What's your process at the local level for deciding between renewables, energy efficiency, electrification of transportation, community solar or whatever? I mean again, how similar of those or dissimilar to where the PUC is going?

MR. SYPHERS: So we have a distinct process. We do our own load forecast, using our own methodology. We take very seriously that the market has been flipped upside down as we look out the next ten years. And as we look out the next ten years, it's no longer a dispatch, supply and forecast load. Now, it's really heading in the reverse direction where you're forecasting supply and dispatching load. And we've built our own models and tools to do that. So we actually do our Monte Carlo simulations and we figure out where we need to be. And we go to the market.

One thing that isn't widely known is CCAs have

evolved just in the last three years where we were getting one to six bids on a typical solicitation. Now we're getting 20 to 40. That's a robust market. We're actually getting really good kinds of diverse offers, but those decisions are made within the context.

And this is an important point. The CPUC has full jurisdiction to determine whether or not we've met the state mandates for renewable energy, the storage mandate for the length of contracts under Senate Bill 350. What the CPUC doesn't have with CCAs is the ability to tell us how to meet the mandate. That's under the jurisdiction of the local governing board.

So I want to draw that distinction, because there's some question about whether or not the CPUC actually has the ability to enforce state law. And it's my interpretation that you absolutely do. That the CPUC can absolutely sanction a CCA if you have violated the RPS or don't have enough resource adequacy or those sorts of things. So I think that distinction is important.

It's not about whether or not we meet those standards. It's about how. And so the IRP process is locally driven at this point. We do submit IRP to the CPUC, but at this point they certify rather than approve.

CHAIRMAN WEISENMILLER: But how GHG-centric is your process?

MR. SYPHERS: In fact, it's primary, so RPS is tertiary in fact. Fuel shifting is secondary. So first, its greenhouse gas reductions; second, it's fuel shifting; and third it's RPS. Because we see that as a tool not a primary goal, so it is the central element.

CHAIRMAN WEISENMILLER: How much steel in the ground is coming out of your process?

MR. SYPHERS: How much what?

CHAIRMAN WEISENMILLER: How much steel in the ground?

MR. SYPHERS: So we have right now about $600 million in construction going on now, through our agency. And that coincides with a little over $1 billion of contracts. So and that's significant, compared to our territory. And in fact most of the new contracts that are getting signed, as I think you can appreciate, are being signed by community choice programs in California, not by IOUs, because of the forward look where they're over-procured so heavily.

PRESIDENT PICKER: Yeah, they did a good job.

CHAIRMAN WEISENMILLER: Well, we helped them get there. How much have you --

MR. SYPHERS: Maybe too much good a job.

CHAIRMAN WEISENMILLER: Have you looked at the CSAs, community solar?

MR. SYPHERS: Yes, so we've done a lot of research over the last six years on community solar. We've been working really hard to make the RES-BCT work for community choice, which is a type of municipal community solar. Currently, that's kind of a mess. It's not available to community choice programs.

There are other tools that we've looked at. We've done a lot of research. Our local water agency actually did a year-long study. We currently offer a 100 percent locally produce inside our territory renewable product. It's called Evergreen. And it's renewable day and night and it has all of its RA from renewable sources. And that's unusual, but that model is out there now. And so that's one form of community energy. It's not just solar. In fact, it's geothermal today, but we're adding solar to it. And those contracts have been signed.

So there is good tools out there for innovating, and CCAs are taking advantage of that.

COMMISSIONER GUZMAN ACEVES: So I just came back from two weeks of a proceeding in the Central Valley with the communities in Merced and Madera primarily, Tulare as well. And this was a proceeding dealing with communities going without natural gas. A lot of them are using propane to heat and cool and all their other cooking needs.

And I just can't help but see a parallel with

Geof, some of what you see with direct access coming into CCAs. And the kind of more macro level that I see of CCAs into the IOU territories. There's a parallel there for me.

And part of it is this question of your obligation. You know, Commissioner Peterman was asking your obligation electric vehicles, but what's your obligation on equity at a statewide level? And I've asked this in our previous en banc, I know.

But this is -- there is an obligation for your CCA customers and what is the obligation statewide to procure efficiently and renewably for poor customers? What is your obligation to those communities that we just visited where we're considering investing to get them more reliable energy, affordable energy. How do your customers contribute to that?

MR. SYPHERS: I think there's two answers. One is we have a lot of poor customers in our own territories. And Lancaster and Apple Valley and Placer County and those regions are good examples of that. Lancaster has 46 percent, I believe, customers that qualify for the discount and they're serving those customers. And those models are now being taken out.

And the second part is the CalCCA trade association, which is a member organization of all the operating programs, is going out to the state and offering

the lessons learned about how to do this and bring the benefits to other regions. And so that's something that's available to all of those regions.

So Salinas is working on, with Monterey for example, on their program. And they have some important areas down there that we need to be helpful to. But if Fresno were knocking at our door, or if we went to them, we absolutely want to help them take advantage of these benefits.

COMMISSIONER GUZMAN ACEVES: Okay, just so I'm clear, so your answer is reflecting that there's no kind of pooling or shared responsibility across the board? You're saying everyone should regionalize and is there no shared responsibility across the territories?

MR. SYPHERS: So we have, through transmission delivery rates, we have a massive amount of capacity in California providing resources to the entire IOU territories. And so that's something that exists now and that doesn't go away. With community choice programs, all of our customers still pay for all of those resources still, the so-called CAM charge and those kinds of things. And those don't go away. So that's really part of the equation still.

The legacy hydro assets of organizations like PG&E is an open question. How do those continue to benefit

all customers in California, because they're such long lived projects. And I think that's something I don't have an answer to. But I would invite a good discussion on, because we want to make sure that everyone continues to benefit from those.

And I think my deeper question is what better organization than local public agencies is there to represent low-income folks? And so I would invite a coordinated effort, as you're suggesting, with those regions to have that conversation.

PRESIDENT PICKER: So I'm going to try to insert one last question before we break for lunch. And then turn it back to Sue Tierney in case she has any questions. But -- oh, I'm sorry, go for it.

COMMISSIONER DOUGLAS: Should I go ahead?

PRESIDENT PICKER: Yeah.

COMMISSIONER DOUGLAS: I just had a quick question on community solar. You know, given your interest in California and California policies and markets obviously for the community solar model, how do you see community solar working with community choice aggregation, working with utilities, you know, what do you see as the initial key market for it?

MR. CRAMER: Sure, I think there's probably not one answer to that question. There are a number of ways

you can do it, it really depends on where you want to focus first.

I mean CCAs has Jeff noted there are ways to provide 100 percent renewable options, but then you get to the question of a direct connection to a direct project and a direct bill of credit for that project. Within GTSR there's a program for the IOUs to offer it, but that program based on its design doesn't really work at this point.

Then you go to ECR and you say well, how can we fix that program? And there are certainly some changes to the administrative requirements that could work. There's an open debate. I'm not going to stake a flag on how the PCIA should be treated, but there is certainly an argument to say that it could be changed and that could be fair to all ratepayers. And that could expand access.

But I think where I'd go back to is in my presentation, noting that if there is a policy goal to expand access in the short term whether you want to call it a pilot or a phased approach, you might almost call it a value of death (phonetic) between no projects on the ground to getting projects on the ground. There are 10-20 large community solar providers building projects across the country right now, but they're not active here, because the program doesn't work. So perhaps changing with an ECR

could be the first step, some of the administrative requirements and planning with the competition rate.

PRESIDENT PICKER: So this is sort of the meta question for me. But the previous panel, Mr. Byron asked or stated that markets are brutal. And so here we have the gantlet thrown down by new direct access to the CCAs and them some arguments that they may need to have some protection.

This seems to me to be back where we started, not in 2000-2001, but where we started in the 1890s when the rhetoric around transportation markets, particularly the railroads, was around calamitous competition or ruinous competition. And in order to have universal access and reliable service, they created the Public Utilities Commission to protect franchises for specific railroads in exchange for providing that reliable, affordable and universal service. So I think that goes to Commissioner Guzman Aceves's question about universal service.

And it just looks like to me there's an enormous amount of potential competition and particularly where there is true customer choice, where people can make up their own minds about and become self generators, who's safe? And in that which contracts are we going to protect?

We've had a call here for forcing investor owned utilities to divest themselves of their contracts, because

they're so oversupplying in California. But it looks to me like that persists in other arrangements as well. If rooftop solar continues to be successful, what does it mean that those customers are departing from the CCAs? If direct access customers continue to depart from the CCAs are they safe, so are your contracts safe? Shall we protect your contracts over the regulated utilities?

And I have no idea what the answer to this is, but that's the meta question. So if you have any observations that don't ruin my lunch, please quickly given them to us.

MR. PERRY: The interesting question about that is you actually already have that obligation.

PRESIDENT PICKER: Yeah, we do.

MR. PERRY: Today, under the CCA licensing rules if they come to you with stranded costs, their own PCIA next year, which I believe Sonoma doesn't have any today, correct? There are no exit fees imposed except $25 and $5, right?

MR. SYPHERS: Yes. Yeah, we don't have exit fees.

MR. PERRY: Okay. Because you have an embedded resources that are out of the money, so when they do they'll come to this Commission and ask you to approve an exit fee.

MR. SYPHERS: We actually have significant out of market contracts now.

MR. PERRY: Right, and so you're going to be asked to do that. And the problem is you didn't approve them to build it.

PRESIDENT PICKER: Okay.

MR. PERRY: Unlike the utilities where they had to go through an LTPP planning process, and RFP process that was approved by this Commission, the CCAs can go forth and build anything they want to. And then come to you for a post-approval consent to pass those costs on to consumers who got things in the mail that said, "Do you want to opt out?" And they were bound to a 20 year contractual obligation. That's unique to me.

PRESIDENT PICKER: Well, let me build on that. I mean that would take it to 2000 where we have a turbulent market immerging here, it's unpredictable. And they were already seeing contract failures or at least failures of generators in this market, because the utilities don't own it. What happens when nobody's contract means anything anymore here in California? Can we get the investment from third parties and from the independent power producers that we need to actually continue to keep our system working?

MR. PERRY: So that's why, in my conversation, we put this notion of a five-year forward look. I can't build

one year assets, economically. But I can build five-year storage assets economically. Give me a look to that far out, I'll put money in the ground. CCAs make an assumption they're going to be around in 20 years, that these rolling contracts will continue to persist. But contracts make the difference and real contracts get funding, right?

Today I can't do it, because I don't know what the utility rules are going to look like, and the rates are going to look like, and the comparables are going to look like.

PRESIDENT PICKER: But that's not regulatory drag. That's an artifact of what it takes to invest in this long lived infrastructure in terms of gaining return.

MR. PERRY: Except that the regulatory drag is I can't see that price today. I get a one-year look and then next year's PCIA pops up and next year's supply portfolio kind shows its head.

MR. SYPHERS: So I'd counter that the evidence so far in the last few years has shown that CCAs can and do build resources as quickly as we need to. And the producers are getting the financing. That the banks are taking out those loans. And that system is working.

I think you're raising an important question, though. I don't want to dismiss the question, because the reality is, is when you have an opt-out market that was

thought of as competitive, but isn't because the IOU cannot compete, their shareholders cannot win and they cannot lose, so they don't care. And because of that, there is an imbalance of power. And so the CCA is in a more fragile state than it should be, because all it takes is one bad year in the next 20 years and you have a problem. And so that is a problem of market design.

But evidence so far shows that that's not an issue, at least with the construction of assets. But I lived through the energy crisis too and I do want to build a stronger system, so I'm with you on that.

PRESIDENT PICKER: Our RECs worked great right up until 2000.

MR. SYPHERS: Right, exactly.

PRESIDENT PICKER: So I've ruined my lunch. I'm sorry. (Laughter.)

MS. TIERNEY: I was going to ask if anyone else here --

(Audio cuts out.)

MR. CHASET: For those on WebEx we will be reconvening at 1:30. Thank you.

(Off the record at 12:18 p.m.)

(On the record at 1:34 p.m.)

PRESIDENT PICKER: Hi. As everybody sits down, I'm just going to say a few words about the facility that

we're meeting in. This is a building was actually built by the City of Sacramento on the City's old parking lot on behalf of the State of California as the CalEPA building. Mayor Joe Serna, Jr. fought long and hard with the mayors of 12 other adjoining communities to actually win the bid on this project over Greenfield projects throughout the region. And essentially, the Wilson Administration chose this, because of the access to mass transit. And it was a successful argument about concentration of office and housing as a means of overcoming both transportation congestion and air quality.

So I think it was a very interesting point in Sacramento's history. Probably the only part of the issue that Mayor Serna did not win is that he favored having cotton woods instead of the coastal redwoods that you see planted in the courtyard out front. They're non-native species. They don't thrive well in the heat, but the landscape architects won out. So again, thanks to Joe Serna for his hard work to get this Class A building, one of the fist of the league buildings in Sacramento and downtown.

So with that, I'm going to turn the agenda over to Mr. Orans for this next panel.

MR. ORANS: Thank you. I follow everybody else in agreeing that this is a very important topic to have.

We've kind of been for 15 years using the same model that we've used to fix the energy crisis. We're seeing now competition not only at the wholesale level, but competition for the first time at the distribution level. And we've cracked open the door through various proceedings and technologies, so we have both of them moving at the same time.

So the difference really between this proceeding that you would have, and the one that we all had to even prior to the crisis, is if you were going to provide open access, more retail access, I think you're going to have to consider both the distribution level and the transmission level. What the comings and goings rules are for all of those and how that would work.

I have a panel here of three utility executives who have thought long and hard about the issues for the utility, what it looks like in various cases and I've asked each of them to take a different part of the problem. I've asked Dan Skopec to basically look at what the lift is for the State of California, more broadly on the policy side. That is what are the policy drivers that any of these models need to be able to accomplish.

And then I've asked Caroline Choi to basically look at just some of the characteristics of some of the other models from other jurisdictions.

And then finally, kind of in the third position I've asked Steve Malnight to say, and if we were looking at any of those models given the lift that Dan lays out, what would the score card look like for them?

And not rating them, but what are the things that each of them needs to be able to do. And so hopefully, then we've got distinct presentations. I've asked them to go for about ten minutes each, so we should have more than half the time left for good active lively discussion.

Now, I'd like to turn it over to Dan Skopec.

MR. SKOPEC: Thank you, Ren. And I share your appreciation for the convening of this en banc, Commissioners. It certainly is a very important topic.

Before I talk about the lift, I do want to have a little bit of an historic perspective. And I think we all know the tremendous leadership of the state of California has portrayed in energy and environmental policy over the decades. I don't need to go through that leadership to a great extent, but I do want to point out one particular element of that.

And that is what the California electric sector has accomplished since 2006, since we passed AB 32. And just as a reminder AB 32 set a goal of reaching 1990 levels of greenhouse gas emissions by 2020. And I remember that moment and I remember a lot of people saying, "We'll never

get there." Well, here we are in 2017 and we're almost at that 2020 point. What is the electric sector accomplished on that path?

And in 2014, you may be surprised to know, the electric sector was actually 20 percent below 1990 levels of greenhouse gas emissions, three years ago. By 2020, we estimate that we will be somewhere between 30 and 40 percent below 1990 levels of greenhouse gas emissions. And just as a reminder, the SB 32 target is that we will be at 40 percent below 1990 levels by 2030. So the electric sector could be ten years ahead of where it needs to be.

Now, that's not to say that we're going to slow down. Certainly, if you listen to the discussion today, we know that there's a lot more for us to do. But it is important to remember that accomplishment as we talk about potentially restructuring this sector. So as Ren said, what is the lift? What are we going to need to do to meet those 2030 goals?

Let's start with renewables. Today, we have about 26,000 megawatts of installed capacity renewables, statewide. That's about a 27 percent RPS. SDG&E, by the way has a 43 percent RPS. I'm sure you've never heard us mention that before, but I just want to make that point. By 2020 to get to a 33 percent RPS we're going to need about 31,000 megawatts installed capacity renewables. And

to meet the 50 percent RPS we're going to need 47,000 megawatts of renewables. So that incremental 21,000 megawatts comes at a cost, we estimate, of about $40 billion. That's just the generation component, not transmission. I didn't calculate the transmission as it's unclear how much of that will be needed.

The CAISO, of course, has done a great job of educating all of us about the duck curve and the potential for over-generation of renewables during certain periods of time. So a lot of people say, "Well, let's make sure that we have adequate energy storage to accommodate and to integrate those renewables." And the State Legislature and the PUC and the CEC have done a great job of pushing out energy storage programs. We've been fortunate to be a leader in that space and others have been as well.

But I can't sit here and tell you how much energy storage we're going to need by 2030. I don't know if anyone really knows the number. But I will tell you that if you're just talking about just lithium ion batteries, every 1,000 megawatts is about $2.5 billion. So do we need 5,000 megawatts of batteries by 2030? Do we need 10,000? 10,000 megawatts is another $25 billion, so that's on top of the 40 billion for the renewables. Because you know that the batteries aren't producing new electrons. They're allowing us to use the electrons at a time when our load

demands it.

Okay, so now let's talk about transportation. We all know that transportation is the major source of greenhouse gas emissions in this state. We know we're going to need to reduce our reliance on petroleum and to reduce greenhouse gas emissions in this sector.

So I'm going to use San Diego base numbers, but we can extrapolate statewide. Today, we have about 23-24,000 electric vehicles in San Diego. And the Governor has set a goal in an executive order, by 2025 he wanted to see 150,000 electric vehicles in San Diego, 1.5 million statewide. But to meet the 2030 goals we're going to need 1.5 million electric vehicles in San Diego alone. We're going to need 15 million or more statewide. That's a 60 fold increase.

And then, of course you're going to need the charging infrastructure that goes along with that.

So clearly, it's a big lift. It's a lot of money. It's a lot of investment. And the policies that are in place today are driving that, whether we have new policies or not. So as we are talking about restructuring this sector we have to keep in mind our past success and how far we have to go.

Now, on the earlier panels, a really great discussion that look place in some of the earlier panels

and there was a lot of talk about wholesale deregulation. And I want you to know SDG&E is open to this discussion. We're open to different procurement models and we're open to potentially a future where we exit procurement. We're happy to have that conversation, but we think that if we're going to go down that path, four things need to happen before we go there.

First, we have to address legacy costs. And some people think well this is just the California IOUs complaining about their long-term contracts. That's not the case. Anytime anywhere across the world we've ever deregulated an incumbent industry: telecom, water, transportation, energy, the first thing you have to do when you decide to deregulate is address legacy costs. So we have to do that. We can talk a little bit more. I think Steve will talk a little bit more about how to do that.

The second is you have to figure out who does the new build. Who does the planning and who does the new build? I talked about all the infrastructure that needs to happen. You heard earlier that there's not a lot of procurement going on. That's right. That's a question, who is going to be the one building this infrastructure, going forward and do they have the capacity to finance it?

The third is what are the procurement models that are going to be employed? One thing that we know about

Californians is we love to pass new policy. Every year there's a couple of new bills telling how we should procure clean energy technology. And a lot of people talk about the RPS. Yes, the RPS is a mandate, but it's a mandate that has a market mechanism within it. But we have a whole lot of other policies underneath the RPS that are causing us to procure renewables. We've got the RAM. We've got the ReMAT. We've got the BioRAM. We've got the Self Generation Incentive Program. And so as you start to layer on more and more of those mandates, you get much less efficient procurement.

And so I commend the Commission for its efforts on the Integrated Resource Plan. They're trying to address that issue, as we speak. But going forward in the future, it's going to be essential that we focus on the goal. As Chairman Weisenmiller said the goal is to reduce greenhouse gas emissions. And our procurement policy should be geared towards that.

And the last is rate reform. I think you all know what I probably will say about rate reform. But actually I'd really like to just point to the PUC Staff White Paper, which I think made this point really well. And I'm paraphrasing obviously, but we live in a world where we're asking our load serving entities whether it's the utilities or someone else, to provide all kinds of

services, right? But we're only charging them for the electrons. We charge them in a volumetric rate, cents per kilowatt hour. We can't continue to do that, because yes, for many of our customers, we are providing electrons. Other customers we aren't.

But we're also providing transmission services, distribution services, customer services. We're providing resource adequacy. We're providing safety. We're providing reliability. We're providing other public purpose programs.

And so we have to find a rate structure that allows people to pay for the services that they use and get compensated for the services that they provide. Today's rate structure doesn't do that. There's lots of ways that we can talk about to do that, but I think rate reform needs to happen as we move to this transition. So we're open, as I said SDG&E is open to different procurement models, but we have to address those four things. Thanks.

MR. ORANS: Thank you, Dan.

One just quick summary of the lift, Dan was teasing me that I speak pathways and he doesn't speak it. So I did a little exercise of adding up all the money in the electric sector versus all the fuel. And I think it's useful to think about the whole picture here, is there are various cases as you guys know, the scenarios are various

cases. But there's about $40 billion to $50 billion per year of revenue requirement and fuel in the power sector. And those are included, if we evolve any of those models we'll have $40 billion to $50 billion.

The good news is we're basically investing, and that could like it's going up with various investments in the Grid, various investments in batteries, etcetera. But they largely are offset by fuel costs. There's $100 billion, so double that amount in other fuel purchases in the economy.

So if you look broadly at the width that Dan calls it, it's really how do we get the investments to be able to mitigate the $100 billion? And I'm not counting the GHG emissions, but the $100 billion in fuel. The pathways analysis is it's not a huge net. Worst case, maybe it's $10 billion more if you net the fuel against the capital on the electric side.

But that is really the challenge. How do we get people to invest and net out the other fuel costs?

PRESIDENT PICKER: You're including transportation fuels in that?

MR. ORANS: Yes. I'm including all the transportation fuels in.

With that I would like to introduce Caroline Choi. She is a Senior VP of Regulatory Affairs at Edison.

And prior to that she worked at Progress Energy. And she's going to tee up a discussion broadly of other models that should be considered in thinking about this restructuring.

MS. CHOI: Thanks, Ren.

Good afternoon and thanks for the opportunity to speak. I think this is a really important forum, as others have said. And thinking about future frameworks and certainly thinking about the essential nature of the product that we deliver and how important it is to quality of life. And as Dan just talked about, just thinking about electricity now being allowed to (indecipherable) even further as we go into the transportation sectors.

And then the customer impact. This has come up already earlier today, but not just in terms of the total impact the societal customer impact. But how do we relay the benefits and the costs associated with these different changes to the "What's in it for me?" to the individual customer. Because that's how they think about these things.

And also, just the value of the Electrical Grid. I mean it is one -- I think we've heard how it's an engineering marvel, but it does touch so many homes and businesses. So how do we leverage the value of that, leverage the infrastructure that's in place today?

And then, of course, here in California the

leadership that we've shown in energy and environmental policy. Our goal, as Chairman Weisenmiller said, to decarbonize the California economy and improve air quality. And to do that in a way that others could follow, setting that path and demonstrating that it can be done.

So right now I'm going to talk about a few examples of states and other places that have taken on this challenge or what we might learn from those. So we've heard a lot, of course, about Hawaii. And it's a high cost state. But it has a number of customers who adopted distributed energy resources.

And so in that space, they've had because of the rapid adoption, real challenges in integrating those resources and operating the Grid reliably. I don't know that it's necessarily a retail choice example for California, but it's certainly I think one where we see -- and certainly from Southern California Edison's perspective, the need to be ready. The Grid to be ready for that rapid adoption of distributed energy resources as customers take on these technologies whether they're rooftop solar or electric vehicles or more storage.

New York, we've certainly heard a lot about the New York REV. In New York, it's the -- has full retail choice. The state through NYSERDA is the one that's responsible for the procurement of both the renewables and

energy efficiency. To date, the agency hasn't fulfilled what the expectations are in hitting the goals for the state. And the Governor has, I think you're aware, put out a clean energy standard proposal. And the New York Public Service Commission is grappling with how best to implement that.

Do they maintain the responsibility with NYSERDA? Is it something where they should ask the utilities to take on that responsibility, contract for those resources, sell the RECs back to LSEs? So I think in New York, they're also grappling with this procurement responsibility. And where it'll actually land going forward as they move forward trying to implement their clean energy efforts.

Texas is certainly a model. And Ren, I know your paper talks about Texas as maybe the model for the skinny utility, where the utility is essentially the wires company and there is full retail competition, which in a market, you are grappling with the implications of those market prices that arise in such a situation. And the challenges there I think that we see are around the planning, right? So if you have full retail competition there have been situations that have arisen in Texas around the integration of those renewables, how you integrate all the western Texas wind into the markets.

We were talking earlier at lunch about just the

price rate designs that people are offering, free nights and weekends of electricity and things like that. So planning around the system and particularly in Texas, not having a very aggressive renewable portfolio standard, or a greenhouse gas goal. So how California, if they adopted such a mechanism would adapt that system to the goals the state has, I think is something that we'd have to grapple with.

So here in California, of course we have I think what we might consider a hybrid structure where you have limited direct access. You have open customer community choice aggregation. And then a generous net energy metering program that has combined providing some modest growing retail choices for customers. And balanced with California's leading in energy policy space, in renewables, in storage, in energy efficiency, in electrification. And so this is a consideration I think as the state considers future models. Because as California goes, so does the rest of the country, albeit at their own pace. And sometimes with their own tweaks, based on their local conditions.

So I think the bulk of California's energy policy as we've seen in the past have really relied upon the investor owned utilities to help implement that, to help implement that social policy. So they think about the

future. How do we do that going forward as we introduce more competition, more retail choice?

Certainly the role of the distribution utility is evolving, because of the technology that's been coming along and adopted by our customers. The declining cost of PV systems and energy storage has already been noted earlier. And we see the financing innovation that's also made this technology more available to customers, so we know that additional innovative technologies are coming.

The utilities have the challenge of integrating all these resources into the Grid to plan for those resources. As well as planning for the use of those resources as Grid services, while maintaining the reliability and safety of the Grid. Maybe even enhancing the reliability and safety of the Grid with these resources.

So as Dan mentioned we do believe that the Commission has to deal effectively with the transition to any new structure, including addressing the existing costs and cost allocation. As an example, many of you know that L.A. County has recently voted to move forward with community choice aggregation. Should the county and all the cities depart SCE's service for procurement, the current cost mechanism would have approximately $250 million uncollected from the departing load and landing on

the remaining bundled customers for the utility. That's based on today's prices. So we do believe that this needs to be addressed. And it's not tenable as we look forward to more CCA formation and departing load.

And the proposal, and I know Steve's going to talk about this more, we believe it is a transparent one that we've proposed where the PAM addresses the procurement issues and the cost allocation and the value of those resources that have been procured already.

So just in closing I would say, as we move towards a new future state, we have to manage the present and deal with the costs that are existing today. So thanks.

MR. ORANS: Thank you, Caroline.

With that, I'd like to introduce Steve Malnight, who's the Executive VP of Strategy at PG&E. And he's going to focus on what the score card on what any of these models needs to be able to do.

MR. MALNIGHT: Thank you, Ren. And thank you President Picker, chair Weisenmiller, Commissioners. I appreciate you all making the time for this day, setting aside your time in your busy schedule to talk about what I think we all agree is a critical issue for California going forward.

I think my two colleagues here set this up very

well on the lift that we have in front of us to maintain and achieve the really aggressive goals that the state has laid out. And some of the options that are available to us as we think about different ways to go forward.

As I think about Ren's question, the key thing that I sort of believe is we need to start talking about what do we do to get from here to there? What do we do to get and then make sure we're making the right choices as a state, in understanding the options in front of us and picking the one that's right for us? So that's kind of how I'm going to address this conversation. What do I think we need to do in order to really address these questions and come to the best conclusion for California.

Because I think we should all acknowledge while we can look out across the world and see models, different models that work, that is absolutely true. There are many models that we could choose. Our objective really is to choose the one that's right for California given our unique goals, our unique objectives, and the customers that we serve here.

So first and foremost, I do think and I agree with Dan and Caroline, but also with Mr. Syphers from Sonoma Clean Power who came up earlier, and acknowledge that one of the things we have to first address if we want to move forward is the question of PCIA, exit fees, however

you want to talk about it. It's fundamentally this question of how do we deal with the past decisions that have gotten us to this incredibly successful place.

The fact is I think Dan starting us off appropriately, recognizing that California is not today the example of a failed model. California is an incredible success story of a transformation in our energy sector to a clean energy economy. And we're looking to move that forward. So recognizing that success, how do we deal with transition from where we are today to where we need to go?

I think all parties acknowledge the PCIA is in need of reform. It is a mechanism that really was created when CCAs and competition was a glint in our eye. Was an idea that was beginning as opposed to what it is today, which is a segment that is a substantial provider of energy services to California. In PG&E's territory, by the end of this year, we'll have about 20 percent of the load served by CCAs in direct access. I think that as we've seen, many are coming up with innovative options and creative approaches for customers.

The challenge is that that outdated mechanism does leave costs behind, because it relies on outdated benchmarks that don't accurately value the portfolio that the PG&E has procured. So what's the impact of that? By the end of the year we're estimating it will be about $180

million that's left behind for the customers who are still bundled customers. But what we're also observing is that the growth is happening much faster than many of us expected. And by 2020, just a few short years away, we're already projecting about half of the load for PG&E will be served by DA or CCA providers.

By that time if left unchecked, we start to see a cost shift of a half a billion dollars. And I know, compared to the numbers that Dan mentioned earlier, that doesn't necessarily sound like a lot. But to put it in context, for a customer in Bakersfield, a community that's not necessarily pursuing community choice aggregation and have other issues that they're focused on, the customers who are left behind who may be high users in a hot summer -- that's $100 to $150 a year of an impact on their bill. And that's a meaningful impact that we all need to address.

So how the utilities have proposed to address that is through the Portfolio Allocation Mechanism, which we've put before the CPUC, and we urge you to begin the process of deliberating on. The PAM, as we've called it, is a mechanism that addresses many of the concerns that parties have raised. It's a transparent mechanism that's clear, and importantly it addresses what I think Mr. Syphers earlier today mentioned or talked about, as a double procurement problem. Let me just clarify what I

think that actually is and just put it into context here.

The double procurement really results from the fact that when PG&E initially was procuring resources, say in 2008, to achieve the state's aggressive RPS goals, we were forecasting that we needed to serve the majority of the customers across PG&E service territory. And we were signing long term contracts in order to drive significant investment in the state and achieve our goals.

That procurement happened. It happened in our long-term contracts between two counterparties. And it was vitally important, because that contract was what attracted that capital. As the Sonoma Clean Power or other CCAs were formed, they started with the premise that they needed to procure from zero and re-procure a new portfolio. That was where the double procurement effectively happened when it was procured again.

Now, we really have to recognize that the current model doesn't envision the utilities or others handing over contract to a CCA that's formed that requires consent by a counterparty who may not like the creditworthiness of that CCA. It doesn't also envision that PG&E would enter into a brand new contract with a CCA to take that load. There's not that mechanism in place. The utilities are not designed to be market makers. We're designed to procure energy for our customers.

So that PAM resolves that problem by transferring to the CCAs the benefits associated with that portfolio, including the renewable energy credits and the resource adequacy value. So that when a CCA begins, they don't have to start from zero. They receive the benefits of the portfolio that's already been procured.

So I think there are many issues that will need to be discussed as a part of the PAM application. We would urge -- I think all the utilities would urge the Commission to take up that process and begin to resolve that issue. Because under any scenario that we really envision for the future, as Dan said, it has to start by dealing with the legacy costs.

So once we take that on, I think it's important for us to consider what comes next. What are the questions that we need to resolve in a rulemaking or another forum that the Commission may launch?

I want to suggest that it starts with a really important question that we all have to deal with, which is what is the primary priority that we have for our energy system here in California? And it requires us to really make some clear choices.

Now I could say things. For example, are we focused on the lowest possible price for customers? Are we focused on focused on the highest certainty of reliability

or are we focused on ensuring that we achieve our clean energy goals? Now, of course the natural first reaction for all of us is to day we want all of that. And I agree. We wouldn't do one at the absence of the others.

But we have to recognize the inherent tension that may exist between those choices. So just as an example, if our focus is on the lowest possible price -- I think Caroline mentioned the Texas model -- we can look to that model and see that in many cases full retail open competition is delivered. Great pricing innovation to customers is delivered, very low costs, very low prices. But what are the downsides to a model like that?

Well, a model like that will also procure the lowest price resources in the market. It will not necessarily go and seek to procure higher cost, renewable energy, more innovative technologies, because its goal is around lowest possible price.

How does it deliver reliability? Well, as Caroline, I think mentioned earlier, when there are shortages in the market it attracts capital by allowing market prices to go very high. So that people can choose to look at that market, make their own assessment about the market conditions in the future and make investments based on the opportunity to capture high costs.

I think we as a state have to decide what's most

important for us, between those three, and which we're going to emphasize. When we do, I think we're going to have to ask ourselves questions like, "Who is going to plan and procure the resources in the future?" In any scenario, what investment requires, the investment of a magnitude the Dan mentioned, what it requires is the ability for investors to look at our market. And see, with some degree of certainty, what they can expect to receive in turn.

It will require either investors to make capital investment decisions on their own and extract some kind of return for that over time. Or to sell a contract to a creditworthy country party, like of the utilities, to ensure that they have confidence in their ability to get that return on their investment. Those are the kinds of things that we have to consider, who's going to procure? And how do we ensure that certainty or at least that visibility into the future is there, so that people will make those investments.

Importantly, I also want to mention we have to ask ourselves the question, who's going to serve the customers who may not want to make a switch, who may not be as engaged in energy? Or perhaps most importantly, who the market might not want to serve. As we said before, there are many customers who in California across all of the utility service territories, who struggle every day to pay

their bills. They may not be viewed as the best credit risk for a company to provide. But it's vitally important. It's one of our societal roles to ensure that we are there as the provider of last resort to serve all customers. And that role is an incredibly important societal role that we can't get wrong as we consider a structure for the future.

A few things important to consider, in many other markets when you look out and ask how is the POLR provider solved, it's important to remember the POLR provider in most places, does not procure long-term contracts. They are buying only the energy, usually in the short term, for the customers who are left behind. So the POLR is not the provider you count on to make the long-term investments.

And also, in most jurisdictions, the cost that the POLR provider charges customers is higher than anyone else in the marketplace. We have to decide how we want to set that structure up, so that in California we achieve our societal goals.

Finally, I think it's important that we talk about pricing in a different way. Dan mentioned this, and it is a critical issue. So traditionally we have talked a lot about pricing. I've stood in front of you many times and talked about different types of rate reform or NEM reform. I would just highlight this. I think our conversation has by and large been on things like time of

use rates, as a better proxy for market costs or should we have a fixed charge? I think it's time for us to recognize we're going to have to move beyond that in a market structure going forward.

We have to have a different kind of conversation. A conversation about what are the products, the real products that customers receive from the Grid or from their energy supplier, and how should each of those products best be priced? Here's my example.

If we have a customer who has solar on the roof top and a battery in their garage and an electric vehicle in their garage, they may very well be a self generator. They may actually meet all of their normal energy needs. They may not count on the Grid for anything, but they probably are not cutting that wire. Why not? Because the Grid is always there to provide their resource even during our solar eclipse or during the periods of sustained storms or if their equipment fails, the Grid is there for them. What's the product that the Grid provides at that time? It's not really kilowatt hours. It starts to look more like an insurance product. "I'm here to serve you when you need it most and when you can't predict when you're going to need it." And I think it's important to recognize that if the Grid is an insurance policy, you don't pay for an insurance policy when you need it. You pay for it ahead of

that time, because that's what the value is. It gives you certainty to know it's always there.

So that conversation around pricing, around procurement models and who's going deliver. And how we serve the customers who are most in need of service, I think those are vitally important questions for us to take the time to get right. And the thing I would just, in closing, urge you to think about is how we make sure that we not only get these questions right, but deal with them quickly. Because in the absence of us addressing them, the market continues to more forward and the questions are actually being answered for us.

So we have to create the space for all of us to have the time to resolve these questions in the best interests of California to make sure we get it right for our customers. And PG&E for one is certainly happy and looking forward for engaging in that conversation.

MR. ORANS: Thank you, Steve. With that I'd like to turn it over to the Commissioners to ask questions.

CHAIRMAN WEISENMILLER: Let me just start with a couple of foundation ones and then give probably the more interesting one. The first one is just the proverbial, have you guys procured anything that was not at the PUC's approval, direction and approval?

MR. SKOPEC: Not that I can think of.

CHAIRMAN WEISENMILLER: Neither could I.

MR. SKOPEC: No, that I can think of (indiscernible) count on.

CHAIRMAN WEISENMILLER: Okay. Do you profit at all from procurement?

MR. MALNIGHT: No, we do not.

MS. CHOI: No, we do not.

CHAIRMAN WEISENMILLER: Okay. Do you, in turn with decoupling, do you have any incentives not to pursue energy efficiency?

MR. MALNIGHT: No.

MS. CHOI: No.

MR. MALNIGHT: As a matter of fact we have incentives to pursue it.

MS. CHOI: Right, exactly.

CHAIRMAN WEISENMILLER: Right, I mean obviously as we get into that, I'm sure Ralph will hit on the point of making sure we're providing the proper incentives to the entities getting into this business.

There seems to be a drift where you're moving more to become a wireless company. Now how does that work if we're back to the POLR, Provider Of Last Resort. Can that work or how does that work? Is that something you're prepared to do, what would it take? Or do we have to find somebody who's going to step forward as a Provider Of Last

Resort?

MR. MALNIGHT: Well, I'll start off and then I think these folks can take it over.

I don't think the current market structure works for a POLR provider, because again we're really looking to the utilities. We're putting mandates towards the utilities to procure resources long term, to accomplish our goals. These are above-market resources, resources that by definition require a mandate to enforce the procurement, because they're not always the most cost effective resource that's available today.

When you do those kind of contracts, you really need a sense of how much load am I going to serve? And as a POLR provider, you recognize that there's great uncertainty in my load service. I'm just kind of at the whim of a customer who may choose to come back. You're buying shorter term and the existing structure clearly doesn't work in that model. It can work. And I think the utilities certainly would say that's an important role that we would be willing to take on. But we need a model where the cost allocation mechanisms are right. And where we have built a broad base model for all entities that serve load to make sure that our mandates are applied equally across the board.

MS. CHOI: So I would agree with what Steve said.

And I also think it's just moving to a wires only, because I don't think with California policy particularly with its clean energy goals, that the utility can just step away and just be a platform for the delivery of products to customers. So I think we do need to change the model and particularly in how the costs are allocated and how procurement is done. But I don't know that I would agree that utilities are moving just to a wires only model.

CHAIRMAN WEISENMILLER: Well, at this point, collectively you're running like, say a billion dollar energy efficiency program. Again, looking into the future, who does that? Do you continue to do it? What happens there?

MR. SKOPEC: That's a very good question. I mean, I think those are the kind of questions that we have to ask. Who runs energy efficiency? Who runs demand response? I think Commissioner Peterman asked who's going to build electric vehicle charging? I think all those questions kind of flow from the big questions that we talked about today. Are we going to start this restructuring process and who's going to be doing the planning? Who's going to be doing the POLR?

So as Steve said, there's lots of models where these things can happen across the country. We have a heavy utility-administered energy efficiency program. Of

course, you know that much of that money is parceled out to third parties to manage those programs already. And you could have energy efficiency markets. I think that some jurisdictions do that. And you'd have to evaluate how effective those are, relative to the ones that we have in place today.

MR. MALNIGHT: I would only add I think that in a world where the utility is not serving the energy load for our customer, we will not really be the most likely place to serve an energy efficiency programs.

You really need to be able to work with customers on how they utilize energy and provide them the right resources to use it in smarter ways. That's a natural reaction for the entities that serve loads. So frankly, I think it becomes a significant question how we would run a central energy efficiency program when we have a significant dispersion in who serves the load.

CHAIRMAN WEISENMILLER: Well, the same question on low-income. You guys have CARE programs. You have like $300 million of low-income programs. What happens with that?

MS. CHOI: Well, CARE is funded through the distribution charge. So all customers still benefit from the CARE program, because that's the way it's funded. So the utility could continue to operate that program, but

there are a lot of questions that I think come up as you think about how you want to assign responsibility for different portions of the service. Or if you want to assign responsibility for procurement separately than efficiency.

I do think it also ties to what are you trying to achieve, what Steve teed up earlier. So is it about achieving the clean energy goals of the state? Is it about doing it at the lowest cost? And what is the priority, because I think depending on how you answer those questions will dictate how you then develop the programs and the model that you want to go forward with, the framework.

CHAIRMAN WEISENMILLER: All right, the last one is this. Obviously all of you are starting now major charging programs and again in this new model, is that you? Is that the CCAs? I mean who? Will you do charging on everything but the CCAs? I mean how does it work?

MR. MALNIGHT: I think electrical vehicle charging is one of those distributed resources that actually has the opportunity to look like a lot of different things. It can look like Grid benefit. It can look like ability to help meet wholesale market needs. So I think we have to think about all of those DER programs: electric vehicles, distributed storage, distributed generation.

If we're really trying to say how do we create a program where all of those multiple value streams could be captured from those resources? In a world where the utilities are the substantial load serving entity, plan/own/operate the Grid, it's pretty clear that there's a strong incentive for the utility to help drive all of those value streams. If the utility doesn't have access to all those value streams, I think it gets much more complicated.

COMMISSIONER GUZMAN ACEVES: Okay. Well, one proposal you guys have kind of put out there in terms of how we manage this transition that seems to look inevitable, are there different ways that you thought about how to manage that, what pace or what structure should be specific? And I'm sorry to not know if you've included something explicit in your PAM proposal.

MR. SKOPEC: Well, I think regardless of the path that we take on wholesale deregulation -- I think you heard Steve say this -- we have to address the costs that have already been put into place, because we're having de facto wholesale deregulation happen with CCAs. With direct access, despite maybe what we heard in the second panel it's going take an act of Legislature to open up direct access and expand it in the IOU territories. But we're having CCA departure as we speak.

And so in our mind, the first thing you have to

do, is settle that legacy cost issue. I think all the other questions probably could use a lot more thought. And a lot more discussion whether that's OIR or what it may be. But regardless of the path you take I think you've got to address the cost shift that's happening vis-a-vis the PCIA today.

MR. MALNIGHT: Okay. And if I could just add to that? I mean, I want to make sure we understand also why that's so, so critical.

I think we heard today communities are trying to make decisions about whether or not the communities should go community choice aggregation. Customers are trying to make decisions today about, "Should I take advantage of solar?" And I think we have to recognize right now they're making those decisions in the absence of solid information about the real economics of that decision and the real long-term economics.

So to provide certainty to those communities, to provide certainty to customers who are looking to take advantage of solar or other things, I think it's important that there be a strong signal sent that there's a sense urgency to tackle this issue. And come up with an appropriate response, so that we can kind of get on with the business of making the decisions that are in front of us today.

As Dan said, once you solve that, I think there is time to resolve the big questions that are going to require some substantial work from all of us.

COMMISSIONER PETERMAN: Just one point of information on that, just so everyone's on the same page, because a couple of folks have referenced the PAM proposal. I just wanted everyone to know that the utilities filed an application a few weeks ago with a proposal here related to PCIA.

That application is assigned to me. We are treating it with the utmost urgency. If anyone wants to follow that proceeding I'm just going to read out the application number now. It's A-17-04018. Thank you.

COMMISSIONER RANDOLPH: I wanted to ask a question shifting from past costs to future planning issues. In the CC, Jeff mentioned when we were talking about procurement going forward, that the CCAs have RPS requirements and RA requirements. And they view that as sort of adequate to kind of carry that planning load in terms in terms of trying to meet our goals and deal with costs and reliability.

Do you think that those are adequate regulatory mechanisms for long term planning? And I'm going to ask the next panel the same question too, so those of you on that next panel think about it as well.

MR. SKOPEC: I'm glad you asked that, because it was interesting when I listened to that answer knowing that in the IRP proceeding, which I know you're the assigned Commissioner of, the CCAs fill that proceeding with comments that the Commission doesn't have the authority to instruct them to do X, Y, or Z. So that's a real conflict.

Is it going to be more complicated for the State of California to manage dozens and dozens of load serving NGs, IRPs? Of course it will be. But before you even talk about complicated, you have to talk about do you have the authority. It's clear you have the authority over the IOUs, as it relates to the long-term procurement plan. And you have that same authority as it relates to the language in SB 350 that calls on the Commission and utilities to create these integrated resource plans. But it's not clear as it relates to CCAs.

And despite what I heard today, I know what I read in the comments and they are pushing back very hard on that.

MS. CHOI: And I guess I would just add that the IRPs are really intended to help see whether the state is going to achieve its goals, right? And so it's not just the authority of having them do it, but it's the quality of those plans, right? Because if they're not really detailed enough or having the right -- they're all using different

baselines or different scenarios, I think it's really much harder for the state than to understand whether or not it's on track to achieve these really ambitious goals for the state.

MR. MALNIGHT: And I guess the one thing I would add is that I think that a key question for me is, if we step back and say if the state's trying to make sure we're accomplishing our goals, our environmental goals, in the best way possible we can have a structure where they're planned. Where there are many, many smaller plans that sort of come together and we assert that they meet the goal.

The question also is just are we achieving the best state outcomes by optimizing across multiple small plans or with a larger plan? I think that really is the role of the CPUC through the IRP proceeding, is to look holistically and say are we accomplishing the best outcomes for the state holistically? And I think that is where some of that tension is going to come in, in that proceeding.

MR. SKOPEC: If I could just make a quick analogy, Commissioner Randolph? You know, if you think about the water industry in California and its sort of inverse related to the energy industry in terms of the makeup of investor owned utilities versus municipal. About 80 percent of water utilities in California are municipal

and maybe 20 percent are investor owned. I think there's something like 7,000 municipal water agencies, about 400 and some are urban water agencies.

When we were in a drought, you know it was clear that we were going to have to do a number of things to protect our water sources and to conserve energy. And there was no doubt about that, but the jurisdictional authority to do that was challenging. The Governor had to issue three or four emergency orders. And the Water Board had to write emergency regulations that pushed forward the Governor's 25 percent reduction goal.

The Water Board did have fine authority to do that. I don't know if they ended up fining anyone, but it was a very messy process. I'm not sure how adequate it was. Thank goodness we had a wonderful winter this year. I don't know how much longer that process could have taken place. But I think if I were sitting in the Governor's seat and I looked at that process of how am I going to get these water agencies to conserve versus how am I going to get the energy industry to meet its greenhouse gas goals, it's a no brainer what kind of structure I'd want to have.

PRESIDENT PICKER: Commissioner McAllister?

COMMISSIONER MCALLISTER: So thanks for your comments. I guess I'm going to ask a question on energy efficiency and then maybe a question about rates. So

you've laid out this potential scenario where we unbundle services. And if it is a skinny utility and different services are provided by different types of services providers, so let's just think about building on Chair Weisenmiller's question about the billion dollars in energy efficiency.

If we do think that third parties are kind of the solution for that how do we make sure -- and you can think about other parts of it, DER or whatever, you can think about different kinds of service, even ancillary service providers. How do we ensure that those service providers get the data they need to develop products and get to customers with offerings that those customers actually want to buy?

MS. CHOI: So, I don't know that it's all third-party provided, but I can give an example. For instance, the Preferred Resources Pilot (phonetic) that we have underway right now. And we identify the need and then we put out an RFO that's back, so there is an identified need in a specific location. It's up to that third-party provider when they're putting the bids in, in terms of getting those customers to sign on to provide those services over this many days or this many hours of the day when it's called upon.

So I think it's providing a certainty of a

contract and then seeing the performance, but I think that's what we're talking about when we think about third-party providers for energy efficiency. Are they aggregating these services and providing them back to the utility as a Grid service to maintain reliability of the system? Versus the customer-funded programs that the utilities provide, so right now there's two. We've got customer-funded programs and we've got third-party providers.

And we want to make sure that for instance in the PRP we were trying to make sure that we didn't have overlap of those things, because we also contract for services within the customer programs. We didn't want to inundate customers with offerings from various parties all working on behalf of Edison.

COMMISSIONER MCALLISTER: So but presumably you facilitate getting customer-level data, so that they can determine what the needs for that customer might be and what the impacts of different measures they want to go at. So that they can target the best opportunities, right? So that's what I'm asking, really.

MS. CHOI: It depends on the -- yeah. So in the PRP area we do tell them the types of customers that are in that area, so they know the kind of programs that might work best. So in a specific area it might be more

commercial and business customers rather than a residential customer area, and so what are the kind of programs that best appeal to commercial customers.

COMMISSIONER MCALLISTER: Okay. So I guess I'm thinking of analogies like the Energy Trust of Oregon or entities like that, that actually do almost act like a utility with respect to some of these demand side programs. And facilitating them in sort of an objective sort of third-party way in a consistent manner, so I just want to put that example out there.

So I also want to ask about rates. So there's been a lot of suggestion that we need to deal with rates, but not a lot of drilling in I guess. And my impression is that -- well, I guess I'm wondering what your thoughts about how that process -- I don't(indiscernible) asking this, because I'm not in the other Commission. So sort of upper level kind of thoughts about how we can get there in a consistent manner with individual rate cases that often end in settlement discussions, and therefore don't establish precedent. How can we think through that in a consistent way such that each one builds on the last, and we get where we want to go in sort of a straighter line?

MR. MALNIGHT: I think it's important to first acknowledge you mentioned some rate cases. I think we need to also think about the rate-making model at the Commission

today. I mean, the individual rate cases really set our revenue requirements. They don't do rate design and rate implementation.

In rate design we have typically done through OIRs or other structures recently with the residential rates OIR. And I do think as we go forward in this model and consider new models of competitive options, of competitive providers, it's the right forum for us to ask ourselves the critical question of how do we envision customers paying for the products they're going to receive from the grade or from competitive options, right?

If, for example, we decide to pursue a more competitive path and open market, an open customer choice market, we have to recognize we really won't have much control of a rate design. By definition, those markets innovate rate design on their own. As Caroline said, you go to Texas and you may get a free nights and weekends rate. You may get free energy during certain time periods of the day, because that's the competitive market innovating to win a customer over.

I think as a Commission and as an industry, we have to ask ourselves what's right for California? And the right place for us to do that is to deliberately ask ourselves what is the products that are served today by the Grid that we think should be competitively offered. And

people should compete against the utility to offer those kinds of services.

What are the products that really only the Grid's going to provide. And I think as Chair Weisenmiller said earlier today, we don't necessarily want to see two wires running down the street competing against each other. So those kinds of products, we should make sure we're pricing in such a way that you get the people who provide, who invest that capital are going to get an appropriate and customers get the right kinds of pricing signals and we move forward.

So in my mind, there's plenty of space for us to deliberate on those critical questions as a part of a proceeding where we consider holistically, what's the right market design we'd want to pursue.

PRESIDENT PICKER: So I'm going to ask kind of a different kind of a question about the competition. And there's a couple of different models that discuss how California gets to its 2030 GHG reduction goal. I think we've heard the word, pathways. Pathways suggests that we need to actually see the electric industry displace about 20 percent of the use of natural gas in order to actually get to our greenhouse gas goal.

So there's two corollaries. One is that you can't get to our 2030 GHG goal by going to 100 percent

renewables in the electricity supply alone. That actually comes down at some point to how we use the clean electricity we're generating rather than what proportion of the portfolio or our electric generation comes from renewables. It's far more important as to how we use it.

But there are a couple of utilities, investor owned utilities that are joint electric and gas utilities. And is there an inherent conflict in them trying to pursue that goal of factually displacing natural gas with the clean electricity?

MR. SKOPEC: I don't think so. You know, I think that what we've seen on the electric sector and the statistics I mentioned earlier about the tremendous progress this sector's made has been about an effort to decarbonize the wires, right? Decarbonize electricity decarbonized and then as you often say expand the utilization of electricity into other sectors, so that you start to decarbonize other elements of the California economy.

The same thing can be done on the gas side. If we had a concerted effort to decarbonizes our natural gas sources, you can achieve that. Now, the pathways work -- you cited what may happen to the use of natural gas. That's under one scenario. There is a scenario where you decarbonizes natural gas and you could start to see other

uses. That's one of the reasons why we're so supportive of the IRP process, because we want to see these different technologies and these different utilizations of technologies compete against each other to show what is the most cost-effective way to reduce greenhouse gas emissions? I know some people up on the dais are skeptical about renewable natural gas. This may not be the place to argue about that today, but let's let those technologies compete. Let's see if they can win.

PRESIDENT PICKER: Well, I mean I guess my question is do they compete well in a combined utility? I'm just asking that.

MR. SKOPEC: I get to wear two hats as you know, and the wisdom of our management was that we needed to have separate management for the gas company versus SDG&E partly for that reason, because they knew that they were dealing with different commodities, different service territories. And so I get to see that competition daily and I think they do. We have conflicts from time to time, but I think that -- I know that the gas companies are working very to try to reduce the greenhouse gas emissions from its fuel.

And you know the results of SDG&E as it relates to renewables, so I think they do compete well. It doesn't mean, one that they're going to be equally successful. And I don't think we know that today. The only thing we're

asking is don't send one of them on an off ramp today, because that could be the winning solution ten year from now, fifteen years from now, twenty years from now.

PRESIDENT PICKER: So somewhat in the same vein, but not quite with the same issue, but the Legislature sort of recognized the pathway model requires that clean electricity has to displace the use of petroleum fuels and transportation. And they did that in part, and correctly by directing us to require the utilities to expend dollars on the electrification structure for transportation.

And I'm struggling, again how do we then capture that investment that the electric utilities are making that reduce the amount of greenhouse gas emissions from the petroleum industry and attribute it to them. And then what does this do to our high-level metrics for energy efficiency when we're actually requiring the utilities to use more electricity, but to reduce greenhouse gas emissions?

So how do we begin to get out the overall frameworks that we use for declaring success on these high level and very central policy goals here in the state?

MS. CHOI: I think we have to look at things differently as you just indicated. And certainly, for instance if the utility -- if you think about the utility helping to move a vehicle from gasoline to electricity.

And think of it as an energy efficiency program, right? So what is the energy efficiency improvement that you're getting from shifting from gasoline to electricity, and measuring that efficiency improvement? Then it can work just like other energy efficiency programs that the Commission has authorized. It's just like a refrigerator getting more efficient or an appliance being more efficient. You've taken something, in this case a car, and made it more efficient by shifting it to electricity.

In terms of how you measure that, you can measure then the greenhouse gas impact. And we can reflect that in our innovative resource plans that we file at the Commission.

And I certainly think as we think about how it fits in, in the overall say Cap and Trade Program, we were certainly talking to Air Resources Board about the allocation of allowances that would reflect the electrification of the transportation sector and the benefit that it provides.

MR. MALNIGHT: Yeah, I would only add I mean I agree. It requires different thinking, but it's not an unsolvable problem. I think it requires a high degree of collaboration between carbon regulation in the state and our IRP process. But I actually feel like the IRP process really is set up to address that kind of a question. What

are the goals and objectives that we want to holistically deliver across the energy system?

Electrification can be a good one and we can deal with that in the whole process of the IRP to assess the impact that the electric sector on the state's carbon emissions. I think that's a right kind of forum. We need to make sure that forum is looking holistically at all of the impacts across the state.

PRESIDENT PICKER: I'm sorry, I moved on real quickly. I didn't let you have a chance to address my first question about this issue of a moral hazard between the electric and a gas commodity.

MR. MALNIGHT: Yeah, I mean I agree with Dan. I don't think that that is inherently a conflict today, because frankly there are many questions about exactly how we're going to achieve the carbon reduction goals going forward. And what the best paths are.

I think it's clear that natural gas has to deliver solutions to help achieve carbon reductions, to move forward. But it's also going to be a system that's needed and required in the state for many years to come, in order to help enable that transition. So I don't think there's an inherent conflict.

I will say PG&E is a little different. We have the management of both commodities within one utility, but

we look at each commodity independently. And ask ourselves the critical question of how are we going to -- what are our business strategies to align to achieve the state's carbon goals over time? We recognize the issues that the gas business needs to continue to deliver. And as Dan said, I think there are solutions that are in front of us and we need to continue to talk about them as we go forward. But I don't think there's an inherent conflict, because they're both together.

PRESIDENT PICKER: So, you know, having laid out this significant challenge of clean electricity displacing market share for a large industry, the gas industry. And then another much larger industry, the petroleum, both of which have fairly strong imperatives to maintain their market share, do you think there's a scalability to actually withstand the pushback? You know, internally and externally, if in fact there is a issue where one half of the combined utility believes that the right answer is clean electricity. And the other is gas, how do you deal with that?

But for all three of you, how do you see this coming competition with the petroleum industry for share of transportation fueling?

MR. SKOPEC: Well, let me take the second question first. I mean, I think all three of us have

stepped up and said we're willing to do our part to help electrify the transportation sector. Now, the pace of that is the question and we've got proceedings before the Public Utilities Commission that are going to help determine that pace.

We know that the state wants to move in this direction, the state's going to have to do a lot of work on the automobile side to get people in those cars. We stand here ready and willing to provide the charging necessary to charge those cars. I don't know that we see it as it's our job to slay the oil industry. It's our job to provide the infrastructure that our customers want and need.

PRESIDENT PICKER: Does he speak for you?

MS. CHOI: Well, I mean I agree with what Dan said. I do think it isn't our job to slay the petroleum industry, but I also think we have a goal here in the state that we are strongly in support of. And to achieve that goal is going to take greater electrification. And that electrification needs infrastructure to ensure that it's there for the customers as they adopt those technologies.

Anyways, we are certainly not conflicted. We believe that electrification has a great future here in the state. There's a lot of opportunity in the transportation sector, not just in the light-duty vehicle space, but across the board. And we are seeing these developments

happen with large OEMs, your traditional OEMs, equipment manufacturers, in this space. And so we're very optimistic about what the chances are.

And I think the market then will show that if you have affordable electricity rates, that you can fuel your vehicle at a lower cost than it costs for your petroleum product, we're going to come out a winner.

MR. MALNIGHT: Yeah, I think I'm just going to continue to emphasize what these guys have said. I think that all the utilities are clearly committed to the vital need to help electrify the transportation sector in order to achieve the state's greenhouse gas goals.

We all see that as a clear opportunity to use a very clean system today with a robust network that's already built and available, but just needs that last piece to enable charging. We stand ready to do that. I agree, I like the way Dan articulated this. I mean, it's not -- we don't approach this from the standpoint of saying we're trying to displace the entire petroleum industry.

I think our point is we're trying to make sure that this system stands ready to deliver what customers need and want. And we see a clear imperative from the state and from customers frankly, to move more to clean vehicles.

MS. CHOI: I would just add though, that

certainly one of the things that's been a barrier to adoption of vehicles is awareness of vehicles. And so we believe that part of the role of the utility is to help with improving that awareness of vehicles without the range of these vehicles. And then having the availability of the charging, so that the range anxiety that we hear so much about is also reduced. And so people get into these vehicles.

COMMISSIONER PETERMAN: So let me ask a related question that really gets to IOU ownership of assets as we move forward. So we started the discussion talking about end level setting the point that the IOUs are not generally owning generation and not earning a return on it. That being said, the IOUs have elected to -- and been supportive of over the last couple of years -- ownership of some of the new emerging technology assets such as electric vehicle charging and energy storage.

And so I'd appreciate hearing from you, how you're thinking about this question about which assets the utility will own, include a prior (phonetic) rate base, because you also have at times elected different models. And Ms. Choi talked about going forward, the end game is unlikely a wires only company given some of the broader state goals. But I wanted to delve into that a bit more in terms of, if not just a wires only company then what other

assets would you like to be owning at the end of the day?

MR. SKOPEC: Well, to touch on your first question how do we think about it, we start with the premise we're here to serve all customers. We're also here to implement public policy, and so to the extent that public policy wants to see more electric vehicles, they need to see the charging, we want to be able to provide that. We think that with our service territory, with our engineering capability, with our rate structure we can provide that as good as anyone.

Certainly, there comes a point where competition should and can be introduced. On the wholesale generation side, that competition took place after decades and decades of utilities building generation. And then technological innovations coming along that allowed third parties to build that generation more competitively than utilities, quite frankly. And so it took a long period of time to get to that point where we could do wholesale generation competition adequately. I think with brand-new markets that's a lot harder.

And I think the PUC tried it with electric vehicle charging. They tried a model where the utilities didn't have a role and third parties stood before you many times and said, "We're ready and willing to do that." And unfortunately, all but maybe one or two of those companies

are bankrupt now.

So if we need to get this started, and we want to make sure that it's ubiquitous and we want to make sure that it's in disadvantaged communities then you're going to need the provider that serves all customers to do it. That's us. At some point in the future that could change and you could say, "You know what? We don't think that we need the utility in that business. We want you to sell off those assets." Just like you did -- not you, but the Legislature did in the late 1990s with our generation.

Batteries is another example, there's a lot of different ways to deploy batteries. You know, you hear a lot about solar in storage, batteries in a garage, batteries behind the meter. And that's one deployment of batteries. We're deploying batteries in our distribution system and our transmission system that benefits all customers.

Is one model better than the other? Not necessarily, both are necessary. So I think in the early days it helps to have the large capital and the large infrastructure to invest in those technologies and have them spread out to all customers. But when the technologies get to a certain maturity, I think you can start to open up to competition.

MR. MALNIGHT: Yeah, I agree with Dan. I think

our objective is to own assets when the utility is the right owner of the assets, when we fell that the utility is the right owner of the assets.

And I think that is probably different over time, as technologies emerge, as markets evolve and markets emerge. And Dan said, generation's a great example. Over the long time horizon of where utilities were the obvious owner to where maybe we're not anymore. And I think you see how the market has evolved there. I think if we're wildly successful in batteries and other kinds of new technology, you probably will see a similar evolution.

But I do think it's important to go where Dan was, right? We own the assets that drive benefits to all of our customers and to the system. And when the utility is best positioned to own those assts I think it makes the most sense. I expect we will have many conversations with the Commission over time about when is that really the most appropriate for the utility? And the answer will change with time.

One thing to note though, and I think you mentioned that the utilities aren't involved in the generation side. But one of the benefits of having a large asset base and a large balance sheet is that we are involved. We don't make money on it, but we're the counterparty to a contract. And when a counterparty is

thinking about investing billions of dollars over many years, they really are counting on a creditworthy counterpart they can count on to deliver those returns over time.

And I think that's a vital role that the utilities play. It doesn't mean we have to play it, but you have to have that kind of credit quality to drive that capital.

COMMISSIONER PETERMAN: Thank you, good point.

MS. CHOI: I guess I would just add that I think we've talked about the fact that it may not just be a wires company, but maybe still remain in a procurement role and that sort of thing. But also with respect to utility owned assets again I agree with Dan and Steve that it is where it makes sense and that can shift over time.

Certainly, as we think about the future and the planning and operation of the distribution grid, particularly as you have distribution markets that may evolve and come into place, that the role of the distribution system operator then changes. And to maintain the reliability of distribution grid it may be that there are times when it is necessary or useful for the utility to own some of those assets in order to maintain the reliability of the grid and power quality.

COMMISSIONER RANDOLPH: So this discussion is

kind of wires plus, right? It's like you're providing this distribution and you're owning some assets. And to Steve's point about what is the compensation model for that, can you guys talk a little bit more about some of the ideas that if we assume there's an interest in moving away from volume-metric rates and dealing with sort of how the compensation would go forward? I'm curious.

MR. MALNIGHT: Yeah, I think a couple of things I would just say. First, we have to draw a distinction between rate design and compensation models. Because our compensation model is really cost of service rate making and return on a rate base. That's what determines the amount of profit effectively the utility should earn for its investment. Rate design really is a question of how we best allocate that to customers. How we allocate the appropriate pricing signals, cost signals to customers, so those two can be somewhat different.

I think the key question for us today is the utilities' compensation model, the utilities' business model is fundamentally premised on the idea that we make money when we invest capital. We build assets. As Dan mentioned, there's a substantial need to drive capital investment in the state over time. That may be a model that serves us well over time, it may be that at some point we say we need to revisit whether we want to encourage the

utilities just to only earn when they invest capital. I'd say there's many different models for that.

Frankly, we made that change in the procurement system where we effectively took away the compensation model for utilities to do procurement, but kept the utilities in that business. We could actually have the utilities not make compensation just on an assets, but be compensated based on making the best choices for how to run the distribution system, the outcomes of the distribution system, the reliability and the safety of the distribution system. There's lots of ways we can do that through performance-based ratemaking or other things.

I think it all starts as I said from before with clear goals and objectives for what we want the electric system to do and then you want to incent all the players to take the right actions to deliver on those goals.

COMMISSIONER RANDOLPH: Thank you.

PRESIDENT PICKER: I want to go back to this question of the ability to stand behind fairly hefty expenditures and credit worthiness. Are you suggesting that we ought to stress test all of the different LOCs to see whether they actually will be able to achieve the goals that we have for them within their areas of interest and service?

MR. MALNIGHT: I wasn't necessarily suggesting we

needed a stress test. I think the market stress tests us all every day. You know, the market is usually dependent on two counter-parties coming together and agreeing on terms, right? So if entities are willing to invest on contracts then that's a good signal from the marketplace about the creditworthiness of that company.

PRESIDENT PICKER: No, but there is this implied issue of scaling that it requires. That there's some level of scale that's going to be required to meet the challenges of the future and do we want to allow people to enter into the pool to actually supply that investment and those services when they may be more risky than others? So do we want to actually try to set some level of creditworthiness, so that we don't all of a sudden have failures and the Legislature has to really suddenly back track and start to send things back to an earlier stage?

MR. SKOPEC: It's a good question and I'm really glad you're asking that question now, because you're right. Once you kind of open this up it's really hard to put it back. We've done that once before and it was messy and it resulted in a lot of costs.

PRESIDENT PICKER: I don't think we're opening it up, it's open. It's going there.

MR. SKOPEC: Okay. I'm not going to tell you what the best way to stress test it is, but I just want to

share an experience to give you a sense of the importance of this. So sometimes I get the pleasure of talking to our investors. And in every single case where I've met with our investors AB 57 comes up whether it's we talk about it or we talk about it. Now, how many people remember AB 57? Maybe not a lot. AB 57 was a law that came out of the energy crisis that gave the market assurance that when the utilities entered into long-term contracts and the PUC approved them, that they would get rate recovery.

So of all the things that our investors want to hear about, and they want to hear about a lot of things that we're doing, they always want to know that you're going to get that recovery. And by the way, they mention AB 57 when they talk about the strength of the California regulatory environment. So no one walks around anymore talking about AB 57, but our investors do.

And this goes to the point that you're making, Chairman Picker, how are you going to ensure that the investors have the same confidence in all these new players that they have in us, that you granted us by implementing that law?

MR. MALNIGHT: Yeah, I think Dan that's a great point. I think it's important as we go through this to just make sure that we're considering the unintended consequences with different alternatives that we may see.

You know, as I mentioned before much of the regulatory construct and design around community choice aggregators as an example, I feel is really designed when they were a relatively small portion of load.

As we ask ourselves do we have all the right structures in place if community choice aggregators or direct access providers are providing up to 80 percent of the load? Are we confident that there is the sufficient structures in place to attract the capital that we need to make those investments? I think those are things we have to study as we consider this alternative. I'm not sure I'd have a suggestion today for the magic test that we should apply, but they should certainly be considered.

CHAIRMAN WEISENMILLER: Oh yeah, well just following up on that point for a second. You know, Marcel showed the chart of the ESPs vaporizing back during the crisis. And a lot of those folks got into this business when there was excess supply in the late 90s. And suddenly when we got to a crisis, I mean god bless PG&E went into bankruptcy and Edison was certainly on the edge of bankruptcy. So the fact the ESPs, which were going to be capitalized shell companies going like that, like a snowflake in Sacramento in August, is not a big surprise.

But this is an easy time to be in a the power business, but it is a pretty brutal business that can flip

on people. So again, how do we prepare ourselves for that type of contingency?

COMMISSIONER PETERMAN: I don't have an answer. (Laughter.) I do have another question, but does anyone else have an answer?

MR. MALNIGHT: I don't have the answer either except to just say I think it's the right question to ask and it's the right question to make sure we have a strong answer on before we go too much further.

PRESIDENT PICKER: Oh, you weren't suggesting that, but I got there somehow. I don't know.

COMMISSIONER PETERMAN: So my question is, it sounds like you're in general agreement and other parties as well, that the first or one of the first things that we have to address is exit fees. What's the second from your perspective?

MR. SKOPEC: Well, I don't know if it's just the second. I mean, there's the second and the third and the fourth. I mean, so I do think that you have to make clear the planning part as we talked about. You know, who does the new build, who's going to have that responsibility? And I think that has to go in conjunction with, as I talked about earlier the procurement models, which you're doing right now with the IRP. But we'd have to again address this question, do you have the authority over all of these

potentially new entities.

So I think that the planning and the procurement process, and the authority for that procurement process probably has to be addressed together soon after you figure out the exit fees.

MR. MALNIGHT: I guess I would just suggest, I think the next order of business as I sort of mention in my remarks I believe, is we have to get very clear on our priorities and what we want to accomplish, what we're willing to trade, and what we're not. And what we're willing to make sure that as a state we're going to stay strongly committed to. Because no matter what answer we have or no matter what answer we decide to pursue, that commitment is what's vital. That commitment is what provides market actors some sense of predictability on the marketplace.

So for example, in a Texas kind of model there's a strong commitment to let the markets resolve capacity needs for the future. The markets will provide the types of resources that are going to get billed. If you're not committed to that and you come in later and say, "I'm going to now apply a mandate, because I'm not really comfortable with high market prices driving capacity editions," you kind of undermine the whole model. So I think it's important upfront that we know what we're committed to and

what we're going to stick to throughout.

And then from there you go to planning models, pricing models, and I think we can all come to a conclusion about what's right for California.

COMMISSIONER MCALLISTER: I want to get back to Commissioner Peterman's question about what you anticipate might go into the rate base. So I think there's a wide variety of ways we're going to get to our reliability goals and our carbon goals. Some of them cost more than others and I guess I'm wondering, at this juncture what do you -- do you think there is an undue incentive to invest in hardware that builds the rate base versus looking for other kinds of solutions to this? You make money on the rate base, so do you --

MR. MALNIGHT: Yeah.

COMMISSIONER MCALLISTER: -- so these investments, are you going to tend towards bringing a big storage, a big charging, all that kind of stuff versus looking for portfolio, some of which is more on the procurement side versus the rate base?

MR. MALNIGHT: So I would just say I think there's counter, as a utility there's always countervailing forces that balance the incentives we currently have to invest in rate base. And one of the primary ones I would acknowledge is affordability for our customers.

So at the end of the day all the revenue that's collected, goes out to our customers in the form of a bill that has a PG&E logo on top. And as a company our objective is to drive long-term sustainability for the business and to grow going forward. So affordability is always an effective counterbalance. We already have an incentive today if we're considering an investment decision to look at all the sources that could meet that need including ones that wouldn't be a utility owned asset.

We've actually run pilots already in our system looking at deploying our existing energy efficiency programs and demand response programs to potentially offset the need to invest capital and substation capacity. Those things are there, because the opportunities to invest, you know, it really just shifts us to a different place to invest those assets. It allows us to deliver more benefit to customers for the same price. It doesn't necessarily mean our business is suddenly not an attractive place for us to invest.

So I think those counterbalancing forces are here today and at the same time we're regulated by the California Public Utilities Commission, that continually looks at the decisions, the investment decisions we're making. And can provide that kind of oversight. I don't think that tension that you mentioned at all inhibits our

ability to do innovative and new things.

MS. CHOI: Yeah, I would agree with that. And certainly, in our latest GRC that's before the Commission today we actually proposed a deferral project, so where we could see the testing the idea of utilizing distributed energy resources to defer traditional utility investment. I would say we're in the early days of knowing whether they can be utilized for a grid asset. And what we do have is knowledge of how utility assets perform, the transformers and wires that we've relied upon for the last 130 years.

And so one of the things we talked about in our distribution resources plan in using distributed energy resources as a grid asset, is that availability. The dependability and the durability of those resources on the Grid, so we're not going to do a 20-year pilot. We're going to start moving forward and utilizing those resources where we see an opportunity and at a cost that helps benefit the overall customer.

PRESIDENT PICKER: So, we're at our deadline here. Is there anything you'd like to say, Mr. Orans?

MR. ORANS: I'd like to respond just a little bit more to Commissioner Peterman's question, because I was taking notes during this whole thing. I think I summarized, I tried to make a list, anybody correct me if you think this is wrong.

I think there were four -- and I don't know if this is the order, but this is the way I wrote them down -- so rather than just call it exit fee, I think it's kind of a coming and going rule. And the coming and going rule is really critical for two things: financing and planning. If you don't have the coming and going rule neither side can figure out the financing or the planning and none of that stuff will get done.

And I think this provider of last resource also was a big discussion. So those are two, I don't know what ones are first.

And then the third one, I think and I'm going to call these two together, they might two separate: rate design/functional unbundling. They're functional unbundling of cost in the monopoly services, so that we know which ones are variable and which ones are fixed, which ones are non-bypassable charges. I think that's teed up really nicely in the staff whitepaper.

But those three or those four, Commissioner Peterman, I thought were all mentioned in the utility presentation.

PRESIDENT PICKER: Okay. Thank you.

And we're going to take another 15-minute break. We're in the end stretch here, so I hope we'll see you all back.

(Off the record at 3:02 p.m.)

(On the record at 3:21 p.m.)

PRESIDENT PICKER: Ken and folks are having a lot of productive discussions in the hallways and the alleyways, but we need to keep on schedule here. You know, the beer starts to flow right at 5:00 o'clock.

Mike? Mike Day? Mike Day, take your seat and take a couple of people with you.

CHAIRMAN WEISENMILLER: Come on, either sit down or get out of the room, but we're going to roll.

PRESIDENT PICKER: Okay. So I'm going to turn it over to Jan Smutney-Jones who is going to lead this next panel of illustrious speakers, some of whom we've already heard from. But who will actually be telling us what they really think.

MR. SMUTNEY-JONES: You may not want -- thank you very much, I'm Jan Smutney-Jones. And I'm with the apparently the Legacy Cost Association based on previous conversations. But I wanted just to (mic cuts out) -- California's current regulatory framework, I think portions of which developed under circumstances that no longer persist, it is ill-suited to govern today's electrical services industry. And the Commission went on to say the state's current regulatory approach is incompatible with industry structure likely to emerge in the ensuing decades.

Now, these words of wisdom were uttered in April of 1993 in the so-called Yellow Book that led to the original restructuring. Now, I think it's important to remember that, because there is a pretty long history here to be remembered. I sort of feel like I'm Rip Van Winkle. I fell asleep listening to conversation about choice is good, embedded costs need to be recovered, and who pays for a future investment in the Grid. I wake up 25 years later and these same issues are back with us, so I think that there are some things here that are not new at all.

And there are some issues that are actually much more complicated. We do have technology. We do have innovation. There are more players now talking with respect to this customer choice market than there were back in the mid-90s. But I think when we started out this morning, Commissioner Weisenmiller indicated that the primary responsibility for the Commissions here, both of you, are reliability for all customers and access to electrical services at affordable costs.

And that was followed by President Picker, that the problem we have right now is there does not appear to be any coherent plan in terms of how we pay for those costs going forward and frankly how we continue to pay for the costs we have in place. We are sort victims of our own success. I don't think anybody -- I started doing solar

work back in literally 1980. I don't think anybody foresaw at that time we would have 10,000 megawatts of utility-scale solar and another 5,000 on the roof. And we have a wind resource that is currently providing about one-third of the RPS required.

So this has been a great success, but those are embedded costs and most of those secured under contract. And I'm sure you'll be shocked to know that we expect that those contracts will be honored, so when we get into a discussion that somehow these may be threatened by a new, more robust model we get a little concerned.

You know, going forward we have a similar problem. In order to meet -- we have all these resources, but we have an afternoon ramp that's currently met with gas resources, frankly. That's most of what we use for the ramp. That's about 120,000 GWh a year, sixth largest economy, accounts for about 1 percent of the criteria pollutants. So it is a relatively clean system, and again it was built to provide reliable service, clean service to the people of California.

So going forward, what does that look like? Those gas plants are eventually going to start coming off, offline. We've obviously got the once-through cooling plants, but what does the market structure look like that's going to be able to roll in DER storage to provide those

reliable services? And most importantly, what is that actually going to look like? Who is ultimately going to be accountable for making sure that everybody's got sufficient resources to keep the lights on?

And so these are all big issues. The simple fact of the matter is there's a lot of talk about innovation here driving this issue and that may be true. That may be a big part of it, but I also think it's rate making, frankly. That's what drove NEM. That's what's driving in large part community choice. So I think all of this again, is bringing forward a number of issues that we had a struggle with 25 years ago. There's lessons to be learned there.

I'm going to let the rest of the panel talk, and I may have a couple of closing comments just in terms of trying to pull some of that together. But at any rate, we've got a great panel here of people who are seasoned experts at this. I've just asked each one of them, when they speak, to introduce themselves because I think there's some people who are probably listening to this on the Web who won't necessarily recognize their voice.

So with that, I'm going to start with Sue Tierney.

MS. TIERNEY: Good afternoon, as I mentioned earlier I'm Sue Tierney from Analysis Group. I was a

Commissioner in Massachusetts at the time restructuring was being anticipated. I was at the Energy Office, before that involved with long-term plans and was at the Department of Energy. So for about half of my career I have been in state and federal government and have now been a consultant for many years working on a number of the issues that you are pondering. Pondering and being hit with a fire hose to deal with.

So I want to make five points. The first one, thankfully has already been made by many people today and that is that this is truly déjà vu. The combination of high prices and technological change really enabled people to start leaving the system effectively, 20-25 years ago. And those were large industrial customers. It's some of the same kind of things that you have been talking about. So there was motive and opportunity for introducing the concept of choice.

Number two, what happened at that eve in which technology and economics were pushing for change? Of course, we know at the wholesale market level there had been a number of things going on to open up transmission access on utility systems on an nondiscriminatory basis. There was early RTO formation in a number of parts of the country. There was generation competition. There was the unbundling of rates that we've just heard about today. And

at the retail level, 14 jurisdictions, 13 states and the District of Columbia now have retail access.

Many, many more have of course the kind of retail choices that we've been talking about today associated with being able to opt out on different technologies and have some other thing besides a utility's plug providing juice to a customer. But these 14 jurisdictions are principally wires companies, wires only companies, although that's not the only way that they've been restructured. And some of them have wires and generation service. Each part of the country that has opened up for retail choice addresses resource adequacy in a little bit different way. And very different than California, in fact.

And so these many designs, I am going to draw from those many designs of introducing choice and competition to tell you a couple of things that I think went well, and things that I think less well across the other states that have been doing it. I'm not going to tell you about California, you know that way better than I do.

So what worked pretty well eventually? POLR service, pretty much everybody has been able to get access to electricity. The lights have stayed on except in California during your famous period of time. One of the things that worked well was addressing legacy costs. Of

course, we used to call them stranded costs, but things are different here. And so having that be done and addressed and people could move on beyond that was a very effective thing. Those are collected through nondeposit by (indiscernible) bulk charges and they had to deal with a lot of very tricky cost allocation questions. You know those very well.

It's also worked well, there has been nondiscriminatory access to the wires for the most part. Lots of investment early on, especially in electricity generation infrastructure. People have had the ability to switch and now about three-quarters of the load that is eligible to switch has switched at some point and time over this period. Lots of competitive suppliers and finally, the last thing I'll mention is that in the states with retail choice, security constrained economic dispatch has been a real jewel in making sure that there is a liquid market.

So what hasn't worked quite so well? The states that did a package that was trying to deal with the different elements at once, I think had a better chance than the bolt-on strategy, who said bolting things on to existing structures and evolving piece meal. Early on public education about customer options was not that great across the states. Texas is the one that I think really

did a good job on customer education, because everybody had to choose a supplier rather than stay with the incumbent.

Third, lining price signals between the wholesale. What we know about pricing and the wholesale level and then what customers see in their bills, that has not worked that well in very many places. And so there's a big gap still today between the signals and incentives that are being sent by retail rates.

There has not been a great development of products in wholesale markets associated with CO2 and people are struggling with that now. I think that there has been political fatigue every time -- or let's see -- fatigue with the choices made about the design of the market structure whenever price volatility has hit. And there's always a finger pointed that that was caused by competition, except in Texas of course, to a lesser degree.

Finally, the last thing I'd say on what worked less well as an observation is that the states that started on the competition horse, including retail choice, I think said they wanted to live with market outcomes. And now, fast forward to this time today, they're not so excited with what the market rendered. And that's because of a number of the things that I said.

And so let me just say looking ahead, I'm going to just tell you just a minute about Massachusetts.

Massachusetts was a state that went a wires only, the divestiture of all generation, set up a regional six-state RTO market. And there was a very strong commitment to relying on markets for a variety of things: reliability, generation mix, etcetera.

There is not impatience in Massachusetts or the other New England states with what the markets have wrought. The markets have wrought natural gas generation and renewables driven through short-term REC agreements and Massachusetts is making its way on satisfying its RPS requirements. But there is a real concern that they're not moving fast enough given the long-term greenhouse gas emission goals. So they, like you, in that state have an 80 percent reduction target by 2050.

You're probably even beyond that, but they're not seeing how they're going to get there without long-term contracts. And what do you know, they're going to the utilities mandatory long-term contracting by the electric utilities for offshore wind, for hydroelectric power from Canada. There will be above-market costs. They will be put on non-bypassable charges. So generation is coming on to the wires charges as a deliberate matter of policy choice. And they will be facing all of the things that you're facing and they'll probably be watching you, because you're starting almost at the other end of that. You have

long-term contracting procurement and now they're starting that after having ridden the full retail access wires only choices.

Let me stop there and I'm really looking forward to answering any questions.

MR. SMUTNEY-JONES: Ren?

MR. ORANS: Sorry, my name is Ren Orans and I'm Managing Partner of E3. I have three points and a couple of slides. And these three points are all wrapped around three years ago my oldest son, after graduating from college he came to my wife and I and he said, "I'm going to an Ashram in India. And he's been there for three years and we've been kind of studying some of the stuff he's been looking at. And it's given me a little bit different, longer-term perspective on California energy policy.

So the first thing I want to emphasize is this a righteous pathway. So it is something worth doing and I've been in Hawaii, I've been in New York, I've in the UK, I've been in Germany. And a lot of the stuff we are doing is new and innovative and creative and so we need to hold on, when you think about the restructuring make sure all those things you can kind of hold on and keep it together.

The second thing is it's hard. And if our key goal is demonstrate then it has to be hard. And so make sure when we put together, as Sue said, this new model --

and I do think we need a new model -- that it still demonstrates leadership. But it's also perhaps more applicable to other jurisdictions than only California, so it's more spreadable and more transparent.

The third one, I think is it's got to be more middle path from command and control and market. So it's going to have some of those. It's going to be, I don't know -- I think it was Caroline who said we have a hybrid market, we're going to end up with a hybrid market. She outlined some of the two bookends, but I think somewhere in the middle is a mix of things that California could go forward with.

And I have a couple of slides that I thought -- I don't need to go through these, because I think the Utility did a nice job at covering these. These were -- if Utility didn't answer these questions, I was going to fill in some of the details I thought behind them. But they've covered the majority of what I think are the challenges here on the scorecard. And I've talked a little bit to Nick Chaset about this. I think thinking about that OIR as a roadmap is a useful concept rather than -- and I think it was you Commissioner Peterman who said, "What's first, what's second and what's third?" And maybe even what are the triggering events that push you from one to the next. And we're already at -- and President Picker, you said we're

already at a bunch of those things already, so we have to deal with them. Some of them are legacy. Some of them are right in front of you. What's three years? What's five years and what's after?

And I think using the pathway data to look at that and ask ourselves how are they going to get done is a nice way to frame all of that. So that's one concept.

The other one is -- and I don't want to go through all this -- but we've spending a lot of time in New York trying to figure out really what Audrey was on to initially in REV. And I think she had a number of really strong points. And the first one is, and all I did in this one -- and this applies to California, it applies to Hawaii, it applies to New York, it applies to the UK. So all places that are aggressive energy policy and doing lots of stuff and by the way, the UK has more DER than we do. They have more distributed solar that the national Grid can't see than we do, which was just -- you know, it's unbelievable.

So if you look at this, just on the bottom of the thing is a DER market. And we're going to have a growing rich DER market. Whether we like it or not it's technology driven. It's customer choice driven. It's going to get bigger. So anything you build next will have to basically deal with a growing rich DER market. That's a good thing,

but it's going to have to accommodate it. And that DER market, some folks in there are going to want to be able to go directly to the wholesale market. Some DERs will want to go through the utility. Some will want to go through third-party aggregators and they can be direct access or CCAs etcetera.

In all of these pathways, the only thing I wanted to make about this diagram is the existing BAU model structure now is extremely complex already. So the issues the utility brought up, I don't want people to view that as bare requirements for any new model, but you already have them in the existing model. You have to rebuild your existing model anyway and all those criteria that Steve brought up at the end, they have re-rebuild into the existing model. And so we're kind of at that phase of rebuild your whole car from the beginning or buy a new car anyway. And start with the existing model, because it has some really good things in it and build on top of it. Not bolt on as Sue said, but a holistic model that works for all of these cases.

MR. SMUTNEY-JONES: Jon?

MR. WELLINGHOFF: Thank you. Good afternoon, President Picker, Chairman Weisenmiller and Commissioners. I'm Jon Wellinghoff and I'm the Principal in a new consulting firm, Policy/DER.

I don't want to come here today and pretend that I can tell you in California what you need to do in the future. I just want to give you some of my experiences of seven-and-a-half years of which was with the FERC, four-and-a-half years as the Chairman of FERC. And what I learned in trying to expand and make efficient the wholesale energy markets in this country over that period of time.

And I think the experience there is somewhat transferable although every state has their own unique characteristics and experiences and requirements and policies. We recognize that at FERC and a number of the orders that we issued like Order 1,000 included things like state policy that was to be included in regional transmission planning that your CAISO does here and that the other ISOs do.

And then talking about Audrey Zibelman in New York and what she was trying to do there with the REV, I think she was very much informed by what she had done at PJM. She actually ran PJM for awhile, so I think she took that experience and translated it some, so I hope that I can translate some of those experiences to you. And if you have any questions about that we can talk about it and I hope to answer most of your questions that you've got for this en banc panel as well.

And then at the end I hope to give you two sort of ideas of things that you might want to consider where you can move forward in two areas that I think could advance the issues of customer choice, because this panel is about customer choice. And we're not going to stop it. It's happening and it's just going to continue to expand, so we need to figure out how to work with it in ways that are constructive and do meet the policy goals of your state.

One thing I thought was interesting though that I wrote down here while I was taking notes from the previous panel, the utility panel. One of the gentleman said, "Our investment model is to invest capital," and that's clearly what they do. Although I think that model does conflict, at least we saw at the federal level that it conflicted with what we needed to do with respect to making transmission investments on the Bulk Power System efficient. And as such under orders that went in place before I got to FERC, Orders 888, 889, 890 and then Order 2000, FERC of course put in place independent system operators. To ensure that there was an independent operation and planning platform that could break apart the conflict between the investment desire of the transmission owners and the operation and planning on that transmission system.

I've written a paper regarding the potential of translating that model down to the distribution level. In fact, I see one of your white papers references my paper when you talk about models, various potential business models for utilities. I'm not necessarily recommending that business model for California, but I do think -- and I think the other thing that was said on the utility panel is that I think you do need to move rapidly to determine what is the most effective business model to meet your goals? And I think that's an essential thing to do.

So one of the things we did at FERC in looking at things like distributed energy resources, we were concerned about how to get those into markets. And how to ensure that they could be robust and incentivized in the way of not providing something that they're not entitled to. But ensuring that they are given the appropriate compensation for the value that they provide to the market.

And the one quick example I would give you would be Order 755 where we recognize there are certain types of behind-the-meter resources such as batteries, even batteries in electric vehicles. And demand response that could provide something called regulation service, which is the fast response frequency balancing service on the Grid. And we recognized that those resources could do that job better than the traditional utility resource, the

combustion turbine. So we put in place an order that said to the ISOs in those markets where you have these resources available to you, you must recognize the value that they provide and compensate them appropriately. And so that was an example of, in essence creating the market by recognizing value.

I think you can do the same thing here in California with respect to the array of distributed energy resources that are going in. And I think right now they seem to be going in, in somewhat -- I don't want to say haphazard, but maybe I should -- they seem to be going in, in somewhat of an uncoordinated fashion in the sense that they're not driven by a specific market signal that recognizes how their aggregation collectively could drive for you, value into that market. And so if there are ways to do that, and again I'll suggest a couple of examples, if there's ways to do that I think you ultimately could then provide for competitive providers. Whether it be CCAs that I think are potentially a model that could take this up, or the energy service providers that are providing direct access to certain customers, those entities potentially I think could aggregate for their customers distributed energy resources in an effective way. And provide those values into various markets.

And so let me talk about two different examples

that I hit upon in doing some research for this panel. One would be the paper that was done by the CEC, I think it was in July of 2016, done by the staff of the CEC. A white paper on the South San Joaquin Valley distributed energy resource deployment area. There was an analysis done, first by a consulting firm Navigant and then a white paper done by the CEC staff that indicated that there was as much as $300 million to be saved in the South San Joaquin Valley by simply -- not simply, but it is a task there's no question, none of this simple. I never realized how difficult energy policy could be.

But ultimately it is something that could be done to defer transmission investments and defer other investments that would be made ultimately in a TPP transmission plan of the ISO that could substitute for those investments. And ultimately allow you to put in distributed energy resources in the community and do it in a very effective way. And this can be done under FERC's Order 1000. In fact, if you look in footnote 563 of that Order it says, "As we stated in the proposed rule, the Commission has recognized that in appropriate circumstances alternative technologies, which would include things like distributed energy resources, may be eligible for treatment as transmission for ratemaking purposes."

So ultimately, if you could figure out how to

partner with some entity to develop a DER aggregation program that could be bid into the CAISO as an alternative, it could in fact be paid for as a transmission alternative. So you have one revenue stream to do that.

And then let me give you the second idea and then I will close up here. The second one would be in Jack London Square, this is at the distribution level and this is not at the transmission level. You wouldn't be using FERC Order 1000. You would, in essence, be using the powers of the CPUC and the authority that you have, to have DERs at Jack London Square substitute for a peaker plant that's been talked about to be retired for a long time. Ultimately to retire it and instead put in DERs that would substitute for it, but you'd have to value those DERs and determine what in fact would be the market payments that would be made.

So in conclusion, really what I'm suggesting here is you look at market structures in ways that you can put in place to ensure that these types of resources can be adequately valued and compensated. And if you can do that and figure out which partners you can play with to do that, which business models you set up whether it be for the CCA or whether it be for the ESP or whether it be for the utility that I believe is the way to most effectively get these resources deployed to get to your goals in the state.

Thank you.

MR. SMUTNEY-JONES: Last but not least ever, is Ralph Cavanagh.

MR. CAVANAGH: Mr. President, Chair Weisenmiller, colleagues and Commissioners, I was originally cast on this panel clearly as the unrepentant and unreconstructed skeptic of retail electricity competition. But it turns out that today is about much more than that, in which I rejoice. And I've decided that my principal role at the end is simply to cheer you up. (Laughter.)

The fundamental question that is posed by the proceedings today is whether California can sustain its clean energy leadership, its drive to de-carbonization, while ensuring affordability, honoring equity and promoting improved reliability across the system. And my answer is an unreserved yes.

And my hope is that you will emerge from today both with that confidence internally and the ability to project it, because the one thing that can hurt us now is regulatory leadership that displays a lack of confidence in the path forward. And we have seen this in the past. And I think my role as your historical memory is to brandish something I can't believe hasn't appeared before now today. It's not -- your staff report is as styled a white paper -- it is an extraordinarily constructive contribution to

today's conversation. I'm going to be brandishing something with a blue cover, which the Commission to my horror released on Earth Day 1994.

And this is what happened a year after the report Smutney read from and this was some of your predecessors in an unrestrained embrace of retail electricity competition. But in something else, which was a fundamental lack of assurance on confidence about the future of regulation. And about the capacity of regulators to do anything more than genuflect before what the Blue Book calls the "genius of the marketplace." In face of concerns that to do other would be to risk being branded as soviet-style central planners. (Laughter.) A term I had not heard at a PUC forum for at least two decades until this morning.

It allows me to serve my ritual function of reminding us all that there is a distinction between a soviet style central planner and being a regulator in the public interest, which is emphatically what all of you are. What happened as a result of the Blue Book, the embrace of retail competition and the fundamental lack of regulatory direction on the future of the electric sector, was a collapse of California's investment in electricity procurement and electric system infrastructure. A collapse driven as much as anything else by simple uncertainty among the critical players about what their role should be. And

about an uncritical reliance on the genius of the marketplace to do everything that regulated utilities and their partners had done in the preceding decades.

We should not risk doing that again, which does not mean that we embrace some kind of all-encompassing monopoly model. That 22 hours after the Blue Book it's a new debate. There is new technology. There are a host of new options and choices. I appear before you as a celebrator of choices, but a continuing skeptic of what has been called retail electricity competition. And by the way, I should make clear I don't think community choice aggregators represent retail electricity competition certainly as it was conceived in the mid-90s.

In fact, some of you will remember that community choice aggregation was offered as an alternative to retail competition for the residential sector. And as a way of ensuring that a competent central portfolio manager would remain in place for residential customers if the system completely deregulated on the retail side. I also don't think that rooftop photovoltaics are retail electricity competition. Nor do I think that those who are installing them are issuing some kind of a blanket, no confidence vote in system-wide procurement. Or that they are threatening or intend to disconnect from the electricity Grid.

And the other myth of the mid-90s was that a

utility death spiral was imminent. That massive de-connection was imminent. That the historic natural monopoly over distribution service and the public interest justification for it was somehow gone. I think we have learned since that that was flat wrong. And one of the tools that you continue to retain, for those investments you think need to be made on behalf of the entire system as Sue Tierney has pointed out, is to continue the practice of assigning charges to distribution on a volume-metric basis. Which no customer bypasses, which appropriately allocate across the system the costs that you determine are appropriate for the system to bear even as you open the way for new forms of choice.

But your fundamental tools: the non-bypassable charges, the ability to assign procurement responsibility, the ability to assign cost allocation, the ability to set rate design, they're in your wheelhouse. You still have them. As are your capacity on the Energy Commission to establish energy efficiency standards, your capacity on the PUC to oversee energy efficiency investments, which remain our highest priority resource in California. And which probably deserved even more emphasis than they have received so far today.

Where this leaves me is that as you look forward and as you think about what needs to be done next, I

encourage you to do a couple of things. First of all, do spend some time looking carefully at the record in other states of retail electricity competition. I've submitted for the record in the manner designated by the President the study I coauthored last year of the record of retail competition over the past decade with special focus on the five states that have had the most experience with it.

I want -- and my friend Phil O'Connor who is in this room, although he disagrees with every word of the study was kind enough to review it. What I would say about the findings from my perspective, look at the Texas market carefully in terms of the actual products. Because those who say Texas makes retail competition work need to understand yes, there is robust commodity-based competition. There is promotion of increased electricity use with an efficacy and an eloquence that you can scarcely believe.

My favorite products are the all you can eat rate, where you pay based on the size of your house rather than on how much you use. And the special penalty and reward systems where if you don't hit your monthly kilowatt hour consumption target you're docked. And if you beat the target you get a special rebate check. And if you'd like to see products like that in California, if you think that somehow that is consistent with de-carbonization, equity

and all of the other values we've been discussing emphatically including electric system reliability, then I guess have it. But I can't believe any one of you wants that.

Look carefully at the products that have actually emerged in the retail marketplace. And at the same time, and here's my concluding comment in terms of structure, we talked a lot about resource planning, resource allocation, cost allocation. I submit that in the Commission's IRP process -- and I think I heard Geof from Sonoma Clean Energy acknowledge that he's fully prepared to do this -- you're entitled to ask each of the community choice aggregators for their resource plans. They'll give them to you.

If you don't think those plans are adequate, if they can't show you that they are meeting the same standard that you are imposing correctly on the utilities, I think you should be directing additional procurement. And charging the customers of the systems that are not providing that procurement themselves.

Let me leave you with a final thought as you think about how to frame what we're about here, how to describe the choices going forward. I wanted to quote from Steve Wolens who's a former Texas lawmaker. He was quoted recently in an Energy Wire. He said, "Everybody's become

their own taxicab company and everybody's become their own hotel. And it's just incredible what's happened and now everybody's going to become their own utility."

And that put me in mind of a similar moment 24 years ago right after the Blue Book happened when I was in a debate with the retail competition enthusiast who said everybody's going to become their own utility. And I said, "Oh, come on. What's in that for my mother?" And he was ready for that question and his response was, "For the first time in history your mother's going to be able to hedge her own fuel price risks in the marketplace."

(Laughter.)

And if, as I hope that response generates a smile today, because at the time it generated -- it was widely felt he had scored a telling point. If it cracks a smile today let's be sure we don't make that mistake again, even as yes we embrace all of the positive aspects of the improved choices, the improved technology. And the vital importance of linking all the parties who have testified today as partners going forward in a clean energy future, not as antagonists and adversaries. Thank you.

MR. SMUTNEY-JONES: Thank you, Comrade. I think you've sufficiently cheered up the Commissioners for them to ask us questions now.

PRESIDENT PICKER: So a ringing endorsement of

our role as a feudal state and the divine right of Commissioners. (Laughs.)

Jon, one of the challenges that we face, as we start to look to replacing traditional Grid planning with DER markets, is that everybody seems to be unable to agree on which of the different DER assets best meet those needs in that system. So all of our proposed DER projects seem to have disappeared simply, because everybody thinks that they're the people who ought to be preferred in terms of providing those services. So we're not making as much progress as we thought and I'm not sure that they're having the success that they'd hoped to have in New York either. Do you have any thoughts on this?

MR. WELLINGHOFF: well, again you've got to have some kind of structure that allows for people to see rational value. I mean, and you can look at PGM, for example, where we set up demand response markets there that ultimately brought in 15,000 megawatts into that market. But I understand --

PRESIDENT PICKER: A lot of that was the teamsters.

MR. WELLINGHOFF: -- what you're saying though. You're ultimately still in a situation where you've got to have somebody doing the planning and I completely agree with that. And that planning has to be able to designate

through enough data analysis, and I know you're doing a lot on the analysis of distribution system planning here in California way ahead of everybody else on that. That you can target and aggregate areas that will in fact, achieve your goal. So whether it be the incumbent utility, whether it be some independent entity, whether it be the Commission there's got to be somebody who can designate and determine that. And then figure out through perhaps a bidder and RFP process to see if you can get third parties to come in and aggregate distributed resources to in essence meet those goals that you've set up to the planning process.

PRESIDENT PICKER: Okay. So for anybody here, one of the challenges that we face is that information on consumers is sometimes down to the individual building, become very important in terms of third-party providers and for planning for a variety of new tools.

Yeah, we've heard the importance of maintaining confidentiality for many customers in the system. So the incumbent utilities do a pretty job of protecting the customers, but not such a great job in terms of helping people who might otherwise be able to provide alternative services, get access to that. Has anybody spotted any successes or have any thoughts on how we'd begin to do that better?

MR. CAVANAGH: Commissioners, I first want to

begin by acknowledging my gratitude to you, Commissioner McAllister and others, for continuing to press on this point. We obviously tried to start on a solution with AB 802, which a number of us worked on. I will say the only customer that talked about confidentiality today, I thought this was telling, was the CLECA representative Nora, and I mean for proprietary industrial processes that's a different problem.

But for buildings, commercial buildings, residential buildings where we're trying to aggregate data to get insight into energy efficiency opportunities and other system needs I am daring to -- you didn't hear that from anybody. You didn't hear anybody say --

PRESIDENT PICKER: No. But we hear it in other places as well.

MR. CAVANAGH: We do, but I thought it was telling that we didn't. And I am taking from that, since my organization is putting in an enormous amount of effort into making this happen, making it work, making sure that 802 works as planned and then going beyond it, I think we're making progress. And I don't want you to give up. That constructive pressure is needed.

And I'm seeing -- the other place where I am seeing hopeful signs is in California's academic sector, where people are figuring out how to aggregate that data

and make it useful. You both know some of the most effective and able, let's just keep supporting them.

PRESIDENT PICKER: Other sources of inspiration in terms of facts as to data?

MR. CAVANAGH: Or at least encouragement.

MR. WELLINGHOFF? Well, I know that at times that third parties who are trying to aggregate these distributed resource and optimize their value need things even way beyond just simply what the usage is for energy efficiency. But you need to have load curves and real detailed usage over time varied (phonetic) usage as well.

And to the extent that you can set up a system again that allows for third-party entities to aggregate those facilities to provide those resources into a distribution or a wholesale market, then those entities should have relationships with their customer. And the customer then should be able to release the data to them via the utility just like we do for solar when I was at Solar City. It should be sort of a similar situation I would think.

MR. ORANS: I think one interesting example is the telecom industry. So when they broke up the Bells and all the customers then were basically free they took the billing away from AT&T and the incumbent Bell. And so then what you had is a couple of companies across all of North

America doing all the billing for everybody. They put a logo on the customer.

So depending on what you decided to do with a provider of last resort of a default auction etcetera, you had to also think about what do you do with billing? And if you move billing then to something else then billing would have standardization through anybody who would have some kind of access. And I don't know whether that would be, as Ralph said, available to certain groups of customers or from certain groups. Or would be more of a green button, turn it over kind of process.

MS. TIERNEY: Can I just flip your question for a minute? One of the things that I think might be helpful for people to think about during this process, as you're looking at the focus of data availability. I think it's a problem and a challenging situation across the country in states with a lot of penetration of distributed energy resources where the utility doesn't have visibility about what's going on either. Because of metering or because of the information that may not be available about say a solar panel on a roof and how much output is going to be happening. So they see the net of that into the system, but not necessarily what's happening, so thinking about data on that other side might also be helpful too.

COMMISSIONER MCALLISTER: I want to jump in here,

because this runs the risk of getting a little wonky, so I want to be just --

MS. TIERNEY: Oh, we would hate that.

COMMISSIONER MCALLISTER: -- yeah, or inaccessible I guess is really the word, but so I'm in exactly that situation. And many, many people are, so I'd like to do more energy efficiency. I can't crunch the numbers of my -- I don't have the complete picture, because there's no automation in terms of combining these different data sets. So all I can see is my net doesn't help me any.

So I asked a similar question in the last panel and got the utility perspective on the answer, but if we really want to enable the third parties to target and do effectively, efficiently and with low transaction costs identify those demand side resources or just distributed resources they have to have sort of a leg up of understanding. They can't be blind just knocking on doors, right? They have to have some resource that directs them, just *a priori* with the marketplace that they can serve effectively and efficiently. And I guess I'm looking for understanding the privacy issue and those concerns. I guess I'm looking for structural solutions to that problem, such as that in Oregon. And there aren't a lot of models to choose from here that really get the job done, but I think that's part of our big challenge. And I think we

need some ideas.

MR. CAVANAGH: But Commissioner McAllister, I wonder if it wouldn't be possible also to the extent that there is just residual unwillingness to have anyone other than the utilities serve as the custodian of the aggregated data, I wonder if we thought enough about partnership models? The utilities, I mean we have all kinds of ways in which the energy efficiency programs have the utilities facilitating action by third parties. They don't monopolize the services in any way.

If the issue is simply making sure that the data are curated and that they are in the hands of someone who at least has the maximum confidence and the maximum number of players about absolute security, maybe there is a way. And I'd just encourage us to think more about it. Of having them, yeah sure they continue to do that, but they are working with third parties. They're not trying to perform the services with those data. They're not trying to figure out all the clever ways to use them.

And the best example I can think of, that's effectively what utilities have done with OPOWER for a long time where they've got a third party who has access to that data. Thinks up interesting things to do with it and provides it as one of the energy efficiency services on the system. I would think we could do a lot more with that.

COMMISSIONER MCALLISTER: Yeah, and we could build on that to actually sort of deliver a deep array of services, a wide array of services based on that knowledge. You know, right now it sort of stops at the peer pressure level, so we could go beyond that.

I guess just a point of information really for everybody here, so AB 802 as Mr. Cavanagh, you referenced that and the piece of that that we're talking about here is the benchmarking piece. And there are regulations that are most of the way through the pipeline that we've developed at the Energy Commission, which have one, required the utilities as of January of this year to provide whole building data to the building owner, so rolled up whole building data. So those systems are in place and a building owner for most of the commercial and family buildings in the state are now able to get their whole building data. That's huge.

There will be a benchmarking requirement that kicks in starting the middle of next year, July 1 of 2018, for commercial, a year after that for multifamily. And each building will have a time certain requirement to benchmark their building. A year after those deadlines there will be a public disclosure of at least some subset of that information including the score, for example, of each building. So you imagine you're floating over San

Francisco and you're looking at numbers floating on buildings. And you're a building owner and that provides market relevant information.

So division long-term is that we take those kinds of tools and build on them to offer more targeted programs to those sectors that need them. We identify where the savings potential is and we really focus in a much more surgical way on solving the problems effectively and efficiently harvesting demand side and demand response opportunity.

So there is a lot of really, I would say positive progress on these fronts, but we need a lot more to really have a truly robust market that allows our buildings to serve as a much bigger part of the solution as at least I and many others I think, believe they can.

CHAIRMAN WEISENMILLER: Yes, I have a couple of questions. Sue, you mentioned how POLR has been generally successfully dealt with, what are the key elements of programs to do that?

MS. TIERNEY: I think Ren's answered this the way I would now, making it very clear who has the obligation to serve. And then in keeping that making it very clear under what terms and conditions you may leave and what your costs will be if you're a departing customer. How long you have to stay away.

In the early years of restructuring in most of the states, that had a wires only utility and divestiture of generation, there were transition contracts that allowed customers to stay on a rate for a certain number of years. Now, those are pretty much all gone. And so the norm is that you have to stay away for awhile before you can come back and if you come back, you come back at market prices for your commodity.

I do think the other element of it was the very careful cost allocation process that led to non-discriminatory non-bypassable charges, so that there was not a creation of an economic bypass. So to speak, encouraging people to leave, because of some distortion in the rate design. So that's one that I think is high on the list in terms of what I know people have suggested in how you deal with your legacy costs. That's clearly an important one.

CHAIRMAN WEISENMILLER: What about looking across the states in that context? What's been the most effective, efficient way of really promoting energy efficiency?

MS. TIERNEY: I think I would say making it clear who has the responsibility. In most of the states that have continued to keep an energy efficiency role as part of the restructuring process, the funding for that was created

as part of not a bypassable charges. And that money was either given to energy efficiency utilities such as in the District of Columbia, or have the obligation fall on the utility to do the programs. But then a lot of third-party contracting to deliver it.

CHAIRMAN WEISENMILLER: So just following up with Ralph, obviously. I think the two of us have had -- you know, looking at the California experience I think the three things that have been very important on the energy efficiency side are decoupling, providing the appropriate rate signals, and then obviously trying to get programs in place on utilities to replace generation with energy efficiency.

Going forward, how do we maintain those when we know like with the CCA model there's no decoupling at this stage?

MR. CAVANAGH: Yeah, I don't think the CCA model is a major challenge here. And this would be one of my rare points of disagreement with when this discussion came forward with the utility panel. There was a suggestion that somehow if you have a CCA managing your generation portfolio the utility can't manage your energy efficiency portfolio. I don't agree with that. By and large, the CCAs define themselves as generation commodity providers. You heard that. That's what they want to do, that's the

business they want to be in. They're not going into the energy efficiency administration business.

From my perspective we've got a very good partnership model. Obviously, utilities don't monopolize the services. They have an important administrative role. They work with a whole host of independent parties. And it's a model that's served California very well over the decades that it's evolved. I don't think we have to give it up. I think there's as the Commissioners, and the PUC Commissioners in particular have heard me say more than a few times, they're probably tired of it, there's a lot for us to do on measurement and evaluation.

And there, I think we can learn from some of our neighboring regions that are doing it better. And I know we're all working together hard to try to make it better. But I don't think we give up the model just because we've got some greater diversity in generation procurement.

COMMISSIONER PETERMAN: I do want to clarify that the current model does allow for CCA participation on energy efficiency. Marin Clean Energy, administers energy efficiency programs and so we are able to do that within the current construct.

MR. CAVANAGH: We are, although Commissioner Peterman, they are the only CCA that's doing it and they are not doing it for all of the efficiency programs in

Marin. So there's still a robust utility role even in Marin. And I think that's a good thing.

COMMISSIONER PETERMAN: I agree.

CHAIRMAN WEISENMILLER: Obviously you set up the obvious question of well, what are your recommendations on EM and V?

MR. CAVANAGH: There are so as we think forward as to how are we going to handle the energy efficiency resource in California, I do think this is an important issue for continued attention from all the Commissions. It's important also for efficiency standards. It's not just a PUC matter. It's an Energy Commission matter. And what I would want to say about that is that I think we find ourselves in a place where EM and V has just become too contentious, adversarial and cumbersome. Everybody thinks that. And the issue is how can we get out of it?

And for me, the model that I hope we'll continue to build on and we've started, is to rely more on what I would describe as a jury model where we get juries of experts modeled on the northwest regional technical form. We've got a California technical form now in place that is similarly structured. And we rely less on adversarial proceedings, an excessively contentious existing model, and we move more toward a system that is willing to rely also on peer review, on the experience of sister jurisdiction.

Sue Tierney's Northeast has done great work with measurement and verification. She and I know many of the people responsible.

This is the one thing from my perspective, we don't do particularly well, where we do have other regions that are ahead of us where we can learn a lot. And it matters simply to have Commissioners asking those questions, looking internally how can we do better? And talking to all the parties involved.

The most fundamentally important thing is to change what is now an adversarial process into a partnership model where we're learning together from things that don't work. And fixing it rather than constant games that that feel very much like a litigation-oriented EM and V, which is not the best way to do it.

COMMISSIONER PETERMAN: I will note on this issue for those who aren't with earnest following the energy efficiency proceedings at the Commission, that we've taken a number of steps in the last year to try to address these common questions and concerns. So we're currently considering business plans from the utilities, which are about certainty and programs around ten years of funding. But there are -- and incorporating things like embedded EM and V, having multiple stakeholder groups informing a process. And so there's a lot going on there.

But I use that as an example to say as we see a change in potentially who is serving customers, we will have to look at the fact that we have been making wholesale changes to some other parts of aperture demand side management. So in energy efficiency we're moving in the direction to more statewide programs, for example, more third parties. What does that mean if you have a majority CCA state or a departing load?

So it gets to this question about trigger points, which Ren raised, which is I think it would be important for us to look our proceedings and say what are the major actions we've directed that we're building towards? And we would like to have more certainty around how those scenarios well look differently if we're seeing departing load change. And so energy efficiency is an area where we are trying to do significant change. And so it will be helpful to think through that scenario about how might a ten-year business plan change if in five years we started to see the majority of L.A. load, for example, go CCA?

CHAIRMAN WEISENMILLER: Okay. And so I --

COMMISSIONER MCALLISTER: I want to --

MR. CAVANAGH: Just a quick one, I am grateful for all that you are aware of that are participating in all of those programs. If I could, my gentle suggestion though would be to think hard about whether the future of CCAs

need not affect the future of energy efficiency administration if, as I predict -- and we'll need to make sure this is in fact what evolves -- the CCAs prefer not by and large to define themselves in that way.

In that case your drive toward more statewide uniformity, toward getting more economies of scale if you will out of the programs, will I think be utterly unaffected by what we choose to do with generation procurement. And let's at least be open to that. In the northeast I would say that by and large we have retained, despite a remarkable amount of fragmentation in procurement of generation, a lot of uniformity in program administration for energy efficiency.

COMMISSIONER MCALLISTER: I want to jump in here, we sort of segued from the data topic into this. But I think the data topic is actually really relevant here too and it provides a lot of power to supplant some of the onerous EM and V we've got in place. And we can actually do a more performance-based energy efficiency program environment, because we have access to a lot of data or a lot of sort of a continuous flow of information that allows us to see how things are happening. And it allows us to be more flexible on program design going forward. And I guess, I think there's a huge amount of promise there. And that together with the technical forum, could actually

provide a nice environment that captures a productive and sort of positive relationship across the EM and V community and implementers. Rather than, as you say, have kind of an adversarial relationship that sort of comes across a little bit as second guessing. You know, after the fact. And I think that is corrosive as you say.

So I'm getting to a question here. What parts, you know we talk a lot about procurement. We've talked about energy efficiency. And I was the one who said "bolt on" at the beginning, right? And so I think that's kind of where we're still at and we haven't really sort of accepted the need to get beyond that approach, having sort of a room over here where energy efficiency is done. And then a room over here where procurement is done. And I think I guess my question then is what pieces of the energy efficiency enterprise -- and I'll open it to demand response too, they're both at the top of the loading order still today, right? -- what pieces lend themselves to procurement? And kind of this performance-based approach would have to be rigorous and all that right, and what pieces don't? You know, say low-income or something like that, where they really do need a program. But I think I'm interested in hearing your thoughts about what pieces of demand side could be procured?

MR. CAVANAGH: Hey, Commissioner McAllister, I

think they all -- I don't want us to give up energy efficiency as a resource in California. They all can be procured. Energy efficiency standards are in a special place, although we want them integrated with obviously the procurement programs. And that's been our special genius having them work together and not treating them as alternatives to each other.

But the IRP process that the PUC is overseeing is one that can continue to treat efficiency and demand response as a resource, can look across the entire system. Yes, there will be more entities involved in procurement of generation, but I hope you won't change at all your insistence that this is the top of the loading order. And this is going to be front of mind for the whole integrated resource planning process. I didn't think any of us signed on to change that.

COMMISSIONER PETERMAN: Can I take the questions in a little different direction given time? I want to talk about New York, so I'm going to admit when New York launched their docket a couple of years, I had some New York envy. Suddenly, we weren't the innovative children anymore. New York was where the action was and a very ambitious and impressive docket there. And now that there's been some time and we've seen New York go about really trying to do this groundbreaking work, I wondered if

those of you who are following that process more closely, could identify what are some of the expectations of that process that perhaps are going slower than anticipated or in a different direction? Because I think that's a sister state that we might be looking to as a model and it'd be helpful not to repeat any potential challenges they are running into, from your perspectives.

And Ren, do you want to start with that one?

MR. ORANS: Yeah, I'll answer it in two ways. So you can look at New York as it started with all the, what I'll call distribution retail access stuff. And then it morphed to much more like what you're familiar with was clean energy standard, which we are a way down that road. So but they get the benefit of us going first on that one.

So the big fight was, well are these all going to be auctioned RECs from NYSERDA, which is so clean for their power system it doesn't have a missing money problem on capacity costs and everything, all the operational, all the transmission, etcetera. Obviously you know what happens then is well what about the local job impacts etcetera? So they're probably end up with something akin to buckets and we know how that works out. So I don't need to tell you that story.

The DER one is more interesting, because Audrey's gone now. NYSERDA and the staff are still committed to the

vision. ConEd is already very similar to the DSO already. I mean, look at them. They're a network distribution company. They control all the flows up through to the ISO. Jon will know that as they're as close -- if you had to pick a utility in the country at the distribution level that's pure play distribution, but it looks like a DSO, it looks like ConEd.

Okay. Now, take Central Hudson, it's totally rural and it's saying, "Are you kidding me? You know, 17 functions in the DSP. We have a couple of cities. We'll do AMI." They filed their AMI stuff. "We'll do our dispatch of DER." And the roadmap actually that I showed you is kind of what we're working on them through the five utilities to see all right, if ConEd went first and did more of these DSP commercial functions -- and Jon will know, because this is partly about what his paper is.

What happens is Audrey's vision was you've got the utility core functions, say there are six or seven of them. And then if we have a big rich DER market let's add seven more functions. And those gradually move you more and more to commercial, right? Until you get so many commercial things that you do what Jon says is well it looks now like it's commercially doing settlement. And it's picking winners and losers and it's got its operations and it owns assets. And that's when it becomes really

messy and you have to either ring fence the wholesale 88 tariff or create a DSO.

And so we're trying to work through with the utilities actually what those trigger points would be in moving from one model, and we've created everything from a BAU cases all the way though to much more complex cases. And they're trying to figure out in each utility who they are.

I would even suspect if you asked the three California utilities or the MUNI publics as well, they all have different visions of that DSP model. We have like 17 functions that you would need and we've identified as emerging functions, core functions, and commercial functions.

COMMISSIONER PETERMAN: So is the expectation that eventually they will all do the same thing or do you see them ending up in end states?

MR. ORANS: There are exits all the way along that road. You know, rural areas and that DSO model probably just don't make that much sense and the densely urban, it fits much more.

MS. TIERNEY: Commissioner, can I add two minutes, because then I have to leave for my airplane in any event. Remember New York is unlike I think any other state in terms of its organic jurisdiction statute. They

didn't restructure based on legislative action and they can do things of a whole cloth in a way that very, very few states can including California I would put into that bucket. And the resource adequacy in California is so different than in New York. And so I think that that's an overlay that really you want to pay attention to when you're looking at that there.

COMMISSIONER PETERMAN: Thank you.

MS. TIERNEY: Thank you so much for inviting me to join you today and best of luck. As everyone has said this is where a lot of stuff is happening and you have really tough jobs. Thank you.

COMMISSIONER RANDOLPH: Sue, can I ask you one quick question before you go?

MS. TIERNEY: Yes, of course.

COMMISSIONER RANDOLPH: On the topic of long-term planning, you mentioned in Massachusetts that they were finding the market wasn't giving them the sort of policy goals that they wanted. What sort of tools are they putting in place to deal with that long-term planning issue?

MS. TIERNEY: Great question, the state does not do a long-term plan. The utilities don't do the kind of long-term planning that an IRP type of work that you do here. Connecticut does by the way, but the six states have

adopted a very rigorous RTO planning model, long-term planning model under the rules that FERC established. And they've used that to put into the scenarios that are considered by the New England ISO, various studies that they want to have done about different economic scenarios or targets for greenhouse gas reductions or a variety of other things.

So I think the planning that you do here, which I will never call Soviet state planning unless they start cyber-attacking you, that is very different than what exists in the northeast. Thanks.

COMMISSIONER RANDOLPH: Thank you very, very much.

PRESIDENT PICKER: Thank you. I think we're going to have to call this panel to an end. I do want to say that nobody mentioned the most important feature of the regulatory system in New York, which is that the president directs all the staff, runs all the cases and the other Commissioners just come and vote. (Laughter.)

COMMISSIONER PETERMAN: Good luck with that.

PRESIDENT PICKER: So that's not soviet style.

COMMISSIONER PETERMAN: It's true. And the president left that Commission.

(Off mic colloquy.)

PRESIDENT PICKER: Yeah, I'll go there. So thank

you and I want to thank all the panelists.

This is the time that we promised for two things. One is to hear from the public and then for closing comments from the Commissioners. So we have about ten people who've asked to speak and if we take a half hour that gives each of them three minutes. Do we have any other cards that I don't have up front?

Okay. So it's going to go to two minutes, I'm afraid. So essentially what we're asking for you to do is to introduce your central issues or your central themes, and then to submit to us written comments that we can then actually distribute as part of the record.

So I'm going to call people up by twos, so that everybody has a chance to walk up. I'm going to start with Aubrey Stone from the California Black Chamber of Commerce, Mr. Stone. And then John White from CEERT. And two minutes, I'm sorry but given the number of extra cards I just got that's a fair amount of time. Just kind of introduce the major themes and then please give us written comments.

Mr. Stone, there's two microphones up here, then John White.

MR. STONE: Good afternoon.

PRESIDENT PICKER: Press the button, so that you get the mic turned on. It should be a green light. How's

that?

MR. STONE: Good afternoon, everybody. I'm Aubrey Stone, President and CEO of the California Black Chamber representing small and emerging businesses here in the state. And I just simply want to be real quick and say that minority and minority business communities, especially those that are in more economically vulnerable areas of the state, should also benefit from broadening the energy choices. And should not be left behind by lapses in the regulation.

As California explores expanding customer energy choice we believe it is critical that regulators and legislators alike pursue policies that ensure all Californians can benefit equally from choice regardless of where you live and what your income is.

It is also important and we want to make sure that policies prevent cost shifting, so that customers who do not immediately have choice or do not decide to choose an alternative provider are not left behind in subsiding those that do so.

That's all, thank you very much. I'm glad to be here. It's good to see you, Carla.

PRESIDENT PICKER: John White and then Jean Clinton.

MR. WHITE: Efficiency and renewable

technologies, thank you for letting me speak. Just a couple of thoughts and reflection of today's comments, first is that as the gentleman from Sonoma Clean Power said earlier today, the goal of the enterprise here is to use renewables as a tool to get greenhouse gas emission reductions not just as an end in themselves. So what we need to think about is how are we going to get the procurement we need to meet the greenhouse gas reductions, not just how to get the cheapest renewable kilowatt hours. So we need to think about how the oversight is going to occur with respect to, particularly the community choice aggregators. So that we can see that they are in line with the greenhouse gas goals that everybody else is trying to meet.

The second thing, the staff paper doesn't really mention or reflect on the need for large scale infrastructure that is going to be needed for achieving the climate goals. That's not likely to show up in the procurement of the load-serving entities, either because the projects are too large or because the risks are too great given the threat of people leaving the system.

So I think we need to think about how we're going to finance the needed infrastructure. And maybe one way we could think about doing it, is to have there be some aggregated look at what everyone has been buying,

aggregated together. And then see what residual need is going to be left and how are we going to go about doing that?

We, in the past had the Department of Water Resources play a role and we had the California Power Authority. But clearly there's going to need to be some system-wide infrastructure that isn't going to be cost recovered through the procurement of the various load-serving entities.

And then lastly, I thought the point that was made about the credit-worthiness of the counter-parties with regard to the CCAs versus the utilities is going to be very important for financing the amount of renewables we're going to need to get to the greenhouse gas target. So I think that's a fair point to reflect on.

And then lastly, a transparency is going to be crucial for making all of these comparisons in terms of both the performance of the procurement as well as the cost. So thank you.

PRESIDENT PICKER: Thank you.

Jean Clinton then Julian Canete.

MS. CLINTON: So I'm Jean Clinton, representing only myself. I have three observations and then a question, a rhetorical question to pose. The observations are built on both listening today and spending the first

three days of this week in Washington at the DOE Better Building Summit, which was filled with people from the commercial real estate industry and finance figuring out how to do better buildings.

So my three observations are first the efficiency pace is terribly slow relative to the economic potential that we've all identified.

Secondly, the current investment framework or paradigm has to work in the context of real estate returns with only five-to-seven-year hold timeframes, business competition for capital within industry and commercial enterprises and the lack of emergence so far of a real visible market value for green or EE in the real estate markets.

Third, another observation, we don't ask homeowners and commercial real estate investors now to self finance 20 to 30 years worth of energy requirements that they're going to need. They just get to pay for it on a pay as you go basis every month.

So that's the context. Here's my question. We've been talking about the potential role in utility investment and the utility roles as counter-parties. Could we imagine the potential for our utilities to arrange capital to support long-term (indiscernible) as service transactions that would include EE, onsite solar, storage,

possibly EV charging, that would be available at more attractive returns than the commercial real estate industry offers today? That would earn for the utilities a return on the actual or virtual asset where there would be some sort of quality standards for the programs or the providers that would reflect some assurance of performance. And with some sort of cost recovery collection mechanism that could be tied to the property or the meter via some sort of a tariff?

So that's my rhetorical offering of how to blend this in to this future vision. Thanks.

PRESIDENT PICKER: Thank you.

Julian Canete and then Rick Brown?

MR. CANETE: Thank you, President Picker, Commissioners, thank you for the opportunity to address you. Julian Canete, I'm Public Policy Director at the California Asian Pacific Chamber of Commerce. The Chamber currently represents the interests of the over 600,000 Asian-Pacific/Islander owned businesses throughout the state.

The point that we did want to make, of course it's no surprise that every business needs access to reliable and affordable electricity. Based on that, some small businesses may choose to take advantage of energy choices available to them and some may not. We know this,

because we did extensive surveys with small business users throughout the state that were done in the Central Valley, Southern California, etcetera.

In order to make decisions that are best for them, small businesses and all electricity customers should be confident that there is a level playing field. Everyone should have access to the same choices and nobody should be paying more than their fair share. We feel that this is a point that we need to get at, and would like assurances that that's the direction we're moving in. Thank you.

PRESIDENT PICKER: Thank you.

Rick Brown then Craig Goodman.

MR. BROWN: Good afternoon, Rick Brown, TerraVerde. One of your earlier panelists referred to a LVL study by Galen Barbose that basically said that the PUCs around the country need to pay more attention to the huge CapEx associated with getting to aggressive RPS goals versus the amount of attention that's being spent on concerns about cost shifts associated with distributed generation.

We believe that DG and DERs in general are not getting enough credit for the avoided TND costs that they're providing. Case example, in November PG&E announced the deferral of a $143 million Gates-Gregg Project, because of growth of DERs in the greater Fresno

area. A number of the schools who we work with to put in solar and battery storage called and said, "Are we going to get any of that money?" They put in these DERs for their behind-the-meter benefits, but they also did provide benefits to the rest of the ratepayer base and we need to acknowledge that.

We believe also that CCAs are an entity that can provide some of the kind of aggregation of DERs in a more efficient way similar to what Jean was talking about, actually. And provide the procurement support and do it in an organized way to meet some of the kinds of needs that are out there. And I guess we recently got a grant from the CEC working with Marin CleanEnergy to test out that model and we'll be reporting on that in the coming years.

The last point is that around this issue of accountability and who's responsible for some of these needs, you know, the last resort concept, CCAs are government by publicly-elected people. It's not the same, we shouldn't be comparing them from a competitive retail model to what was occurring in the past. So I encourage us to look at that through that lens, that they are public entities with a public purpose.

PRESIDENT PICKER: Thank you.

Craig Goodman then Karey Christ-Janer.

MR. GOODMAN: Thank you, Mr. Chairman and

Commissioners. My name is Craig Goodman. I'm President and CEO of the National Energy Marketers Association. We just celebrated our 20th anniversary. We started just after -- someone showed a Blue Book in this audience -- just after that Blue Book started.

I started a little before then and my first day in government I went to Government Energy Pricing School. I was a Special Counsel to prosecute oil companies for overcharging for gasoline during the gas lines of the '70s. And I had an opportunity from that point to this point, to become a staunch advocate for competitive choice in not just natural gas, but electricity and virtually anything else in the energy field that is susceptible to competition.

To make you feel more comfortable, aside from being the progenitor of retail choice you now have over -- I want to say 14 million -- excuse me, 16 million Americans have a choice. In Nevada recently, they voted to have choice. They voted for a constitutional amendment to have a choice. There are 7 million residential consumers in America that have natural gas choice and it's working well. It's working very, very well.

Those of you who have picked up some antenna (phonetic) from New York and some allegations of ill conduct, I can tell you the complaint rate versus the

number of consumers shopping is so low that we don't even get up to a 10th or 100th of 1 percent of the customers shopping, are complaining about a bad experience, which is an extremely important point here.

And then the last point that I think that all of you want to know, when it was done right and it has been done right -- and I'm going to use one state, but there are several -- in the State of Texas from the day they had regulated rates until today the prices of electricity have gone down 65.9 percent inflation adjusted.

Thank you very much.

PRESIDENT PICKER: Thank you.

Karey Christ-Janer then Ed Mainland.

MS. CHRIST-JANER: Good afternoon, Commissioners. I'm an independent advocate here in California and also in Colorado. And I wanted to first point out, there's been a lot of discussion about jurisdictional issues, which is you know, very thorny when it comes to the IRP. And looking at legislation that is going through Committee process right now, SB 618, and I just wanted to remind that the Oxford Dictionary definition of the word "review" -- if it's going to be review and then certify -- the Oxford Dictionary definition is a formal assessment of something with the intention of instituting change if necessary.

And I think that that's really key, because I do

believe that SB 350 gives the Commission wide authority. And my personal hope is that the IRPs will -- that the Commission will be able to have a coordinating role, which I think will be very key. And I've spoken in front of most of you before about that.

And now I want to just say that I've also filed numerous previous comments in the IDER proceeding and I'm now going to limit these comments to basically what I've already filed. And that is that I believe that a CCA-IOU partnership model may be able to, similar in many ways to what I think NRDC and some other people have spoken of, so that the entities are not working at cross purposes. Because after all, when post-allocation gets more aligned you may find more migration.

And then let's say you've got 75-25, if you're going to do a phased DER program for example, it's going to be very difficult to coordinate that when you've got two different controlling entities potentially coordinating the EE programs or the DER programs. Which also speaks to the idea of a more centralized role, whichever entity it is.

And on that note, I'd also have mentioned in the Competitive Solicitation Framework Working Group, in one of the working groups that I headed up with SiSi Song (phonetic) from MCE that the marketing powers of IOUs is something that needs to be considered the familiarity with

the entity. And that is I also think needs to factor in, coming from a marketing background.

Thank you very much.

PRESIDENT PICKER: Thank you.

Edward Mainland and the Doug Karpa.

MR. MAINLAND: Good afternoon, everyone. I live in Marin, California. There is an energy revolution we see, but where there isn't a revolution is in regulation. And the regulatory structure many say is the chief block to progress in this energy revolution.

An illustration was Mr. Picker's comment a year ago in a public interview. He said that community choice is, I believe I'm quoting you correctly Mr. Picker, forced collectivization. Calling up images of Ukrainian peasants being herded into collective farms, well by performance community choice is the most powerful and most democratic force available to meet greenhouse gas targets and to scale up distributed generation in California.

So the CPUC I would say, needs to get out of the way of CCA innovation. That means no more outlandish CCA liability bonds, proposals, no raising of the direct access cap, no perpetually rising PCIA, no nitpicking in IRP micromanaging. The cities and towns of Marin, for example, this month or next month will have opted their accounts up to 100 percent renewable power. So that (indiscernible) is

our great climate hope and I hope you don't get in the way of community choice. And I hope you'll let the revolution roll. Thank you.

PRESIDENT PICKER: Thank you.

Doug Karpa?

MR. KARPA: Yeah, thanks very much and much appreciated that you're still hanging in here this afternoon. Doug Karpa, the Policy Director with Clean Coalition and I wanted to really raise one issue. We work primarily on DER issues in removing barriers to those.

And one of the things we note is that -- I think the speakers have alluded -- that the deployment of DER is slower than it might otherwise be in some places. Germany and the UK are pretty well outpacing us. And several speakers have suggested that it's critical to consider new business models, new compensation models, which could be key to the development of a lot of the innovative services I think we're going to need in order for both DER to get full compensation for the values that they do provide to the Grid. And also for customers to be able to get what they really need.

So first, I would urge you to really engage in the consideration of new business models. And as you do that, one pretty strong option I think would be the creation of DSOs in California. Which could be done simply

to the extent that anything is simple in energy policy ever, by putting a bright line between distribution and transmission assets. One of the concepts we're working on really is to take existing utilities and to divest transmission assets, which would have the effect of taking utilities and converting them into enteritis that really have to compete intensively as DSOs. And focus on innovating the whole suite of services both for themselves to have a profitable business for customers to deliver value. And for all the DER assets to recoup revenues for all of the services that they provide and that can be a very powerful lever for driving change.

So we'll provide you comments on that going forward, so thanks so much.

PRESIDENT PICKER: Thank you.

So that completes the public comment period. And I'm going to turn it over to the Commissioners to make closing comments and whoever would like to go first. We can start at this end and work our way, this way.

COMMISSIONER GUZMAN ACEVES: Well, thank you all for sticking it out. I do think it's been very helpful to hear from all the different perspectives. I think for me it was really helpful to hear about the other states experiences even though some of them were in the inverse. And kind of continuing to ask the question where are some

of the responsibilities and obligations best figured out through a kind of non-bypassable approach where everybody is paying in. And where is it a general obligation that folks are figuring out through their different procurement.

But I think in general as we kind of move forward here, it's not that the customer choice cannot afford these greater opportunities, but there is certainly lessons learned from other states in our own history that we cannot assume that they will be there.

And so those are certainly the different structures that we can hopefully fill in as we move along.

COMMISSIONER MCALLISTER: So I won't attempt to summarize any of the conversation, but I've really enjoyed today. I thought it was really helpful and productive and a lot of themes were surfaced, most of which we were kind of obliquely familiar with at least. But it's helping to put a finer point on the discussions going forward, so I'm looking forward to looking at the written comments. I would encourage everybody to submit those.

And moving on, both within our agencies, but also hopefully we can keep this joint discussion going as we move forward. Thanks everybody, for sticking it out through the day.

COMMISSIONER RANDOLPH: I'll just briefly say thank you to everyone and it's a beautiful Friday evening

out there, so I'll just thanks and move along.

CHAIRMAN WEISENMILLER: That's good, Thank you.

I think at this point we're all trying to keep it fairly short, but I think obviously one of the things that we need to be thinking about is we talk a lot about how the market's being transformed, how the utilities are being transformed, etcetera. And I certainly encourage people in the written comments to think about well how do we need to change the PUC and other regulators to deal with the changes going forward. And I would just note that when I'm ever in Germany I always point out that the Germans include hydro as renewable. And if you do that we're greater than they in terms of percentage of renewables. Thank you.

PRESIDENT PICKER: So ...

COMMISSIONER DOUGLAS: Go to this end, so I also really enjoyed the discussion, the panels today. I appreciate those of you who stuck around to make public comments. You know, as some of the people in the last panel said, many of these issues are not new. They come back to us and they resurface over the years. But certainly the circumstances that we find ourselves in today with our tremendous success on renewable energy. And our need to address that success and set the stage for further achieving our renewable energy and climate goals in a way that also meets this broad range of needs in the

electricity sector is what's before us today. And it puts a pretty unique context around this.

And so anyway I've really enjoyed this and appreciated the chance to be here.

COMMISSIONER PETERMAN: Yes. Thank you, for all of you, for a very informative en banc. I think like many of you I believe in carefully regulated markets and I also believe in a welfare state. And those can be difficult ideas at times to marry, but I do think it's very fundamental to how we've approached energy policy as a state. And so I do want to make sure that we are keeping in mind both the opportunity we have here to let markets come forward with some solutions, but also make sure that we're providing accessible and affordable power and resources to all Californians. And we don't want to lose perspective on either of those ends.

And so I really appreciated Ren's comment about where we'll probably end up. Where we are even now is somewhere between command and control and a fully laissez faire perspective. I mean, I think the difficult part is figuring out who should be responsible for what.

And following up on Commissioner Weisenmiller's point about the role for the agencies, I think we've talked at times about how these trends are inevitable. But I do think they're largely driven by the policy choices we've

made. And there are certain policy choices we've made that we are committed to that we've made to 2050. And there's others that are smaller, but as important in how we approach RA, how we approach net energy metering that we talk about having iterative to approach. And so I do want us to not think about this as something inevitable, because we have the power to make changes and move things in a direction we like.

And so I do think we're at the stage where we need to start thinking about what the end state really looks like. We've talked about what we want it to be for a greenhouse gas perspective, but I do think we could provide some more clarity around vision, around institutional structures. And so what I'm looking to understand over the next several months is, particularly are there types of utility business models that just will not work in any circumstance for the vision that we have? We don't have to pick the final model, but I like to eliminate the worst possibilities.

And so I'll really be looking for input along those lines including what about other structures that are just nonstarters for California? That helps us narrow down the choices. I'd rather be left ultimately with a set of options that are mediocre to great versus great to really bad. So if you can help us narrow that set, that would be

greatly appreciated. Thank you.

PRESIDENT PICKER: So I just want to reflect on the fact that some of our Commissioners who were in high school when we had the first energy crisis after deregulation and as such --

COMMISSIONER PETERMAN: Well, certainly in college.

PRESIDENT PICKER: -- that's also true of some members of the audience. And so I'm just going to recommend two documents that I found helpful. One is "Smart Power" by Peter Fox-Penner, which recapitulates the history of the electric industry and how it's changed over time. I thought it was accessible and pretty useful, and he does get to an analysis of how technology is reshaping the current electric industry and some of the pitfalls and opportunities.

And also I'm going to point to, since somebody specifically asked me what happened in California during the energy crisis, a book called "Soul of the Grid" by Arthur O'Donnell who was a reporter when he wrote that. And is now with the California Public Utilities Commission, which talks a lot about some of the things that we've all discussed as seeing in the Grid right now, but not sure how we actually prepare for the challenges that we face.

I'm just going to say that having heard the

multiple voices and the multiple approaches, it's clear that there's not an agreement. As the guy said on -- or the sheriff said on Coolhand Luke, "What we've got here is a ill-formed and non-heterogeneous problem to meet." And so I think we have a long way to go to try to pull all these different tendencies that have been unleashed by a variety of different decision making processes to gather and figure out which or how they work together to help us reach our energy goals.

Clearly, nobody here thought that the other proposals was the correct one. So I think that we didn't have a basis to exclude anybody from consideration based on what we heard here. However, it seems like we are going to have to make some changes to be able to continue to make a path towards our greenhouse gas goals, continue to achieve reliability, provide some cost effectiveness in this system. And to be able to allow customer choice at the same time that we provide universal access and affordability. Tough to hit all those markers, tough to do that with all these different models competing against each other.

So I think our next steps is we're going to consolidate the record. We'll probably look a little bit at where some of these questions are already contained in our existing proceedings. So we have PCIA and other issues

that will come before us at the CPUC. We're working with the CEC on what the nature of the integrated resource portfolio is, both for all the regulated load serving entities including CCAs and what will happen in the publicly owned utilities.

I think that we will have to continue to think about how we actually structure energy efficiency programs to help people reduce electricity. I think there are a gazillion other questions that came up today, but we will probably start to have to really examine the current business models that are before us to figure out whether there's incompatibilities or whether there's risk to achieving our goals.

So thank you very much. (Applause.)

(The En Banc was adjourned at 4:59 P.M.)

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