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EN BANC HEARING

DRAFT GREEN BOOK: AN EVALUATION OF
REGULATORY FRAMEWORK OPTIONS FOR AN
EVOLVING ELECTRICITY MARKET

CALIFORNIA PUBLIC UTILITIES COMMISSION AUDITORIUM
505 VAN NESS AVENUE
SAN FRANCISCO, CALIFORNIA

FRIDAY, JUNE 22, 2018
8:34 A.M.

Reported by:
Julie Link, CER-830
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COMMISSION EN BANC ON THE GREEN BOOK

Michael Picker, President, California Public Utilities Commission

Robert B. Weisenmiller, Chair, California Energy Commission

Andrew McAllister, Commissioner, California Energy Commission

David Hochschild, Commissioner, California Energy Commission

Martha Guzman-Aceves, Commissioner, California Public Utilities Commission

Clifford Rechtschaffen, Commissioner, California Public Utilities Commission

Liane M. Randolph, Commissioner, California Public Utilities Commission

Carla J. Peterman, Commissioner, California Public Utilities Commission

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Dave Ashuckian, Deputy Director, California Energy Commission, Efficiency Division

Severin Borenstein, Haas School of Business, U.C. Berkeley

Ralph Cavanagh, Senior Attorney, Natural Resources Defense Council

Colin Cushnie, Vice President, Energy Supply & Management, Southern California Edison

Tom Dalzell, Business Manager, IBEW Local 1245

Deb Emerson, Director, Power Services, Sonoma Clean Power
Matthew Freedman, Staff Attorney, TURN

APPEARANCES (CONT.)

Dan Skopec, Sempra Energy Utilities

Sam Liccardo, Mayor, City of San Jose

Kathrin Sears, Supervisor, Marin County

Michael Shaw, California Manufacturing and Technology Association

Sue Mara, RTO Advisors, LLC

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Pat Wood, III, Principal, Wood3 Resources

Madeline Stano, The Greenlining Institute

Scott Olson, Director, Western Government and Regulatory Affairs, Direct Energy

Mona Tierney-Lloyd, Senior Director, Regulatory Affairs, EnerNOC

Ed Randolph, California Public Utilities Commission

Michael Colvin, California Public Utilities Commission

Nidhi Thakar, California Public Utilities Commission

Kevin Barker, California Energy Commission
APPEARANCES (CONT.)

PUBLIC COMMENT

Karey Christ-Janer, Independent Advocate
Woody Hastings, Center for Climate Protection
David McCoard, City of El Cerrito
Neil Reardan, Sonoma Clean Power
Leah Goldberg, East Bay Community Energy
Chris Hendrix, WalMart
John Rizzo, Sierra Club
Mary Lynch, Constellation
Nancy Radar, California Wind Energy Association
V. John White, CEERT
Rick Umoff, SEIA
Kevin Haroff, City of Larkspur
Shawn Marshall, LEAN Energy US
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Diane Fellman, CPUC

Welcome - President Michael Picker

Opening Remarks

CEC Chair Robert B. Weisenmiller
CPUC Commissioner Liane M. Randolph
CEC Commissioner David Hochschild
CPUC Commissioner Clifford Rechtschaffen
CPUC Commissioner Martha Guzman Aceves
CEC Commissioner Andrew McAllister
CPUC Commissioner Carla Peterman

Ad Hoc Advisory Committee General Remarks

Introduction: Nidhi Thakar
Ralph Cavanagh, Senior Attorney, Natural Resources Defense Council
Pat Wood III, Principal, Wood3 Resources

How much choice do Californians want and what is the best way to provide it? What choices are missing from the state's policies?

Moderator: Diane Fellman

CCA Elected Official:
Mayor Sam Liccardo, City of San Jose
Supervisor Kathrin Sears, Marin County

Customer: Michael Shaw, Vice President, Government Relations, California Manufacturing and Technology Association

ESP: Sue Mara, RTOAdvisors, LLC
IOU: Dan Skopec, Vice President, Sempra
Energy Utilities

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Introduction: Commissioner Andrew McAllister

David Ashuckian, Deputy Director, Efficiency Division

Core Principle: Affordability and Consumer Protections

Moderator: Raisa Ledesma Rodriguez

IOU: Robert Kenney, Vice President, CPUC Regulatory Relations, PG&E
CCA: Barbara Hale, Assistant General Manager for Power, SFPUC & CleanPowerSF
Consumer: Matt Freeman, Staff Attorney, TURN
Academic Perspective: Severin Borenstein, Haas School of Business, U.C. Berkeley

Core Principle: Decarbonization: Scaling Infrastructure

Moderator: Michael Colvin

Labor: Tom Dalzell, Business Manager, IBEW Local 1245
Generator: Danielle Osborn Mills, Director AWEA California
Preferred Resources: Arthur Haubenstock, Executive Director, California Efficiency + Demand Management Council
Environmental Justice: Madeline Stano, Energy Equity Legal Counsel, Greenlining Institute
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CPUC PRESIDENT PICKER: I'm Michael Picker. I'm the President here at the PUC, so it falls to me to kind of walk people through and keep everybody on time. So, my apologies.

I'll also mention that we've had some occasional problems with pieces of our new sound system. So, if in fact, we reach the point where we can neither get a video feed or audio feed, then we're going to run Incredibles One for the rest of the universe.

(Laughter)

CPUC PRESIDENT PICKER: So, you can tell people which particular character you are.

So, I'm going to turn this over to Diane Fellman, who's going to remind us of the purpose here today, and actually help people walk through our safety announcement.

MS. FELLMAN: Thank you, President Picker. This mic is working, good. Welcome, Commissioners of the Public Utilities and Energy Commission, the Ad Hoc Advisory Committee, staff, and stakeholders in this process.
I'm Diane Fellman from the California Public Utilities Commission and I am the team lead on the California Customer Choice Project. With me today are Raisa Ledesma-Rodriguez and Michael Colvin, my other team members. And we will all be leading panels later today.

This En Banc is the next step in the process started a year ago with an En Banc, raising the question what does California want to do about customer choice? This inquiry has been triggered by increase in disaggregation of both electricity suppliers and providers of California.

The Draft Green Book, which we had copies in the back, but it's also available online, is a result of that effort and raises questions on how California will continue policies that honor its four principles of affordability, de-carbonization, and reliability, while the California electricity market evolves.

We asked a lot of questions in the green book and people said why aren't there answers? We wanted to create a platform for conversation about what would happen next.

Today's En Blanc is dedicated to that
conversation. So, we will have very short presentiations from the presenters. We are not going to have any PowerPoints. And the rest of the time on the path is dedicated, Commissioners, to your questions and your inquiries. So, please, we're looking forward to your engagement and your interest, and we will be taking careful notes to guide our future efforts on the team.

We first will have our safety briefing.

So, Edward, can you tee it up, please?

(Audio evacuation instructions)

CPUC PRESIDENT PICKER: Okay, so in the event of an emergency I'll call 911. And our adviser, who is some place in the back, Allison, our Public Advisor, will render first aide. So, thank you.

MS. FELLMAN: Thank you. We are working toward developing a meaningful and comprehensive plan to address the issues that are facing our market today.

And I will now turn the meeting over to President Picker and the other Commissioners for opening remarks. Thank you.

CPUC PRESIDENT PICKER: Great, thank you.

I want to especially welcome our fellow
Commissioners from the California Energy Commission to our dais. I hope they appreciate the grandeur and the ability to project your strong powers across the audience here. It is a constrained dais, though, so we're all kind of squeezed in here.

I also want to recognize my fellow Commissioners. This is our third day of fairly continuous meetings, so I'm going to try to keep us on time so that we get out of here in time for some weekend.

I also want to thank everybody else who's joined us here. And particularly point out some of the people who have actually been working with us consistently through this process.

Pat Wood, who has had a long history of looking at the markets for electricity, market efficiency, both as the head of the Texas Public Utilities Commission, and then as the Chair of FERC.

Ralph Cavanagh, who has a long history here in California. He is the person who is generally credited with decoupling energy efficiency from electricity sales and actually creating a healthy posture for the electric
utilities to actually spend money to reduce electricity use.

And I mention Melanie Kenderdine, who was most recently a Deputy Secretary in the Obama Department of Energy, and is now working with her former boss, Ernie Moniz, on providing consulting services to national governments and to businesses on energy policy.

And also, Sue Tierney, who had been working with us as part of our Advisory Committee and making sure that we were being accurate to the history, and truth-tellers, and advising us on how to actually understand issues that we're seeing in California. Sue is a long-time energy leader and a former regulator and is now with The Analysis Group.

So, these folks are very important to us.

I also want to recognize that we have the participation today of two elected officials. Mayor Sam Liccardo of San Jose, who is undoubtedly stuck in traffic. And then, Kathrin Sears, who's from the Marin County Board of Supervisors.

I think that the reason that we are here is that we're all fairly well-aware that
California has taken steps to allow customers to have a lot of choice of how they get their energy, whether it's rooftop solar, or direct access providers, which provide about 13 percent of the energy needs just as electricity providers, pure electricity providers.

It's very similar to the kinds of providers who were active in the deregulation of 1995 through 2001-2002. And they've continued to do that since the energy crisis.

The rooftop solar companies actually have installed about 6.5 gigawatts of generation on people's roofs, very significant. It's only rivaled by the efforts of the traditional regulated utilities who've done about 22 to 23 gigawatts of renewable energy here in California. Enough to drive most of them to 33 percent far in advance of our goals.

We have other technology choices that people can provide for themselves, battery storage, natural gas fuel cells, all supported by our Small Generator Incentive Programs.

We have new providers starting to enter the market. They're the latest, even if they are still not the most consequential, the Clean
So, we have a lot of different people who are helping customers to actually make choices about where they get their electricity service from.

The challenge for us is this reminds us of a pattern that we've already seen here in California, and in the period between 1995, the Public Utilities Commission working with our partners at the Energy Commission, published documents that actually called for full retail choice. The Legislature acted and created that kind of a market.

And for a variety of reasons, the failure to fully procure all the resources we need for the hottest days of the year, and market manipulation because we hadn't put in place the right kinds of market protections, we had very catastrophic failures.

The Legislature very quickly reacted and they actually determined that the regulated utilities would be the providers of electricity service and that the direct access providers would be limited to a slim portion of the overall commercial and industrial markets here in
But they still held out hope for a variety of other kinds of providers, whether it's on technology or different kinds of electricity services.

Hi, Mayor.

So, we're sort of faced at this point with choices in two different ways. You can have different technologies that you can procure as a customer to provide you with your electricity service or you can get it from three different kinds of providers, the regular utilities, the direct access providers, or now the CCAs. And they're all different in different ways.

So, our challenge as regulators is how do we make sure that we keep the lights on, that people can afford to pay their bills, that we meet our State's clean energy goals, at the same time that the decision making is splintering and going in different directions.

And we know from the past that if you don't have a plan, if you haven't thought it through, if you haven't created the right kinds of protections you can get into trouble very quickly.
I'll just point to the fact that these markets can be very brutal. Three years ago, people were predicting that the rooftop solar industry would disrupt the traditional utility model, force us to the utility of the future, creating massive changes in how people got their electricity.

Today, two of the largest providers are no longer here in the State of California, despite their market share, despite their fast growth, despite a very robust subsidy they failed. They failed. And that can happen to anybody.

Here, at least people are left with the residual generation. In other cases, we know from 2000 to 2001, if an electricity service provider fails, then there's a lot of customers who actually get dumped back into the marketplace and somebody has to be the provider of last resort.

So, these are the challenges that we face. I have been the chief of staff to a mayor, and I really value local government and its role. I'm especially fond of mayors.

I have been an elected official, myself,
and I think that we should all stand before our peers and be accountable for our leadership and recognize the value of that public service. And I also have been a board member for a publicly-owned utility and part of the public power move. And I value all of those different tools.

But today, I'm here because I'm an economic regulator and I have to look to both the effectiveness and the sanctity of all these electricity markets. And again, ensure that all these different providers are guaranteeing reliability, the cleanliness of the supply, and affordability.

So, with that, I thank you all for joining us and I turn it over to my colleagues.

Bob, do you want to kick it off.

MS. FELLMAN: Excuse me one minute. We have a technical issue.

CPUC PRESIDENT PICKER: Okay, role the Incredibles.

(Laughter)

MS. FELLMAN: Excuse me, could everyone that's calling in please mute your phone with Star 6. Thank you.

CPUC PRESIDENT PICKER: Okay, Bob, do you
want to kick it off?

CEC CHAIR WEISENMILLER: Yeah. Good morning. Yeah, good morning, I hope everyone can hear me. But at this stage I appreciate the opportunity to have another En Banc on these issues and appreciate the PUC sharing more or less half the dais with us. You know, Energy Commission colleagues.

We all -- the PUC and the Energy Commission had an En Banc on this topic a little over a year ago. And it's interesting to step back and think for a minute about how things have progressed in this area, but also keeping an eye on the context, the other big changes going on in California and in the utility industry.

And so, certainly, a year's not a long time. I mean, we really need to be thinking through what the future looks like as we go through what's a pretty massive transformation in the nature of our utility industry in California. Our utilities and, obviously, I‘m lumping CCAs, and ESP, everyone who is providing services to our residential customers.

And, you know, the basic thing which I think we started with was saying change is coming
fast, and people had a lot of choices. The choices were not just procurement options, but certainly a lot of technology. And those were forcing really fundamental changes in the nature of our utilities and at the same time, you know, it was certainly time and it is time to look at the resulting changes that are needed in our regulators, and what that means.

Again, the PUC historically, for well over 100 years, has done things like audit the utility books. And, you know, we're moving now much more to local control. But at the same time the question is are the local officials prepared for the nature of regulation that the PUC has done? And, what's necessary going forward to really protect customers? I mean, that's one of the fundamental things. But at the same time make sure that we continue to respond to the challenge of climate. Climate change is certainly one of our existential threats. And we need to really move faster than we are to really clean up our systems and, at the same time empower people to make the right choices.

So, again, I'm looking -- it's a long day and I think we're all here to really listen to
the various stakeholders, but this is important.

You know, as President Picker has said, if we screw things up, it can have really fundamental consequences. So, it's important to think out a couple steps forward. Not just what could be, but what could go wrong.

And again, it's -- obviously, if you've been in this business long enough, you're aware that eventually there are surprises and things can go wrong. Not that we have a crystal ball on exactly what that is, but we owe it to the citizens of California to think things through.

CPUC COMMISSIONER RANDOLPH: Thank you all for coming and thank all of you who submitted comments on the Green Book and provided your thoughts. I think this is -- you know, we're really fortunate to have this opportunity to kind of step back and really try to take a holistic look at, you know, where the markets are going, how the system is being operated, and regulated, and managed. And there are so many new players and there are so many new challenging issues that it's really important for us to be able to seize those opportunities, but also address the challenges and consider the experience of the
customer. Understand who is able to access these opportunities to play a part in our clean energy future. How are these policies impacting disadvantaged communities? How are we protecting customers, as President Picker said, to make sure that there is a provider of last resort for them? How do we maintain reliability? And how do we achieve our aggressive climate goals?

And so, there's -- you know, I don't think we have a lot of preconceived solutions. I think we're kind of working each problem as it comes. And so, taking the opportunity to really look at how all these puzzle pieces fit together is important. And I appreciate the thought and contribution of everyone who's participating today. Thank you very much.

CEC COMMISSIONER HOCHSCHILD: Good morning. And special thanks to President Picker for bringing us all together, Chair Weisenmiller and our colleagues here at the PUC. I think they've done the seating order in order of intelligence, from low to high.

(Laughter)

CEC COMMISSIONER HOCHSCHILD: So, look, just to state the obvious, the stakes are very
high. There's a lot of eyes on California. As you all know, we have several thousand delegates from all the world descending on San Francisco in September for the Climate Summit, some 500 sidebar events with that.

And California has essentially emerged as a country, pioneering all these models. And I think writ large, the story is a successful one. And when Governor Brown took office in 2011 we were the 9th largest economy in the world, today we’re the 5th largest. At the same time pressing forward with, really, the gold policies in the United States clean on energy, clean transportation, energy efficiency, clean energy innovation investments. And we've not have any statewide rolling blackouts since 2001.

The story's a successful one but that can change if we're not careful. And so, just getting the market structures in place that are going to ensure that we continue to deliver affordable, clean electricity, reliably to customers in California is paramount.

If we fail, even if the reasons for the failure are not related to our clean energy policies, it will actually undermine the progress
of the clean energy policy around the world and in other states. And so, it really matters to get the rules right. And I look forward to this dialogue with all of you today.

And I just want to especially thank Diane Fellman for all your work putting this together and welcome you back from your lengthy field trip in the private sector and back to public service. We're lucky to have the benefits of your talents here today.

CPUC COMMISSIONER RECHTSCHAFFEN: Well, we're very happy that Diane, when she chose to come back to public service came to the PUC. (Laughter)

CPUC COMMISSIONER RECHTSCHAFFEN: Not the Energy Commission where she started her illustrious career.

I don't have much to add. I think we should get started. The current situation is one of great change and complexity, but also one of great opportunity. I think we are grappling very seriously and very intelligently, or trying to, with the situation commensurate with what's at stake. And I also appreciate all the stakeholder involvement, the excellent staff work, and I look
forward to today's discussion.

CPUC COMMISSIONER GUZMAN ACEVES: Good morning, everybody. I think, likewise, some of the things that I'm hoping we get out of today's discussion is really asking the question of those instances where even though we're acting locally, and thinking of our communities as this transition moves forward, when is it still the role of all of us to act collectively?

And certainly, we've been talking and having a lot of focus of when we do that for liability purposes, but I think it goes far beyond that.

One of the proceedings I'll be working on is disconnections. And that's another issue where I hope all of this audience will be involved in. And those questions do implicate all of us.

So, just looking forward when is it that we still have that common role and responsibility, and not just the responsibility of our individual customers but what -- you know, what's the role of collective action moving forward.

Thank you all for being here.
CEC COMMISSIONER MCALLISTER: Alright well bringing up the rear here. I really appreciate the opportunity, I want to thank President Picker for the opportunity. And I really enjoyed the last En Banc and I have great expectations for this one.

Just quickly, you know, I think as we -- as demand becomes much more atomized, decision making because much more diffuse, I think that's our challenge to adapt regulatory structures to embrace that and actually harness markets in a way that is coherent and allows collective action in a way that makes sense.

And in particular, I'm interested in the demand side, sort of the local decision making of the -- very granular decision making and how do we sort of provide the right signals to the marketplace, harness private sector markets aggregation, that sort of thing, demand side to help with solutions. You know, to actually sort of modulate on both sides of the equation so that we can optimize the distribution grid and we can avoid some of the heavy investments that are going to be forced if we don't do that, and in preparation for much of the electrification that
we all know and believe is coming.

And so, we have to move fast. I agree
with Chair Weisenmiller, we have to move faster
than we have and we have to figure out ways to be
more inclusive in decision making, but at the
same time have that underpinning that ensures
reliability.

But affordability is paramount and our
low-income populations are a big chunk of our
State, they're 30 percent of our State. And so,
we really -- if we get to 2030, 2050 without
having provided solutions to them that includes
them in this clean energy economy, I mean we're
not going to be able to say we've succeeded.

So, a bunch of big lists. And I think
we're on the front end of this road, walking this
path to try to get there. And I think this En
Banc will help us push forward in the right
direction. So, thanks again.

CPUC PRESIDENT PICKER: Thanks to all of
you. I think Nidhi Thakar is going to -- oh,
Diane's going to introduce somebody.

MS. FELLMAN: Yes, we are going to. We
have a packed day, a packed dais. Commissioner
Peterman will be joining us shortly.
CPUC PRESIDENT PICKER: You have to get real close to it. There we go.

MS. FELLMAN: Commissioner Peterman will be joining us shortly. We're going to move forward now. We are going to have our (indiscernible) Ad Hoc Advisory Committee. And Nidhi Thakar, from Chief of Staff for External Affairs and Strategy, from President Picker's Office, will be introducing them. And then we'll just roll through.

Nidhi, (indiscernible) Ad Hocs.

CPUC PRESIDENT PICKER: Could you take a second and just identify all the different people at the PUC and folks from the CEC who helped us on this report, just so that everybody can see who worked on it?

MS. FELLMAN: Do you want to?

CPUC PRESIDENT PICKER: Yeah, Nidhi.

Either of you.

MS. FELLMAN: All right. So, today as I mentioned, we have the California Customer Choice Team, which the staff members are Raisa and Michael, who I introduced earlier, Nidhi. And where is Rohmiah Moly? She's in the back of the room. And here from President Picker's office
has been absolutely instrumental.

CPUC PRESIDENT PICKER: And Allison LeBonte.

MS. FELLMAN: Yes, absolutely instrumental in helping us.

Gary Dehlson also helped with communications. And we had terrific support from Terrie Prosper in our Communications Division, as well as our Office of Governmental Affairs, Hazel Miranda and Grant Mack.

Allison LeBonte, who is in the room, was our first team leader. And Allison and Raisa joined us from DOE, when President Picker went back in January of 2017 and encouraged folks to come out to California and work on climate change.

And Josh Hunneycutt, I don't know if he's in the room. He was also an early team member and he also joined us from the DOE.

I wanted to say that Allison was very instrumental in shaping our document and helping us come up with the core principles that you've heard so much about today.

I want to thank Kevin Barker, from the Energy Commission, who helped coordinate
everything we are doing today.

And in our Green Book, at the back
there's a sheet of acknowledgements of every
staff member who helped contribute.

Is there anything, anybody else that --
and I feel greatly appreciative of the
Commissioners and their offices, their advisors
who were involved in this every step of the way
from the beginning, through reviewing the draft.

And finally, I want to acknowledge our
very, very, very important Steering Committee,
who shaped the concepts and directed us along the
way, let by President Picker. I don't know if
Division Director Ed Randolph is in the room,
yet. He will be here later this afternoon. And
we were also served by Marzia Zafar, who was head
of my office, Policy and Planning Division,
before she left the Commission.

So, thank you everyone. Let's have a
round of applause.

(Applause)

MS. THAKAR: Good morning. My name is
Nidhi Thakar. I'm with President Picker's
Office. And I have the pleasure of introducing
our very distinguished Customer Choice Project Ad
Hoc Committee.

Here with us today, in the room, from the Committee are Pat Wood and Ralph Cavanagh. Can I ask you to stand for a moment, please? And you will be hearing some remarks from them, shortly.

I would also be remiss if I did not mention Melanie Henredine and who is the third member of our Ad Hoc Committee and who, unfortunately, cannot join us here in person today.

And as President Picker mentioned, she was a prior Senior Advisor to Secretary Moniz, at the Department of Energy, under the Obama Administration, and was also Director of the Office of Policy.

I should also name Sue Tierny who previously served on the committee. And many of you know her, she's an expert in the intersect of energy and economics and is a principal at The Analysis Group.

Before I introduce Pat and Ralph, I'd like to say a few words about the Ad Hoc Committee, who was instrumental in the production of the Draft Green Book. The Committee's indispensable guidance was critical to both the
framework and the contents of the Green Book. Their insights and experience are reflected throughout the draft. And in perspective, depth, context, and focus on key issues. And I cannot say thank you enough for the numerous drafts they reviewed and for the very instructive guidance they provided.

So, in the interest of time I'm not going to read the whole bios for our distinguished Committee, but they are on the table in the back of the room. I will, however, provide a few highlights.

Pat Wood has an extensive career in energy. He previously served as past Chairman of the Federal Energy Regulatory Commission. During his tenure at FERC Pat led the responses to the 2000 energy crisis and the bankruptcy of Enron, as well as the 2003 Northeast blackout.

Under his helm, the organized markets in the United States flourished and FERC promoted the development of renewables and reliability management, which led to the NERC standards.

Pat was also appointed by George W. Bush, when he was Governor to head the Public Utilities Commission of Texas with a mandate to break up
the monopolies for the telecom and the power industries. This led to the creation of ERCOT.

Pat has also served in numerous leadership roles in the private sector and has been a forceful advocate throughout his career for replacing government-centered regulation with customer focused competition.

Ralph Cavanagh is co-director of the Natural Resources Defense Council's energy program and is also an attorney with the NRDC. He's been with NRDC for almost 40 years. Anyone working in energy, in California, has worked with Ralph at some point, I'm very sure.

Ralph has been a visiting professor of law at Harvard, Stanford and Berkeley, and currently serves on a number of boards, including previously also serving on the U.S. Secretary of Energy Advisory Board.

He has also received countless awards for his dedication to the advancement of clean energy. Throughout his career Ralph has been a tireless advocate for clean energy, removing barriers to cost-effective energy efficiency, and the role that the electric and natural gas
utilities can play in leading the transition to clean energy.

We are pleased to have both Pat and Ralph with us here today. And with that, I will turn it over to our Ad Hoc Committee to say a few words.

MR. CAVANAGH: Commissioners, colleagues, I'm from time to time summoned to the Commission to deliver an environmental blessing on the proceedings. And I think today my role is more in the nature of historical memory.

First, a word of reassurance to all of the audience. Pat Wood and I would join in acknowledging we are in no sense co-authors of the Green Book. We were proud to serve in a role that I would describe as the best kind of peer review, where what the authors did was to get a lot of people, not just Pat and me, Melanie, and Sue, and a number of others together to help them ensure that they were getting a full picture of a critical issue both in terms of its history and future.

The way I would frame that critical issues is that they were most concerned about how there's a traditional utility responsibility,
among the most important the utilities have ever exercised, which involves long-term resource procurement, the creation of diverse resource portfolios in order to assure reliable and affordable service, and deliver environmental performance.

That resource procurement role, the whole question of how portfolios will be developed is changing. It was a central question in terms of the Green Book. It was also a central question more than 24 years ago in the creation of -- I take it the Green Book is an obvious historical reference to the Blue Book. I am told that the Commission no longer has a physical copy of the Blue Book. Here's what it looks like for those of you who haven't seen it. It, too, was centrally focused on this question of utilities resource procurement and portfolio management responsibilities.

There are some important differences between these two documents. What the Green Book undertakes to do is to provide a full history of the different procurement models to look where we've been, where we are now in California, what challenges we need to overcome in order to ensure
that our equity, environmental, reliability and affordability objectives are met.

It is an open-minded and rigorous inquiry. And it puts the decisions and the options squarely in front of the Commissioners, opening with a disclaimer that the document in any way prejudges the issues or the views of the Commissioners.

The Blue Book was something else altogether. There are no disclaimers at the beginning of the Blue Book. The Blue Book was the beginning of a forced march toward a particular view of resource procurement that essentially repudiated the proposition that it was important or necessary.

For the traditional utility role in resource procurement and portfolio diversity, the Blue Book substituted its judgment that the genius in the marketplace was all that we required. Its single-minded objective was to find ways to reduce the commodity cost of electricity in California.

And it shows a vehicle, what it called customer choice, what we would today call retail competition, which was pretty much a repudiation,
again, of the notion that we even needed to worry about resource procurement in any form of central -- indeed, the form of the resource procurement model of the utilities of that day was repudiated in the Blue Book as central planning. I think the word "Soviet style" was occasionally introduced as a modifier.

And we went down a path that none of us wants to return to or at least I think few of us do.

Today you'll be hearing from a variety of proponents for different models of resource procurement in portfolio development. But I doubt very much that you will hear anyone suggest that the genius of the market place by itself is enough to get California where it wants to go.

Commissioners, as you look at the Green Book, and as you consider your options I want to leave you with the sense of possibility and the sense of optimism that I certainly did not feel as I read the Blue Book, on the eve of Earth Day in 1994, which is how long ago it was.

What you're getting here, what I think all of the informal advisors agree on is a sense, first of all that you've got the tools you need
to devise the necessary reliability assurance to keep California on track to meeting its environmental objectives.

And that the challenge you face is in some ways different from the Blue Book era in that I doubt very much it would take legislative action to re-impose the retail competition model, which is what the California PUC meant by customer choice in 1994.

The big change today, and it's clear in the Green Book and it will be clear for much of the testimony up here today, is the emergence of the community choice aggregation. And all I want to say about that, as an advisor, and to introduce my friend Pat Wood, is I don't view that in any sense a reintroduction of the traditional model of retail electricity competition which, again, was repudiating resource portfolio management procurement, substituting something that basically blew up the system that we had.

Community choice aggregation is best understood as decentralizing the resource procurement models that we've had in the past.

And that doesn't mean that the community
choice aggregators that you will be hearing from do not themselves recognize that the need to be held at high standards in environmental performance, affordability, reliability. I think you'll hear that over and over.

As someone who spent time, in particular, with the Sonoma, Marin, and Peninsula community choice aggregators in recent months and years, I've been impressed by the sincerity of their commitment.

Of course, in the final analysis, everything hinges on actual performance. But I believe and I think you'll hear from them, and on this point I'm in agreement that, again, you've got the tools needed to make sure that everyone meets those high standards.

To the extent you need to have, as Commissioner Guzman Aceves asked, collective action. You've got the ability to collect charges on distribution systems from everybody on the system.

The Green Book affirms and I agree that no one is proposing to abandon that distribution grid. It remains an essential part of every electricity user's experience in life.
You are in a position to make, now, the policy choices that the Green Book has placed in front of you.

And now, to give you another perspective on how you should do that, I'm delighted to introduce my friend Pat Wood, and to remind you all that the chapter of the Green Book on Texas begins with the phase, "Texas is unique."

(Laughter and applause)

MR. WOOD: I drew the short straw and get to go after that, so thanks. Ralph, it's great to have you on this team and we've enjoyed working together.

This is my third interaction with the great California regulatory enterprise and it's a pleasure to be here. And my first was 20 years ago this spring, actually the day after Super Bowl XXXII in San Diego, it was Denver versus Green Bay I think. Ya it was, Elway and Brett, it’s good to see these old guys still on TV.

That was the day that the delegation from the Texas Legislature and the Texas Commissioners, two of the three of us, came here on a fact-finding visit. This was three years after then Governor Bush appointed me to the PUC...
with a characteristically blunt that, Pat, the utilities care more about what we, the Governor or Legislature think, than what their customers think. And that's wrong and we're going to change that.

So, we set up an ISO in 1996 I think was the nation’s first, I think we were a little ahead of PJM. It was a pretty rudimentary, pretty basic, set it up to facilitate wholesale competition. Because the Legislature wasn't ready to go forward with the full-bore retail, told us to go steady and figure it out.

So, we came out here. This was the pioneering place where the Blue Book was being implemented. And we spent a grueling two days here at the Cal-ISO, at the Power Exchange, talking to everybody and every -- probably none of you in this room, but the people that came here before you. We found out how does this work? What's the goal? What's the detail? It was already, I think, about two or three years underway. And at that point it was in '98, early '98 working pretty well.

We kind of got hung up on the Power Exchange and the inability to do bilateral
markets and honestly my Legislators said, I don't think this is going to work.

So, it wasn't until Pennsylvania and saw a different twist on your model that we got the green light. And at that point going ahead and the Legislature passed a comprehensive revised version of your Blue Book. And I should add, now 20 years later, it's worked out pretty well. Far better than even I expected it would be. So, thank you for all the heavy thinking.

As we say out here in the West, pioneers get shot and settlers get the land. I guess, thank you for the land.

(Laughter)

MR. WOOD: But unfortunately, my boss, about that time you were getting shot, got elected President and pulled me up to DC to "clean up the mess."

So, that began my second interaction here with the Cal book and the CEC. We worked very closely with the folks at the Energy Commission as well, and Michael Moore, a good friend of mine that preceded our members here today.

I was dedicated to getting the train back on track, but quite frankly had to just settle at
the end of my four years at FERC for just triage. Triage came in the form of market price manipulation -- I'm sorry, market price mitigation, which are the words that we used to tell Vice President Cheney we were doing price caps.

Market redesign from (indiscernible) -- you guys wrote the book on these things at the Cal ISO. The investigation of the market manipulation across the market which, quite frankly, broke my heart many times both in the power and gas markets.

The Governance crisis at the Cal ISO, which I won't say much about, but I would say I didn't play hardball then. If I didn't play hardball, I don't think the current FERC could play hardball. So, just solved those problems out here.

This is a full plate. So, this was wasn't a place of a lot joy and happiness -- but it was a place of a lot of hard work for me.

So now, two decades after my first tour as a student, and 17 years after my stint as an EMT, I'm back here as a grizzled, old gray imminent. So, I hope I can provide something
useful.

I really have to say two words of apology to the parties that wrote the great comments here. It is fun to get back into the mode of a Commissioner again after so long and read a full docket worth of comments. But you all write them as good as you ever did.

Customer choice, I want to apologize. As an Ad Hoc Advisor, I could have been better at this. Customer choice is not a problem to be solved. It's an opportunity to make California, and by extension the rest of the nation, yes, a Texan will admit California leads the way often on so many things, to make California a better place.

The team working on the Green Book, whom I have great high regard for, they don't feel that it's a problem, either. It's just we were busy doing a lot of things and so I'm sorry that term came over.

And secondly, I think the CCAs, who might have seems to me from these comments felt a little picked on. Don't. I think we didn't push the team to flesh out the details and to get the -- get it more cleanly explained to the rest of
us. But I think, for me, I find that a
fascinating and I think a very constructive force
to drive the fulfillment of the big three goals
that we have here of affordability,
decarbonization, and reliability. So, have to
get that out of the way.

I do think it's worthwhile to spend time
getting an umbrella docket done. I think the
vision question is so important in doing your
job. And if you have, particularly, the two
Commissions which are the power center of this
whole state and this economy. If there’s a
unified vision or relatively unified. I think
everybody's got the to bring their own thoughts
to the table. But a relatively unified vision
about where you're going.

And I hope that the four scenarios teed
up in the Green Book help crystalize that
discussion for you all.

That's a powerful and constructive force
for the people of California, is having a vision
and Commission here and the ability to implement
it. And it allows you to speedily address the
issues in the dockets that are pending before you
to actually implement this vision.
Of course, since I've learned it here, and we implemented it there. I do believe in full direct access statewide is the best way to not only fulfill your big three goals of today. But to position this bedrock industry for the decentralized, innovative, interactive power sector that we're evolving to work tomorrow.

Quarantining of the monopoly, utility to the task of enabling and supporting customer choices in technologies, rather than continuing a role in the competitive functions, is a core fundamental to get right. And I think with that comes a concomitant oversight of the costs of the regulated system, ensuring that only the things that are absolutely required to provide regulated utility service are paid for, and paid for fairly, by everybody.

The rest of things are optional charges. And I do know that your famous in this state for the stacked on charges here -- and I'll say a word about that at the very end.

And I would like to think it's a core issue for resource adequacy. I would like to think that you could get away from doing that. We actually never did it. Based on the Blue
Book, we did buy into the model and it has worked -- but you all aren’t there. There's a history there. It's not worth fighting that. It is an extra charge to pay for it, but it's -one that I think based on the long memories from 2000, even I wouldn’t recommend you jump out and not do resource adequacy.

But I do think you can aim the future toward bending that curve down to where as you get more robust participation on the demand side, with the implementation of storage and microgrids, and what have you, you can have that be managed by the market. You can have a lot of oversight - I call it the trust but verify, trust that it will happen, but verify that it's actually going on.

Based on my experience and I like this idea, I was fascinated. I shouldn’t say that I like it but I was fascinated by this idea in the comments of a centralized procurement authority. It reminded me of the old DWR days, for some of you grey eminents out there.

But for the legacy power contracts and possibly as a separate role as a central procurement authority for the future,
solicitations for renewable, as well as future solicitations for RA. It's kind of got a lot of potential capabilities there I should just say, from personal experience in my own market that I think that you'll get there a lot faster and way cheaper by letting decentralized customer decision making get you to your decarbonization goals.

A lot of comments from customer groups, including the CCAS in some regards make that clear. It will require a lot more work by generators and their marketing arms to sell power in smaller units to the Walmarts, the argets, the military bases, the independent school districts, the other commercial and industrial customers, retailers, Stanford and other universities. That's a lot of work. But there is plenty of balance sheet with all those people to get you to 9 gigawatts by 2024. Without a mandate, and without a state subsidy system we added 9 gigawatts two times over in a slightly longer time frame in Texas.

So, and it actually had the great benefit of dropping wholesale power rates because you can have a lot of zero-variable cost power being
introduced into the system.

So, I don't think that we need to get too
twisted up about resource adequacy and where's
the power coming from. That was a big issue in
2000. I can say, as one who's lived through it,
we don't need to be worrying about that today.

Make the necessary precautions there are a lot of
good advisors in the comments here today, but I
would say as one who's lived it, that does not
need to be the tail that wags the dog.

My old hero and fellow ABBA fan, Robert
Hertzberg, has filed a bill to open up -- that’s
the most valued gift I got as a public official
and I fought my ethics officer hard to keep it,
was the signed ABBA from Agnetha, Frida, Bjorn,
and Benny -- signed from Mr. Hertzberg that hung
in my office. And they're coming out with a new
tune in December, God Bless them.

(Laughter)

MR. WOOD: Okay, he -- and I know
Hertzberg's happy about that, too. He filed a
bill to open up direct access, which I was kind
of for, to the nonresidential customers. I think
that's a good start. That’s out of your hands.
You've got to deal with what you've got today.
But if that happens, I think that's a good start.

The Illinois model of opt-out municipal aggregations, which is kind of a cousin of the CCA, set up here is not a bad place to start on residential, since you're actually going there, anyway.

Much as I believe in choice and freedom, our usage for power electricity is greater in Texas and I think a lot more residential customers care about the size of their bills because we due to weather and a lot of other things and use a lot more power.

Here, particularly living on the coast, I walked 20 minutes and I didn't break a sweat here today. It's amazing.

(Laughter)

MR. WOOD: It may not be so important to a small customer. So, these aggregations that, well, there may be some constraints on freedom, maybe all that people really want. So, I'm not going to -- you guys know this better than I do. But certainly, put me down for full freedom, but if you've got to make compromises I think you've got some good structures already here in place.

Of course, we didn't really get to delve
in our advisory calls was what are we doing to
to get ready for the power industry of the future?
Undoubtedly, it will be much more decentralized,
I think. Not just more rooftop solar, but way
more two-way use of the distribution grid.
New York has done a lot of thinking on
that, as the Green Book reflects. We should make
sure that the new T&D, stranded costs don’t get
created in the interim. That we’re gold plating
a new rate-based that we’re going to have to deal
with later on transition costs. --
A final note, on behalf of the other 49
states, I never gotten to say this, so this is my
third time here, thank you for the ratepayer-
financed R&D in renewable storage and other
technology that you have financed for the rest of
us and that we are all benefitting from.
We recommend that like with the R&A, is
probably time to bend that curve downward.
Affordability is important to customers it's one
of the goals here. And we know that the non-
bypassable charges are substantial in California.
So, just a thoughtful, friendly remark here.
Speaking of thoughtful and friendly, I
would say the most heartening comment in this
docket was the shortest. And it was from the
gentleman whose name is David McCord, he said
I've got one suggestion, please add a section in
the Green Book on the benefits of increasing
customer choice and energy resources of all
relevant kinds and the ways we can take advantage
of them.

I feel this is very important. Customer
choice is happening. We need to recognize this
and find the ways to work with it in positive
ways that benefit everyone, win/win. Amen to
that.

All right, I look forward to sitting here
for the rest of the day and hearing all of these
other bright people saying a lot better things
than we did so far. Thank you.

(Applause)

MS. FELLMAN: Thank you very much. We
will hear from the Ad Hoc Advisory Committee at
the end of the day in a rapid roundup.

I'd now like to call up the first panel.

And welcome Mayor Sam Liccardo from San
Jose, who just arrived.

Commissioner Peterman has also arrived.

Did you want to make brief opening remarks while
the panel comes up?

CPUC COMMISSIONER PETERMAN: Good morning, everyone.

MS. FELLMAN: I just want to make sure everyone has their microphones.

So, now we'll go into our panels. The first panel of the day will address customer choice. How much choice do Californians want and how to provide it? Are we missing choices that should otherwise be offered?

As we've discussed already, the Green Book identifies many aspects of customer choice, including services, rates, suppliers and providers. We've talked about the different types already, so I won't go into that.

But today I want to say that we are very pleased to have representatives of those different points of view on choice. Thank you to our elected officials, Mayor Sam Liccardo from San Jose, and Supervisor Kate Sears from Marin County, who will talk about what do their citizens want. They are each in a CCA community and we want to know why did they choose to go with a CCA?

We also have today Michael Shaw, from the
California Manufacturing and Technology Association, who will talk about his large customers and how are they making their selection for different behind-the-meter installations.

And what do they want for the future.

And then, Sue Mara, who will speak from the energy service providers' view, and tell us a little bit about what's happening in the sometimes sidelined, in our conversation, ESP market, energy service provider -- electricity service provider market.

And finally, batting cleanup will be Dan Skopec from San Diego Gas & Electric, who will address the role of the utility in the future, which we've also talked about already this morning. And he will kick off a conversation about who should be the provider of last resort if it isn't the IOU?

I will now turn it over to Mayor Liccardo. Thank you.

MAYOR LICCARDO: Thank you. I don't believe the microphone's on. Can you hear me?

CPUC PRESIDENT PICKER: It's probably very directional.

MAYOR LICCARDO: Okay.
MS. FELLMAN: Or bring it closer to you.

MAYOR LICCARDO: There we go, perfect.

Thank you.

Commissioners, thank you for your willingness to have me here today. It's a great honor to be here.

My name's Sam Liccardo and I serve as the Mayor of the 10th largest city in the United States, San Jose. And we have just launched our Climate Smart San Jose Plan. We just focused on reducing greenhouse gas emissions to meet our Paris climate goals through a combination of several important initiatives.

But launching our Community Choice Aggregation Program is central to all of that and that is what's happening this very year.

We're also investing in rapid electrification in our transportation infrastructure. And we think integration of those two will be very potent in reaching those goals.

I represent a very diverse city. Almost 40 percent of us were born in the country, more than half of us live in a home where the language other than English is spoken. And that's an
important context as we think about issues of affordability and what really matters to my residents.

We will be the largest United States city to launch community choice aggregation this year. And we didn't take this decision lightly. And I'm grateful that we had folks like Supervisor Sears, who are leading the way and helping us to understand the opportunities, as well as the pitfalls.

But we had our first public hearings on this matter in 2011. We had dozens of meetings in the more than 6 years since. And I can tell you I was far from embracing the concept at the start. I was very publicly outspoken about my own concerns about the hard lessons learned from the California energy crisis. Concerned about resource availability and reliability.

And I only agreed to move forward, along with the unanimous City Council, when those questions were fully answered.

We did vote to move forward in 2017. And we stole some bright people here from San Francisco, including Lori Mitchell, who's leading our program.
And our municipal use will launch in September, with residential and business use in March of 2019.

What I know my residents are concerned about are precisely those issues you're concerned about, affordability, decarbonization, and reliability.

In addition, my residents are particularly concerned about transparency and local control. They recognize that revenues of utility-owned, investor-owned utilities certainly flow, as they always should, to shareholders, but they want to see those dollars invested locally. And particularly in improving our greenhouse gas emission challenge, addressing those challenges and improving affordability.

So, we know that we've seen statewide CCAs are able to offer affordability. That is, rates that are on average 3 percent below the incumbent IOUs.

Particular emphasis in San Jose is really ensuring that everyone can benefit from the green dividend. That you don't have to drive a Tesla to be a part of it and to benefit from what we're trying to accomplish.
And so, it's not just about reducing rates and ensuring we have rates that are lower than PG&E's but investing in energy-efficient retrofits and investments that actually improve outcomes for low-income communities.

And we've already procured long-term contracts that will enable us to operate our first year at rates lower than the incumbent IOU. We are rapidly building reserves. And we will ensure that reserves will take priority over any investments we make. And so, we will ensure, getting to the reliability issue which I'll address in a moment, that we will be ready.

On the issue of decarbonization our base offering in Phase One, with municipal users, will be 100 percent GHG free, with 40 percent renewables. We will be 100 percent GHG free to residents and businesses by no later than 2021. We think we can do it even sooner.

And our base target will exceed PG&E's renewable share by at least 10 percent, we believe, resulting in a reduction of GHG emissions throughout the city by more than 14 percent.

And we are exploring a lot of
reinvestments when we're able to get our reserves to a place where we're all comfortable. We will be focusing on investing on everything from electric vehicle charging infrastructure, to low-income solar programs, incentivizing energy efficiency retrofits in multifamily apartments, and energy storage.

And all that brings me to this issue of reliability. I appreciate the concerns of this board about resource adequacy and reliability. And particularly with the expansion of CCAs statewide, we know that is a growing concern. We applaud that CCAs have been a force for growing the use of renewables and we recognize the intermittency of that power supply does create challenges in planning.

Nonetheless, resource availability remains an issue for IOUs and CCAs, alike. And we share identical obligations and we certainly share identical regulatory challenges as well. And we expect and embrace continued regulation by the CEC, by CAISO, by FERC, the WECC to ensure reliability, and resource availability.

San Jose Clean Energy has met and will continue to meet our RA obligations, including
the CPUC's February 2018 ruling to meet annual forecast filing.

We've prioritized building reserves rapidly over net revenues, as I mentioned before. We'll put our investments on the back burner until our reserves are truly ready to go.

And we embrace many of the solutions needed in the future to ensure resource availability, including the creation of regional grids to balance resources over larger geographic areas, and increasing energy storage. And we think they're great logical solutions, including a few in our own Silicon Valley, that are rolling out rapidly.

Offering consumers time-of-use rates to incentivize shifts, used for peak supply periods, and integration of electrification to provide distributed battery storage for the grid. We're actually engaged in several pilot projects right now, both with our local transit agency and the city in that effort.

And we look forward to collaborating with the CPUC and with all of our stakeholders to expand customer choice and build a cleaner, more reliable grid. And we're also committed to
becoming the world's first gigawatt solar city. We believe that CCAs will enable us to get there. Thank you.

MS. FELLMAN: Kate Sears.

SUPERVISOR SEARS: Good morning, Kate Sears. Can you hear me? There we go. It works just like our microphones.

Kate Sears, Marin County Supervisor and Chair of MCE. It's a pleasure to be here and a pleasure to be here with my colleague, Mayor Liccardo.

CCAs help advance policy and on-the-ground solutions related to social equity and environmental justice. The CCA model complements the regulated utility model by introducing a diversity of approaches that incorporate local priorities and accountability.

This diversity should be embraced in an expanded dialogue to solve issues facing the state's electricity market.

MCE was created in December 2008 because Marin residents and elected officials wanted the power to choose. They wanted an option that was not an IOU. They also wanted an option for cleaner power at competitive rates. And they
wanted transparency and the opportunity to engage
directly with decisions makers through the MCE
Board of Directors, all of whom are elected
officials.

And they also wanted customer programs to
serve the local community and create local
opportunities.

All of these goals have continued to
resonate as MCE's territory has grown to four
counties and its customer base has become ever
more diverse.

When MCE first expanded to Richmond, in
2012, I frankly wondered how a CCA that was
launched in Marin County would be received. We
were delighted when Richmond customers opted up
to MCE's 100 percent renewable option at higher
rates than any other community at that time.
Today the record is held by El Cerrito.

MCE today serves a wide range of
Californians, from agriculture customers, to
single family homes, to low-income, multi-family
residential units.

We have an obligation to serve all of
these customers, which means we can't take a one-
size-fits-all approach. We need to tailor our
programs to provide solutions for the challenges our diverse customers face.

MCE administers its own programs, focused on workforce development, demand response, electric vehicles, and customer generation. MCE also administers energy-efficiency programs on the same footing as utility program administrators, authorized by the CPUC and funded by ratepayers. MCE has tested new approaches and introduced new policy perspectives in these areas.

MCE's strong local relationships help inform our priorities, and our program design, and help define our local opportunities. This is why MCE is so focused on multi-family housing with our energy-efficiency programs. It is why we build a solar farm on a brownfield site, at an oil refinery in Richmond that created 340 jobs. And it is why we invest in local workforce development by setting up a call center in Pittsburgh, a part of our service area with a significant local, low-income population.

MCE is proud to be and to have been the first CCA formed in California and we're really excited about the creation of other CCAs around
the state. CCAs are an integral part of the California Legislature's plan to prevent a major breakdown in our energy market and meet the state's climate change goals.

Governed by robust legislation and regulatory requirements, CCAs are performing as intended, providing reliable, affordable and clean energy to local customers, and delivering innovative programs that address both local needs and state goals.

We believe the best solutions to issues facing our electricity market arise out of collaboration and communication. We're pleased to be part of the conversation here today. And I hope that all of you will come and join me for a board meeting or two, so you can see what it's like to run a CCA in a public environment. Thank you.


MR. SHAW: Yes, thank you, Commissioners.

I'm happy to have the opportunity to be here today to see some familiar faces.

I wanted to share a little bit of the customer perspective on where things are and where we're going. But before I do that, I want
to give a really quick context.

Obviously, the issue of affordability is critically important to manufacturers, in particular. Many of these are in an energy-intensive industry. So, energy in and of itself is certainly one of their largest costs, in many cases eclipsing the labor or any of the other input materials.

So, it's really counted on a per-unit basis and for many manufacturers. And that means that when they look at rising rates, for whatever reason that may be happening, it does impact their decision making for where they put investments.

Currently, California industrial rates on average, across the state, are 86 percent above the national average. That is not really an acceptable situation.

We are 113 percent above our fellow Western States. That puts us at a significant competitive disadvantage because it is easy to transport those goods across the border into California, in many cases.

One thing I was reminded of when I worked for the Trucking Association several years ago,
was that two-thirds of the population lives east of the Mississippi. So, when it comes to -- in the United States. So, when it comes to production of goods, the further east you go, certainly there's lots of opportunity.

However, California has a lot of, you know, a lot of access to the Pacific market, et cetera, that create lots of opportunity, make us an attractive place to be. But it does not eclipse all the other costs, in many cases, that we impose on California manufacturers.

The effect of a lot of these things, and not just energy rates, certainly, by any measure, but an effect of a lot of this issue and a lot of other issues has resulted in California receiving about 4.5 percent of new manufacturing investments in California since 2010. That's a significantly lower amount than the percentage of our economy that manufacturing represents at 12 percent. That is not a sustainable number.

It also means that we are not growing manufacturing jobs, which are the jobs that fill in that middle space. We have lots of growth happening on the higher-end sector, we have lots of growth happening on the lower end, in the
service sector, et cetera, lower-wage jobs. But those jobs in the middle, the manufacturing jobs that provide an opportunity for someone without a degree to move into a higher standard of living to provide for their families and take care of their communities that is where we are seeing a gap.

So, it is with that that we keep in mind, you know, the three principles that I think we have been asked to address here, which is affordability, decarbonization and reliability.

Affordability, I have talked about.
Decarbonization in California being the one state in the nation that's currently seeking to aggressively reduce GHG emissions and carbon in our economy through a variety of programs, including the Cap and Trade Program, which many manufacturers participate in is something that is a unique thing. That we do need to keep in mind it adds to the -- it creates an additional challenge on the affordability side, but it is something that we are working to pursue.

In addition to that, you talk about reliability. Well, certainly for manufacturers the reliable supply of electricity is critically
important. Can you imagine losing power in the middle of a production line? In many cases that product would be entirely lost.

So, how do we solve these? We believe that choice is a big part of that. It addresses the issues of affordability, decarbonization and reliability, as well.

And we believe the issues like direct -- or opportunities like direct access, distributed generation and energy efficiency represent opportunities where manufacturers, through investment and taking advantage of choice, can help to control their energy costs and make further investments to the State of California and our economy. thank you.

MS. FELLMAN: Sue.

MS. MARA: Thank you, Commissioners, happy to be here. Direct access began in California 20 years ago, April 1st, 1998, and it still remains the significant market segment in the state.

Electric service providers, ESPs serve about 42,000 customers in the state, and more than 24,000 gigawatt hours of load, which is about 63 percent industrial and 36 percent medium
Customers have clamored for direct access since it reopened in 2010. Initially, there was a four-year phase-in and there was a quota to be filled every year. Every year it filled within seconds for each of the utilities.

Since then there's a waiting list. And as of the end of December 2016, there were 1,600 customers on the waiting list, waiting for direct access that never came. The waiting list is used if any cap space becomes available, and usually very little does.

In fact, the number of customers on the waiting list have nearly doubled since 2012, when it began. Clearly, customers want more choice.

ESPs are in the business of serving their customers. And this means that customers have contracts tailored to meet their specific needs. So, customers can meet their own goals, sustainability, price risk management, budget certainty, certain kinds of products like renewables they want to purchase.

In fact, the ESPs offer innovative products and services to their customers across the country. For CNI customers this means that
they can have fixed rate -- fixed rate contracts.

They can buy carbon-free products. They can buy renewable products, demand response programs.

Market-based rates. Power devices with enhanced energy management. Block chain technology that provides peer transactions and on, and on.

These all meet the three objectives in the Green Book. They make electricity more affordable for the customers, they improve reliability, and they help decarbonize.

Significantly, these innovations begin in states with more competitive retail markets.

What should be the role of the utilities with expanded retail choice?

Utilities should transition to wires companies that are -- and giving incentives. If they do that job well and if they facilitate retail choice, provided by others. If they want to provide competitive services, it should be done through affiliates only, with very strong rules and enforcement.

And regarding the three objectives in the Green Book, ESPs have met and will continue to meet all the state's requirements for decarbonization and improved, and ensuring
reliability.

The lengthy waiting list for direct access is indication that its customers believe its affordable.

In summary, competition benefits all customers. The direct access cap limits competition and hinders -- new entry -- it should be lifted. Thank you.

MS. FELLMAN: Dan.

MR. SKOPEC: Dan. Thank you, Commissioners, for the opportunity to address you. Last year I participated in a similar En Banc on this topic, prior to the publication of the Green Book. So, I appreciate an opportunity to continue this conversation.

We were very encouraged by the publication of the Green Book. I think one of the most important elements to it was the acknowledgement that significant changes are happening to energy markets. In some cases, they're beyond the recognition and control of policymakers.

So, we're eager to have this conversation and assist as we may be able to.

Let me be very clear up front, SDG&E is
open to retail choice. We support a customer’s right to choose.

We recognize and do not necessarily object to the notion that we may be a wires company in the future. That we may be managing transmission-distribution system. So, we're here to have that conversation.

But before we move there, we have to address -four things --

MS. FELLMAN: Can you speak more into the microphone, please?

MR. SKOPEC: Sure. Before we move to retail choice, we need to address four key items. Number one, great architecture. Two, stranded costs. Number three, resource adequacy, and number four, provider of last resort.

So, on the first topic, great architecture. The transition to retail choice by definition requires unbundling of rates. Retail providers need to be able to isolate (indiscernible) for customers based on the commodity product, while distribution utilities need to be able to continue to charge customers for the use of the grid.

Today's bundled rates result in
significant distortions depending on a customer's overall usage or their adoption of technology. The IOUs have been advocating for an unbundling rates for over five years, now.

And the good news is the Commission has the authority it needs to address these issues. As you'll recall, in 2013 the Legislature passed AB 327 that gives the Commission the authority, to rectify this distortion in rates, and address unfair cost shifts right now.

Now, let me just put a finer point on this. Today, in San Diego Gas & Electric service territory the NEM cost shift amounts to $400 million a year. So, on average, when you calculate the number of NEM customers we have just in the residential sector, that's a $2,800-a-year benefit to a NEM customer. These are the type of distortions that need to be addressed when we unbundle rates.

Second, stranded costs. Over a dozen states and several nations have gone through the process of deregulating the electricity markets. One issue that they all had to contend with is stranded costs. As customers leave the regulated utility service who pays the costs left behind?
While, each state and jurisdiction has a different set of stranded costs to deal with, in every case the regulators had a portion of those legacy costs.

As the Green Book states, in California's original deregulation there was a plan for stranded cost recovery. It was laid out in the Legislature and implemented by the PUC. And despite all the chaos that happened in the California energy crisis, the PUC managed the stranded cost recovery fairly well.

But as President Picker has noted, this time we don't have a concrete plan for customer departure. What we have is an outdated mechanism, PCIA. PG&E has stated that the current mechanism is only about two-thirds effective in allocating costs of departing customers.

And I know the PUC is well-aware of this challenge and you're intending to address it in PCIA OIR. Departing load customers should not be surprised by this action. It's a process that's been dealt with in every single deregulatory movement across the country. By addressing the flaws in the PCIA, the PUC is simply complying
with the law, SB 350.

Third, resource adequacy. Whether the state moves forward with retail competition or not, the rise of CCAs has forced the PUC to address the issue of resource adequacy anew.

The Commission took an important step yesterday in adopting the proposed decision on resource adequacy. And I know Commissioner Randolph noted that there's going be additional important measures that are considered in track 2 of that proceeding.

We applaud the Commission for addressing resource adequacy in an expedited manner.

In the future, if disaggregated, load serving entities, SDG&E believes the state should form a centralized procurement entity. Not necessarily for all procurement. LSEs can still procure the majority of their needs for their customers. But there needs to be a backstop for such special circumstances like system reliability, local reliability, or to achieve maybe certain clean energy goals.

A centralized procurement entity can assure that resources are procured cost effectively and that all customers pay an equal
proportion of those costs.

SDG&E believes that the CALISO can serve as this function.

Last, I'd like to address POLR, the provider of last resort. States certainly need to address the issues around POLR because POLR is an important consumer protection mechanism in the context of retail competition. It also has the potential to blunt the efficiency of markets, if not handled properly. An I think a lot of jurisdictions saw that.

Under a scenario in which the regulated utility serves a small share of the load in its service territory, we don't believe the utility should play the role of POLR. If not us, who?

One option is to make that the responsibility of the centralized procurement entity that I mentioned previously, like resource adequacy.

Another option is to auction off that responsibility to willing third parties.

Whatever the choice, the state needs to recognize that the responsibility comes with burdens and risks. And whoever provides that responsibility needs to be compensated as such.
Thank you very much and I look forward to the conversation.

MS. FELLMAN: Let's let it begin. Who would like to ask the first question? President Picker.

CPUC PRESIDENT PICKER: So, we're in a very turbulent time and there are a lot of new players, and I think probably the question that Senator Hertzberg is asking with SB 327 which would lift the cap on direct access, sort of states the challenge to all the different parties here, in different ways.

So I'm going to ask a couple of questions to go around that. If this bill doesn't succeed, then I expect that something will come forward. This is really going to allow the commercial and industrial sectors to have full retail choice, while residential customers will still be in a variety of different kinds of vehicles.

And so, I want to start by just asking a couple of questions of the Clean Community Aggregators. And it's probably something that's going to have more impact in San Jose, than in Marin Clean Energy's territory.
But what happens to you and the long-term contracts you're signing if a large portion of your commercial and industrial base now has access to services from electricity services providers? How do you manage to keep your commitments in your long-term contracts? What does it mean in terms of your ability to keep your rates low?

I'm just curious, do you do risk management that looks at these kinds of potential challenges and changes in the market that you're trying to structure?

MAYOR LICCARDO: Thank you, President. Certainly, you know, we're agnostic to the issue about raising the cap. We recognize its value to direct access. We obviously would like any lifting to be done collaboratively with local jurisdictions, so that we can ensure that we are making our long-term purchases in a way that enables us to provide appropriate level of resources.

So, I'm confident, you know, however this is done, as long as it is not a sudden shock to the system, we'll be prepared. And, you know, we've already procured our first set of contracts
so far. We're ready to go, certainly for
municipal contracts and residential contracts in
2018 and 2019.

CPUC PRESIDENT PICKER: So, you're going
to have to do the hand-held mic. I'm afraid
we've had this problem before. So.

MAYOR LICCARDO: But we'll be in
communication with those industrial users, as we
are today. The benefit of local engagement is
we're talking to these companies every day and
we're understanding what they want. And by
enabling that communication, we'll be able to
anticipate those needs and scale back our
purchases, if they choose to go the direct access
route.

CPUC PRESIDENT PICKER: So, that sort of
leads me to the provider of last resort. Because
not all jurisdictions can survive that kind of
sudden departure of load and/or migrate their
contracts.

Do you have thoughts about what the
structure of the provider of last resort should
be? Do you have -- again, this all goes to this
question of the disaggregation of risk
management, which many people here represent.
How do we deal with that? What is your preference? Or, how do we actually get to that conversation with all these different players that are emerging?

MAYOR LICCARDO: Yeah, we appreciate there's reason to reexamine the role of utilities as provider of last resort. I don't pretend to have the answer here. I know this is going to take a very substantial public process.

We recognize IOUs may or may not want to be not to be in that position.

What I do believe is that as there's lifting of the cap, I would venture to guess that this body would not simply lift it without constraint, that there would be some gradual process that would enable both the IOUs and CCAs to --

CPUC PRESIDENT PICKER: I don't know that it's going to be up to us anymore than the creation of CCAs. I think we're going to be handed a legislative fiat.

So, I mean, these are the kind of things that worry us. And just while I applaud your ambition, I'm still a little concerned that we don't have the kinds of consensus or even clear
options as to how we manage these things. So, I'm appealing to you to help us think beyond the kind of simple ambitions that you articulated to these challenges that we face, making sure that there is a provider, that we have that reliability of service.

MAYOR LICCARDO: Yeah, I think it might be better for us to provide some comments in writing. Frankly, I'm not prepared to answer that question today. But what I would suggest is, well, we're in constant conversation with the Legislature, just as we are with our customers. And I'm confident this can be done collaboratively in a public process.

CPUC PRESIDENT PICKER: This does sort of flip your model on its head. You are pretty much an opt-out system. People are automatically migrated into your system. Now, there's a choice for some of your customers. Would you favor giving that same choice to all of your customers?

MAYOR LICCARDO: We don't object to the notion of choice.

CPUC PRESIDENT PICKER: So, I'm suggesting should you be opt-in across the board?

MAYOR LICCARDO: Well, no, we believe
that the opt-out is the appropriate approach.

CPUC PRESIDENT PICKER: Okay. So, at the far end, as I kind of have a sense of where you guys are on this --

SUPERVISOR SEARS: President Picker, I wonder if I could jump in on a couple of these issues before we leave the CCA --

CPUC PRESIDENT PICKER: Sure.

SUPERVISOR SEARS: -- unless you want to go back and come back to me later.

CPUC PRESIDENT PICKER: Well, you know, I'm looking at your service area and your territory, because that's what I do, I don't that it's going to have as much impact on you as a much more industrialized and large commercial serving --

SUPERVISOR SEARS: And that could be true. But there's a couple of things that I'd like to flag that I think are true for all of our CCAs.

CPUC PRESIDENT PICKER: Okay.

SUPERVISOR SEARS: You know, as Mayor Liccardo says, the CCAs have not taken a position regarding the cap on direct access. I think it's an important conversation that, obviously, you're
deeply engaged in, and making sure that any
expansion furthers the goals that we're all
looking at here of affordability, reliability,
decarbonization, and social equity.

For us, of course, in addition to that,
as local governments accountability and
transparency is tremendously important and so we
want to make sure that those factors are in the
mix.

But, you know, one, a big part of my job
as a Board Member of MCE is making prudent
decisions that keep us successful in the long
run. And I'm sure that the other CCAs are
governing themselves in the same way.

And so, we have a portfolio approach of
short- and long-term contracts to give us price
stability, also allowing us to capitalize on new
opportunities.

And another important part of our
management of our agency is maintaining, and
managing, and increasing our reserves. So, to
allow us to procure power at competitive rates.

And so, I think these are sensible
management principles that I think you'd find in
many organizations. We've worked very hard in
all of these regards, particularly on the reserve side of our financial management. And we're very pleased that we just received an investor grade rating from Moody's. And it took some education because CCAs are a new animal.

So, I wanted to come back and touch on some of those long-term planning and stability issues for CCAs.

But on the provider of last resort issue, I think -- I'm really glad that both the CPUC and the Customer Choice Project is looking at this issue. CCAs are serving 80 percent or more of the customers in our service area, yet the utilities hold onto resources and the state requires a bond posting in case all those customers return.

This distorts the energy market and adds unnecessary costs to CCA operations. We should seriously explore CCAs serving as the POLR to eliminate some of these distortions and reflect the reality that CCAs are the default provider in our service areas.

Perhaps the IOUs should serve as the POLR in areas without a CCA, which could be done through a contracting model as is in the case in
But all of these are issues that I think needs to be explored through a CPUC public process and just ideas for us all to consider.

Thank you.

CPUC PRESIDENT PICKER: Okay, I just -- I'm still a little nervous because both of you said you haven't really thought about this and that -- it just worries me that maybe there's not the kind of risk management contingency planning that we expect and require at the regulated level. So, I'm a little anxious about it and I’ll continue to be anxious about it.

SUPERVISOR SEARS: And fair point. And I hear that from some of our board members who are focused on risk management and we do think about it. I think that us, like you, are as struggling with complex questions and there's a lot of factors to be considered. We want to be part of the conversation.

MAYOR LICCARDO: So, and President Picker, we would be prepared to be the provider of last resort that's ultimately the direction of regulation. And, obviously -customers could opt out.
CPUC PRESIDENT PICKER: Yeah, I'm just --
I'm still concerned about that concept because
already I hear that you haven't thought about
these kinds of rapid changes that sometimes take
place in the markets that might put some of your
investments at risk. So, I'm anxious about that.
We probably will have to actually set some
standards for the provider of last resort, beyond
just simple energy supply so that we can
guarantee that they'll be there for the
customers.

Again, if you have a portfolio of long
and short, and all of the sudden lose a large
part of your base, you are at financial risk
because of those long-term contracts. That means
that your ability to function in the short-term
markets is going to be additionally constrained
so --

SUPERVISOR SEARS: And let me --

CPUC PRESIDENT PICKER: These are the
kind of contingency plans that we would expect to
see.

SUPERVISOR SEARS: They are. And that is
why we think reserve, our reserves are very
important and we do have credit contingency
plans, also.

CPUC PRESIDENT PICKER: Okay. At the other end you raised the issue of whether or not we can move to a more complete compensation for your T&D, your transmission and distribution services. But the Legislature has constrained the rate at which we can actually make you whole under those costs separately from the conduit rates. So, are you seeking to have them addressed in the Hertzberg Bill? Or, where will we get the ability to fully consider both the costs of transmission and distribution services and decouple that from the volumetric sales of electricity. That's the big rub there.

As long as the volumetric sales of the electricity departs, you have to kind of deal with the remaining customers and load it into their bundled costs. That's always problematic.

MR. SKOPEC: Yeah but, you know, we believe that AB 327 does give the PUC much of the authority it needs. You're right that it does cap fixed charges at $10, if that's what you're referring to.

CPUC PRESIDENT PICKER: Yeah.

MR. SKOPEC: But it doesn't mean that
there can't be a significant amount of unbundling of rates. And if you're going to move to retail choice, you have to do that anyway.

Today we have cross-shifts between commodity and transmission and distribution.

Both of those would have to go away by definition. So, you know, I haven't read all of Senator Hertzberg's Bill, yet, but if all it does is raise the cap on direct access, then he's missing a number of pieces that have to be addressed.

And, you know, I'm sure this is an effort at stimulating the conversation. But, you know, deregulatory movements are complicated and, you know even AB 1890 for as flawed as it was, tried to address all of these things. So, if there's going to be a piece of legislation that it does that, we want to make sure that great architecture is addressed. And we would be happy to have that conversation about, you know, the cap on fixed charges at that time. But we also need to address stranded costs. We also need to address, you know, for resource adequacy provider and then POLR.

CPUC PRESIDENT PICKER: Okay, thanks I'm
saving up all of my questions for future forums but I’m going to pass it over to other Commissioners?

CEC CHAIR WEISENMILLER: Yeah, I've got a couple -I was going to start with Sue Mara. What's the spiltion ESP procurement between long-term and short-term contracts, if you know?

MS. MARA: I'm sorry, I don't know. Sorry, I don't really know the answer to that question.

CEC CHAIR WEISENMILLER: Do you know if ESPs, what's their balance sheet -they're putting behind their procurement?

MS. MARA: If they do what? Say that again?

CEC CHAIR WEISENMILLER: Do they put their balance sheet behind their performance, behind the procurement?

MS. MARA: I don't have a personal knowledge of that, I'm sorry.

CEC CHAIR WEISENMILLER: Okay, that's fine. Going to CMTA, what's been the experience of your customers located in CCAs relative to the IOUs?

MR. SHAW: I have not heard from our
customers in CCA territories in terms of their satisfaction, or dissatisfaction of performance.

And at least I take that as things are operating well, because I haven't heard any complaints.

CEC CHAIR WEISENMILLER: Okay. Starting with Marin, what happens in Marin if people don't pay their bills right now?

SUPERVISOR SEARS: We go after them and try and get them to pay their bill.

(Laughter)

CEC CHAIR WEISENMILLER: That's good but you don't send them back to PG&E or something?

CPUC PRESIDENT PICKER: Code enforcement or --

SUPERVISOR SEARS: Pardon me?

CPUC PRESIDENT PICKER: Code enforcement or do you have staff who do that?

SUPERVISOR SEARS: We have staff that does try. I mean, I think, ultimately, they do return to PG&E. But we always try to get money out of our customers if we can, like any good organization.

CEC CHAIR WEISENMILLER: Exactly. Yeah, I'm just trying to figure out, and do you have
any sense --

SUPERVISOR SEARS: We're customer friendly, but not that friendly.

CEC CHAIR WEISENMILLER: Right. Yeah, there's limits. Do you have a sense of what your -per se POLR function is now?

SUPERVISOR SEARS: What are our --

CEC CHAIR WEISENMILLER: Well, right now, to the extent that, if you're serving the people who aren't paying their bills, do you have a sense of what that would be -- before you send them back, what the percentage is?

SUPERVISOR SEARS: I don't. I think it's relatively small. And apologies for my bad memory because we had been briefed on the board about this. It's a relatively small proportion, but I don't remember the percent.

CEC CHAIR WEISENMILLER: That's fine. You can submit written comments later.

SUPERVISOR SEARS: Okay.

CEC CHAIR WEISENMILLER: The question for both of you is when CCA first started as a concept back, you know, when P&E was in bankruptcy, and as Edison was on the edge, the normal argument of the proponents for the cities
that create balance sheets, that if they could put those balance sheets behind procurement.

Obviously, you're not doing that now. What would it take for you to actually put some skin in the game?

SUPERVISOR SEARS: That's a good question. You know, and that's a very perceptive question based on the history, certainly our history in the creation of Marin Clean Energy, before it became MCE. Because there was a lot -- I think, as Mayor Liccardo highlighted, not everyone was an immediate fan, let me put it that way, right.

CEC CHAIR WEISENMILLER: Yeah.

SUPERVISOR SEARS: And many of our jurisdictions, being prudent, elected local officials who were very concerned about any potential impact on their budgets. And they were just concerned about what would be -- would this be a successful new model that no one had experience before.

And so, I think it's a very perceptive question. You now, it could well be, and certainly with the growth of MCE we have, you know, a four-county territory now. We have board
members who have been on the board for a long time. We have a trajectory of success. We have growing reserves. We have, you know, a Moody's investment rating.

We have, I think, a lot of confidence in the quality of our agency and our ability to manage. And I'm knocking on wood because you never want to be over confident. You do want to do the risk assessment.

I think going forward that's something for us to think about with our board members, and whether there is an openness to our member jurisdictions. It's not something that we've talked about because the model as we have it is working extremely well. And so, there hasn't been a need to get into the fiscal pocket, directly, of our member agencies.

So, I don't have an answer for you to that question because the model's working for us well, now.

Perhaps I'm not really addressing what your concern is.

CEC CHAIR WEISENMILLER: I think, again, as you've pointed out, the rating agencies have more confidence now, presumably you have more
confidence in the business model.

SUPERVISOR SEARS: Uh-hum.

CEC CHAIR WEISENMILLER: So, the question is at some point, you know, would you put skin in the game, obviously there's always the tradeoff between risk and return. But at this point the proposition might look like the cities, is basically money for nothing, and you know that's a good slogan, but I think going to the power business you also have to be prepared to take some of the risk, particularly looking at long-term procurement.

SUPERVISOR SEARS: You know, I think it's an interesting question and something we could, you know, think about. We'd obviously have to look at the benefit of doing that.

Of course, as an elected we all are in jeopardy. We all run the risk of what our constituents think about our performance. And, certainly, there's been a lot of attention on MCE over the years, every step of the way from our residents.

And with our expansion, you know, since 2012 there's been a lot of focus on how we run our business and the quality of our organization.
each time we go into a new community.

So, I feel like we've been sort of constantly vetted by different groups of constituents and different groups of electeds who've have taken a hard look at our organizational model, what we have to offer in terms of local benefits, and job creation, and local ability to impact and frame our programs, and our fiscal solvency.

So, I guess that's making me say that I think we've got a model that's working really well at this point.

MAYOR LICCARDO: Commissioner, if I could just add, we are putting our general fund at risk, and obtaining a $50 million credit facility during the period until we're able to build the necessary reserves, our general fund is at risk.

SUPERVISOR SEARS: And, of course, Marin County did put some money in right at the beginning, too.

CEC CHAIR WEISENMILLER: Okay, thank you. I have a question, Mr. Skopec. Do you have a sense of what magnitude of your potential stranded costs are?

MR. SKOPEC: I don't have that number off
the top of my head. It largely includes the long-term contracts that we signed to meet the renewable portfolio standard. We have a small amount of generation, still, so it would be those two components. But I can't speak to that off the top of my head, that number.

CEC COMMISSIONER MCALLISTER: I just had a very quick question, so for the CCA representatives. So, I'm very happy to hear you talk about all the multi-family and efficiency equity and environmental justice, you know, work that you’re doing.

I guess, fundamentally, you know, the CCAs are not decoupled. And I wonder if you can speak to the -- you know, when push comes to shove - sort of what your priorities are going to be in terms of your resource planning without that indifference?

SUPERVISOR SEARS: So, serving our local communities is a tremendous priority for MCE and I think for all CCAs. I mean this is -- as I said at the beginning it was an important reason for our creation. It was important to our constituents and it's been important every step of the way is that local connection and how we
frame our local programs.

One of the things that we heard about, a constant drum roll, when we were only in Marin County was people wanting us to create local generation of renewable energy. That was a goal from the very beginning and, obviously, it takes resources to do that. And it's only been very recently that we've been able to have -- we opened our Solar One project in Richmond, which is the largest renewable energy generation project in all of the Bay Area. And we're pleased to have gotten to this point. We also have some local renewable generation located in Marin County.

So, really tailoring programs, making sure that we have affordability, making sure that our energy-efficiency programs are really tailored to the specific needs of our communities, making sure that we're enhancing local renewable energy generation. One of our goals, when we first got started was to try to push the development of renewable energy in the market as a whole, but really focusing on our locality.

So, the importance of our local workforce
development is something that will always be a priority to us. I mean, I think it is really a strength of a CCA is our local impact and the importance to the community of having that local impact.

So, perhaps I'm misinterpreting your question. But that's not something that we would ever say we've been there, done that with the local impact, and we're going to move on and do something else.

CEC COMMISSIONER McALLISTER: No, just wanted to speed -- sorry to stop you talking, but just wanted to speed things up because I know there are questions coming up.

Like but decoupling, decoupled sales from revenues. So, it's not really a generation issue, it's more of a demand side issue. And so, I think if you don't have that incentive to really push for efficiency and you're impartial to the actual revenue impact of that, then that is a potential concern for me.

SUPERVISOR SEARS: Well, do have incentive. So, we do have an incentive to push for efficiency. We want to be offering the products at competitive rates.
CEC COMMISSIONER MCALLISTER: Absolutely.

MAYOR LICCARDO: Well, and as I stated earlier, our only priority right now is building reserves so the dollars aren’t going to be invested until so we’re ready and we know that we’re in a secure position.

Our priority is not much different from Marin’s, we were primarily focused on local generation of renewables, distributed energy storage because we know that’s going to be critical as our portfolio’s shift increasingly towards renewables. And toward equity and that is enabling affordability for the low-income residents.

CEC COMMISSIONER MCALLISTER: Thanks.

CPUC PRESIDENT PICKER: But I think Commissioner McAllister was asking a pretty reasonable question. I mean if you’re building your reserves off of some portion of your sales of electricity, but what energy efficiency investments do is reduce your sales of electricity, how does this perpetual motion machine work? So, I think that’s what we’re talking about.

What we’ve seen is that Marin Clean
Energy is -- I mean, I haven't seen any -- and Sonoma's Clean Energy they really promoted the (indiscernible) -- which doesn't come out of their sales budget. It's a good useful thing for a local agency to do --

SUPERVISOR SEARS: And we have that program as well.

CPUC PRESIDENT PICKER: But again, it doesn't have the same kind of financing opportunity and investment that the utilities do because of their scale and their ability to actually role that back into their grid charts.

Is that going to be something that continues to be financed by transmission and distribution? How does this begin to work? I think that's what I'm your trying to get at.

CPUC COMMISSIONER PETERMAN: And I'll note that we do have a panel later on where we'll have representatives from the energy-efficiency community and renewable community, because I do think this will be an important issue.

As you noted, Marine has an energy-efficiency program, but that program and allocation of funding is still designed on a model where the majority of the programs are
provided by the investor-owned utilities. So, if we do move to a different regime, it could be a very different funding scheme.

And we are seeing, perhaps, some seams issues with aligning these programs. But I do appreciate that we're still early on in those periods.

SUPERVISOR SEARS: Right.

CPUC COMMISSIONER PETERMAN: But let me switch to a different question. Mr. Skopec raised the idea of a central buyer. And one of the benefits, potentially, of a future central buyer is doing procurement that has, maybe, broader policy goals for the state.

And this is a key interest of mine. We've seen over the years that utilities have been asked at times to do procurement that has broader benefits than perhaps their service territory. Most recently, for example, biomass. Or, when we've had legislation that's targeted on investor-owned utilities and publicly-owned utilities to step up and do something, like energy storage, it is the investor-owned utilities and the PUC that move forward with the programs more in advance of the publicly-owned
So, this is a broad question which is how do you see going forward, and this is for our CCA representatives, but also Ms. Mara, anyone else interested, going forward with various different providers when we have policy goals that may or may not -- which may not be in the best economic interest of your territory. How do you participate in that system? Is a central buyer the appropriate mechanism for that? What type of legislative direction would you be anticipating to enable these changes to happen in a very quick manner. Because requests happen much more quickly than a legislative cycle will allow.

SUPERINTENDENT SEARS: Right. So, as you know, Commissioner Peterson, we do procure very broadly. And, you know, that's been our mission from the beginning, as I indicated, was really to use our procurement to help push forward the renewable energy market and the development of renewable energy in the State of California. And so, it's important to us, as a local CCA, to retain our nimbleness and our ability to really target our procurement and target our investment to emerging technologies. Battery storage is an
excellent example. We also have an agricultural
community that has very different kinds of needs
and we want to work closely with them.

And so, when you say central procurement,
I start getting very nervous, right, because the
on-the-ground ability to procure and maintain
that flexibility, and maintain the nimbleness,
and make sure that we are really pushing forward
different kinds, forms of renewable energy that
are appropriate for our communities is
extraordinarily important to us.

I think in an overarching way we all
share similar goals. Right. This isn't, in some
ways, a conflict. I'm trying to think of where
would we run into a conflict of a form of energy
procurement that was important to us locally that
wouldn't serve the state mandates? I mean, we
need to comply with the state mandates and we're
working hard to do that.

And so, I get -- I want to make sure that
we are able to maintain our flexibility and
procuring on our own and making those decisions
on our own.

CPUC COMMISSIONER PETERMAN: All right, I
think that was a reasonable answer. But as you
know, the devil's in the details, and so we won't get into the specifics.

SUPERVISOR SEARS: Certainly.

CPUC COMMISSIONER PETERMAN: But I do have a broader question about absent a central buyer how do we go about coordinating procurement across different entities for broader state goals, that may or may not be explicitly legislated? And I think it's not -- you don't have to have a full answer to it, now, because part of it is we don't -- it's hard to anticipate what those goals might be.

But I think as a state we have relied on a few entities as the procuring entities to pursue these goals. And it is a different paradigm when we're talking about many institutions.

MR. SHAW: Commissioner Peterman, if I could have a moment?

CPUC COMMISSIONER PETERMAN: Yeah.

MR. SHAW: It's an interesting question that you raised there. I think, you know, Mr. Wood's comments earlier, Soviet-style central planning comes to mind when you're talking about a central buyer.
But the issue is, you know, we would certainly want to encourage, I think, setting goals, rather than mandating specific technologies or types of generation.

And that's — you know, obviously, as it relates right now, you know, that's a discussion at the Legislature as to what those — you know, be it biomass and geothermal are a couple that are particularly of note at the moment.

But, you know, the problem that we face is when we were mandated to specific types of generation is that it reduces the flexibility and it creates other issues down the road, as well.

If we're setting goals regarding decarbonization or, you know, reducing GHG emissions, criteria pollutants, et cetera, I think that's a better way for us to approach those types of questions.

And obviously, as it relates to the Commissions', you know, flexibility that they might have under whatever legislative direction that you're given, I think we would encourage that rather than pursuing, you know, specific types of mandates.

CPUC COMMISSIONER PETERMAN: And just to
close on that point, we don't disagree. But the political realities oftentimes result in a different outcome. And so, I'm just trying to understand real-world how we move forward. Thank you.

MR. SKOPEC: Commissioner Peterman?

CPUC COMMISSIONER PETERMAN: Yeah.

MR. SKOPEC: Could I just comment on that. You know, a vision into the future here is the water industry. You know, 80 percent of the state is served by municipal water agencies in the state. And I know that some of you know the water industry very well, better than I. But when the Brown Administration wanted to address the drought, they had a significant challenge dealing with that 80 percent because they couldn't tell them what to do.

So, there are times when, you know, overriding state needs come to bear and the political dynamic of your entities, whether it's electricity, or water, or telecommunications makes a difference.

CPUC COMMISSIONER RANDOLPH: Well, and I would also add that in addition to the sort of forward kind of market-pushing procurement that
Commissioner Peterman was talking about, you know, if you look at IRP, if you look at resource adequacy, we do have the basic, fundamental functions of keeping the lights on, and dealing with intermittency, and making sure that we have the right resources that are procured to protect that reliability.

And, you know, that is, as we move forward with, you know, seeing the plans that will come in, in August, you know, the IRP plans coming from ESPs and CCAs, you know, we're going to need to make sure that there's the full representation of the necessary resources.

SUPERVISOR SEARS: And I wonder if I could jump in on the water issue because we do, in Marin County, manage our own water through our Municipal Water District.

And I think that the example is actually a good one to bolster the point of setting targets is could be workable when the government's -- when the Governor sent his target of how much water usage, the goal of reducing water usage we, in Marin County, were able to really utilize a target to decide how that could best be implemented at the local level.
CPUC COMMISSIONER PETERMAN: But sadly, others did not, which was the challenge.

SUPERVISOR SEARS: Some of those other jurisdictions didn't do as well.

CPUC COMMISSIONER PETERMAN: Yeah.

SUPERVISOR SEARS: Yeah, and we wished they had.

CPUC COMMISSIONER GUZMAN ACEVES: Can I just add a point to the water --

CPUC COMMISSIONER RECHTSCHAFFEN: We're talking water, she can't resist.

(Laughter)

CPUC COMMISSIONER GUZMAN ACEVES: Right, it's a -- but, actually, it's very relevant. Because as you also know, as local governments, there is an initiative that the Governor has to try to establish affordable drinking water, and safe drinking water for all of Californians. And has asked all of the water providers for a contribution for that.

And the Association of California Water Agencies is adamantly opposed to that. And this is the exact notion of the collective role that we have. Do we have as individual governments, local governments, local communities a
responsibility to all Californians?

And in the case of water, the water agencies and local governments are saying no. So, that is really a question.

And I think what Commissioner Peterman was getting at, just to use another example that actually was raised in the earlier conversation, excuse me, by Mr. Wood. And it is the notion that we should get rid of our $500 million of research and development, which all of you contribute to, just as an example. What should we do with that?

Do you think that we should no longer contribute to that as a collective good? Your customers contribute to that today. That's just another question. Do we have an interest? And the munis, you know, they do their own. This is an area where they are opting to do their own program and the Legislature has given them that discretion. Should the Legislature say you should do your own, you know, $2 million budget or should we have a statewide, CEC-run, research and development for the future?

SUPERVISOR SEARS: And I'd like to respond to that. And this really is a local
elected's perspective, and I'm going to take this off even to a different direction, which is affordable housing.

So, one of the tensions that you really find as a local elected official is how to get people to do the right thing. Right. How to get people to reach and change their behavior so that they reach a target, whatever it is.

And one of the things that really doesn't work, from a local elected's perspective, and I'm going to use the housing, affordable housing as an example, is a state mandate. Because it alienates our residents. I mean, we are caught in the Twilight Zone, the intermediate zone between mandates and how people behave.

And in my experience and it's an ongoing challenge for all of us, it's much -- you have a better chance of getting people to meet targets, to change their behavior, to do the right thing, to think of the common good, to think beyond themselves if it really is something that you can incentivize to hit a target, rather than saying you must.

Because when you say you must, is when you get the strongest push back, regardless of
what it is.

Trying to get people to really do the right thing, use more renewable energy, be better citizens, think more broadly of the common good is something that's extraordinarily important to me as a local elected official.

But being mindful of what resonates with people and what really impacts them is also really important. And the difference between targets, and incentives, and mandates is huge.

CPUC PRESIDENT PICKER: This is an old, old debate in the energy markets --

SUPERVISOR SEARS: It is, it is.

CPUC PRESIDENT PICKER: -- and it's not something that I think we're going to resolve.

I'll just observe that we all start out believing that democracy is best, you know, in a Jeffersonian context where the decisions are made closest to the people. And at some point, you realize that you have large infrastructure that crosses jurisdictions and you start to accept that there's a role for a kind of a Hamiltonian governance.

And then, you get into a crisis and you start thinking, we know how Joe Stalin stopped
the tanks --

(Laughter)

CPUC PRESIDENT PICKER: And that's what we want. We want that centralized plan. And that's what happened in 2000-2001, when we hit the crisis, the Legislature said, okay, let's go heavy central. And that's what we're trying to understand in advance and to see if there are ways that we can preserve three different slices of provider and five or six types of technologies.

And as we get to the decisions, I don't think we can come up with any single solution in each case that everybody is going to enjoy equally. Some people will be more severely disgruntled than others.

MAYOR LICCARDO: President Picker, I appreciate the point. And I know it's been said before that leadership is about inflicting pain at a rate that people can tolerate --

(Laughter)

MAYOR LICCARDO: But you know, really going to the question of, Commissioner Guzman, I'm not opposed to rates that are equitably applied. Fees that will support research and
development statewide, as we’ve had in the past. And, just as obviously, we are paying PCIA charges for stranded assets. We recognize our responsibility to do that. We just want to make sure those rates and fees are applied equitably.

CPUC COMMISSIONER RECHTSCHAFFEN: Can I just, while we have Mayor Liccardo and Supervisor Sears here, can I ask you a question about financing? One of the issues that’s come up is – especially with respect to financing long-term renewable contracts, some renewable developers need credit-worthy partners to get financing.

You just started. Mayor Liccardo, did you have an experience where you ran into an issue because you didn’t have a credit rating established?

And Supervisor Sears, Marin, just got this investment grade credit rating. It took a long time, though. Do you anticipate that it will be quicker for other CCAs? So, I guess I want to get responses from both of you about the financing question.

MAYOR LICCARDO: We’ve secured $50 million with a credit facility. We haven’t had any problems procuring long-term contracts that
are cost-competitive with PG&E. We're mandating that they be at least one percent below PG&E's rates.

SUPERVISOR SEARS: Yeah, and I'd echo that response. It did take us a long time to get that credit rating. And I think in part, as I indicated before, it's the credit rating agencies, like a lot of organizations, are used to analyzing organizations that they can fit into a structure that they're currently comfortable with.

And it took quite a bit of conversation and education about what a CCA was about for us to get that credit rating. I am hopeful, now that at least one of the credit rating agencies understands what a CCA is about, that it will pave the path for other CCAs and make that process easier.

CPUC PRESIDENT PICKER: So, I'm just going to note that as is frequently true of all good conversations that we have at the PUC, we only get to scratch the surface and then we run out of time. And so, we're now at the break. And, you know, if we go longer we probably will miss our break, and I think that will be severely
complicated because we need our bio break.

MS. FELLMAN: So, let's thank the panel.

(Applause)

MS. FELLMAN: I just want to say that this is the beginning. We'll be talking about next steps later. And this is the beginning of what we hope are several more free flowing conversations like this.

We have a 10-minute break. I do want to note that the yellow book, and the blue book, are posted online for those of you who are interested thank you, come back at 10:40.

(Off the record at 10:31 a.m.)

(On the record at 10:44 a.m.)

MS. FELLMAN: We're going to get started in a minute. We have one brief announcement while everyone's taking their seats. A couple questions came up from the Commissioners during the discussion about facts. And people who are listening in, or who are on the webcast, they also have some information they want to provide after we on the En Banc. We're going to open up the Customer Choice portal for comments following the En Banc. So, let's coordinate the deadlines with the Energy Commission, that Kevin Barker is
going to talk about it in a minute or -- because this is a coordinated proceeding with the IEPR.

So, for the PUC, please file your comments at Customer Choice@cpuc.ca.gov. And I believe the deadline is going to be July 6th.

So, Kevin, do you want to come up and talk about the Energy Commission briefly? Thank you.

MR. BARKER: So, we're also planning to have this workshop, it's being -- we have a court reporter here, so we'll have a transcript within probably about 30 days. We like to -- we typically do, we accept comments two weeks after the workshop. And so, we're going to keep up with that tradition.

The IEPR docket, which we will also include all the comments that were submitted at the June 11th deadline. The IEPR document is 18-IEPR-01. And so, any comments that you file in the proceeding for the CPUC, we hope that you'll also file them in our IEPR docket so we can include them in our public record. Thanks a lot.

MS. FELLMAN: We'll now turn to the 2019 CEC Building Energy Efficiency Standards, introduced by Commissioner McAllister.
CEC COMMISSIONER McALLISTER: Great. So, thanks for those of you who chose to come back after the break. A little bit sparse, actually, but so you're the stalwarts.

So, I wanted to just very briefly introduce Dave Ashuckian, as the Deputy over our Efficiency Division at the Energy Commission. And his team, with my guidance, has developed the 2019 update to the California Energy Efficiency Building Standards, under Title 24. And the adoption vote happened a few weeks ago at the Energy Commission.

And I wanted, maybe you've heard about it out there in the world, but also if you're within or participated in our proceeding at the Energy Commission, but it’s actually, it's a process that lasted multiple years, with literally thousands of meetings. Thousands and thousands upon thousands of comments on our docket. Lots of stakeholder participation.

And, really, what emerged from that was quite a nuanced, and pretty detailed, and well-considered approach for the Building Standards as they move forward. And this is one of the core things that the Energy Commission does; we’ve
been doing it for like 40 years. And in this moment where we're moving to try to leverage all the resources we have at our disposal to decarbonize our economy, to understand and sort of guide the distributed energy world that literally we're already in. We're not going in, we're already there, we're there now.

And so, in that long-term context, and certainly the planning that's happened at this Commission and at our Commission for decades, particularly in the last ten years or so, since the Energy Action Plan and the energy efficiency planning that we've done jointly really informs this effort on the building code update. And will continue to in subsequent updates -- as markets evolve, as technologies change and develop, and as we look at how those can be best be incorporated into the built environment. Both on new construction, which is largely what we tend to focus on with the Building Standards, but also in our existing building stock which we need to focus on going forward much more aggressively.

So, with that just I wanted to frame the context a little bit and wanted to pass it to Dave Ashuckian.
MR. ASHUCKIAN: Thank you, Andrew. As Andrew mentioned we are responsible for adopting the Building Standards for Efficiency. And, basically, we have been working for the last ten years on a long-term goal of what has been called the zero net energy strategy.

It was initially adopted in the Energy Efficiency Strategic Plan, back in early 2008. And at that time, in 2008, there was about 10 percent of the state resources were renewable. There was a 20 percent RPS.

And the novel goal of having new construction achieve a zero net energy platform of having, of producing enough energy onsite to offset the energy consumed by a particular building was a novel goal. And at that time considered pretty much a stretch goal.

At that time PV was one of the most costly renewable resources out there and so it was not clear that this was going to be an achievable goal based on the cost-effectiveness criteria that the Energy Commission adopts standards under.

Today, we have a 50-percent RPS. We have very significantly increased our greenhouse gas
and decarbonization goals, and PV costs have dropped dramatically.

So, basically, we adopt standards on a three-year cycle. Every three years we look at what is going to be achieved based on cost effectiveness.

And in 2019, in the last three years that we've been working on this, we have achieved significant reductions in both efficiency for the buildings, as well as greenhouse gas reductions as a result of these particular standards.

Our standards incorporate energy efficiency measures that include the confines of cost effectiveness, and we make sure that when we do forecasts of what the rates are going to be, what we project the rates are going to be, we look at the cost of construction. We work with the building industry on what's technically achievable. And again, try and come up with a compromise solution.

We'd considered -- we wanted to make sure we continued to contribute to the state's greenhouse gas reduction goals. Because of the challenge with the duck curve and the increase in daytime PV, we wanted to make sure that what we
were going to adopt wasn't going to continue to exacerbate the over-generation of PV during the day and making sure that we had grid harmonization strategies incorporated in our standards.

For the first time we have incorporated an independent compliance path for both mixed fuel and all-electric homes. That's the first element of choice now that builders have, that they don't have to build a home that has to have gas attached to it, natural gas.

We also have provided increased flexibility for local governments. Our standards allow local governments to adopt more stringent standards that are cost effective in the local areas. And so, we have changed the way we adopt -- or, we have measured our ability to set those standards such that it makes it easier for local governments to adopt a local ordinance.

And again, our standards are cost effective to the consumer and the homeowner over the life of that building.

As I mentioned, for the first time we have adopted a dual path. And in that path, we have continued to maintain what we call the
loading order, where efficiency is first. Homes have to have a minimum level of efficiency before they can evaluate how much PV that the home will need.

Once they have incorporated that efficiency, they have to adopt an appropriately-sized PV system, and that system is going to offset the electric use-only.

We also have adopted some strategies to help maximize self-utilization for the first time and reduce the imports to the grid. Or, I should say exports from the home to the grid.

Our goal was to maximize the impacts -- or minimize the negative impacts to the duck curve, while again maximizing the benefits to the homeowner.

So, as I mentioned, the flexibility for builders, who may want to build all-electric homes is incorporated in the standards. There are no additional PV requirements if you build an all-electric home.

Our assumption was that, again, we wanted to maintain the cost effectiveness and not require a more expensive system if you wanted to build an all-electric home.
So, you can build an all-electric home, even though it uses more electricity and thus should be allowed to have a larger PV system on it, we are not requiring that larger system.

So, this prescriptive path again provides -- I'm sorry. We have two parallel paths for adopting homes. We have what's called a prescriptive path. That is where a builder identifies all the measures that are the minimum requirements, and there's a prescriptive path for both mixed fuel homes and all-electric homes.

There's also a performance path. That's a path that actually most builders use. It allows tradeoffs between various elements of efficiency. And so, for example, if I have a home where I want to maximize a great view, I might want more window area in a certain aspect, or a certain orientation. That may be less efficient. And so, the performance path requires the builder then to offset that additional energy consumption because of that larger window area with additional energy efficiency measures.

For the all-electric homes, the fact that they use more energy they have to have additional measures for efficiency to offset those
additional energy consumptions. And that can be easily accomplished with a heat pump water heater, for example.

For the first time we've changed the way we have identified how you meet the compliance path. And what we have is a modeling software. Our CBECC software that provides an energy design rating. It's a numerical number between zero and 100. Zero would be a pure, zero net energy home, where there was no energy consumed over the life of -- over the annual use of that home.

The CBECC software has the capability to calculate scores for both efficiency and PV separately. And so, a home has to be -- in order to comply, they have to meet a certain EDR target with the efficiency level first, and then they have to then add PV to add additional rating to achieve the overall rating.

There are separate targets for every individual climate zone in California, of which there are 16. And the modeling software, for the first time also provides an output of what the CO2 consumption is or production is of that home, based on the design of that specific home.

And again, the use of the EDR provides a
much more flexible opportunity for local governments to adopt a local ordinance that is more stringent than our standards by essentially establishing a higher or a lower EDR target for their particular region.

We have a number of exceptions that we've incorporated in the standards to address the potential for cost effectiveness as rates and as the future changes.

For example, we know that solar may not be possible on actually every home. And so, if a home has a situation where there's not -- there's shading as a result of a building next door, or some sort of natural environment, there's an exception where you don't have to put the PV on.

We also have exceptions for reducing the amount of PV if you have a multi-story home, for both two- and three-story homes because the expectation is that the actual roof area of a multi-story home is going to be much smaller compared to a single-story home.

We also have a provision that you can provide a reduced PV if you put a battery storage system, incorporate it in the PV system.

Essentially, that battery system is going to,
again, be a primary supporter of reducing the impact to the system by storing the daytime energy that the house produces, and then allowing that homeowner to use that energy during the evening, during what will become the peak time for rates.

Also, we have provided a provision for community solar, knowing that it's also potentially possible for a local organization or a utility to provide community solar. And so, we have a provision so that if there's a community solar situation, a subdivision or a region could adopt a community solar system and that would be covering the homes that are attached to that system.

We have provisions that make sure that that community solar is designed to provide the similar benefits that an individual rooftop system would provide to a homeowner.

And we also have a provision that the Commission could determine in the future that if PV is not cost effective for any particular region, for a utility based on their rates, for any other changes for a billing type, we can essentially eliminate that requirement on a case-
by-case basis, as well.

One of the things that I wanted to point out is that we are really not forcing the market to go to PV by this regulation. This slide shows what the projected impact of our requirement is compared to what the world looks like today. In fact, this blue line on top is the combined total of all behind-the-meter PV today. It's close to 6,000 megawatts of behind-the-meter PV.

In addition to that 6,000 megawatts, there's almost 10,000 megawatts of grid level PV. So, the system actually has about 16,000 megawatts of PV today.

The result of the expected impact from the standards is the purple line that is very close to the green line at the bottom. So, the green line happens to be the amount of PV that is being installed on new construction today.

That's without a mandate or a regulation that forces this to happen on homes. That is happening by the market driven desire to have PV on almost every home today by builders who realize that consumers want PV on their home.

Our standards are going to increase that total behind-the-meter PV by about three percent,
compared to what is today.

If you look at the total amount of PV on the system, these standards will increase that total amount of PV in California by about one percent.

In fact, 10 percent of California's population have local ordinances that have been adopted that require PV already today.

So, again, we believe that these standards are truly helping to make the market -- to help builders design buildings that will support how we want the renewable program to function in the future. Because again, it's happening regardless of whether these standards are going to be in place or not.

Finally, I want to talk about how we have achieved a reduction in greenhouse gas emissions. If you look at what was a compliant building required in 2000, compared to our 2016 and 2019 standards that we have just adopted, compared to -- to a home build in 2000, our standards today will result in about a one-third or a 60 percent reduction in the CO2 emissions from a home that was built just a few years ago, in 2000.

And in fact, our last standards that we
adopted in 2016, compared to our standards today, there's another thirty percent drop in CO2 reduction -- CO2 emissions from a home.

And if you compared that, if you wanted to go to an all-electric home, compared to a mixed fuel home from 2000, that's a 14 -- the emission level of a 2019-built home compared to a 2000 -- a home built in 2000 is about one-fourteenth of the amount of emissions that would be produced by a home. Essentially, reducing the total emissions to very close to zero.

And so, I just want to close by saying that the standards were adopted on May 9th. The next step is to go to the Building Standards Commission where they adopt them into the Building Standards. And again, the effective date will be January 1, 2020.

More importantly, local governments and cities have the ability to adopt local ordinances today. And again, many are doing that right now.

And so, again, we believe that these regulations, again, provide more choices to local governments, more choices to builders, and ultimately provide more choices to consumers as they decide the kind of buildings they want to
live in, in the future.
And with that, I'll open it up to any
questions you have.

MS. FELLMAN: I think we have time for
one two questions. We can -- we had a little
extra time before lunch.

CPUC PRESIDENT PICKER: I'm just curious,
have you had any early interest from any of the
local governments in actually adopting standards?

MR. ASHUCKIAN: So, as I mentioned, we
have had a number of local governments that have
already adopted standards prior to these
standards being adopted. I mean, it's only been
less than a month.

CPUC PRESIDENT PICKER: No, but I mean
are people starting to move toward consideration
of these new standards?

MR. ASHUCKIAN: They are. And again, I
think we haven't had an application in the last
month, since these have been adopted, for a
specific local ordinance using the new standards.

CPUC PRESIDENT PICKER: I'm particularly
concerned about Los Angeles County, where they’re
heavily dependent on national gas supply that
comes from outside of their service area and on
storage because of constraints around the gas pipelines. You know, I’m mindful that the LA County has been very concerned about the Aliso Canyon Gas Storage Facility, also cited 23,000 new housing units directly adjacent to that gas storage facility that are heavily dependent on natural gas hookups.

So, this seems to be the kind of solution that that county, which is also positioning itself to become a clean community aggregator on the electricity side, really ought to be thinking about.

And so, is there -- I mean, are you starting to see these people to come forward to talk to you about how they can begin to apply it? There's a real critical option. I mean, should we start to take steps to constrain their access to new gas hookups, until they start to show some willingness to actually address the opportunities here.

M. ASHUCHIAN: Well, I certainly won't touch the issue of whether we should force the constraint of gas hookups. But I will say that there have been a number of communities, Lancaster, Santa Monica -- I don't know all of
them off the top of my head but, again, there's quite a handful of communities that have adopted local ordinances.

Those two communities, Lancaster and Santa Monica have a requirement where you have to put PV and go to zero net energy on all new construction in those communities. And again, we're constantly working with communities who want to adopt more stringent standards.

I just don't have, again, a portfolio of who's on that list at this point.

CEC COMMISSIONER MCALLISTER: And I want to just sort of provide a little bit more long-term context as well. So, you know, the idea is that this is sort of a -- we do this every three years, and the marketplace evolves. And so, you know, the next iteration will repeat some version of this conversation.

But the idea here is to promote buildings as a platform for new technologies and give flexibility to all the actors, the builders, the governments, and everyone to be able to move in the direction they need to.

And so that -- you know, and make it easier to go all-electric, and sort of be --
incorporate that flexibility.

And so, where there’s a local issue like the one you raised, local governments have more tools than they had before to go in the directions they need to go.

CPUC PRESIDENT PICKER: But this framework is more open to fuel switching than a lot of the past programs have been. Which is why it's very significant for a community that's positioning itself to be an electricity supplier to actually then start to look at how they can manage a constrained natural gas supply.

CEC COMMISSIONER MCALLISTER: Exactly.

CPUC PRESIDENT PICKER: And, you know, it just seems to me that they should really be reaching out to you. I'm disappointed they're not.

CEC COMMISSIONER HOCHSCHILD: I just wanted to jump in really quickly and just offer my thanks to Commissioner McAllister for his leadership on this issue and also to the PUC.

This is actually a success story. I think there's a lesson here how we got to this point. Because, yes, there were seven cities that we worked with who had already adopted solar
mandates, Lancaster, and San Francisco, and San Mateo, and many others.

But there's also a $400 million incentive program which we've just wound down, the New Solar Homes Partnership Program, in concert with the PUC. And that really got the cost down.

And this policy that was adopted last month, at our Commission, has been in the works for a long time. Originally, 2008, I think was the joint vision document that the PUC and the Energy Commission adopted and set the goals. And the Governor's energy platform when he campaigned for office -- and it's been the subject of 35 publicly-noticed meetings with our stakeholders around the state since 2015.

And I particularly want to acknowledge the builders, the California Building Industry Association in getting this because the net result is this is going to save customers 53 percent on energy bills compared to the last building cycle. And if you look at what causes defaults in California, very often the homeowner can afford the mortgage, but not the mortgage plus the energy bill. And this saves customers money from day one. It results in $500 a year
energy savings and is the model we need to move
to, to help keep energy bills low.

And I just want to acknowledge
Commissioner McAllister who’s really just been
tremendous on not just the solar mandate, but
with all the other activity in the codes. And I
think it’s a model for the country. So, thank
you.

MR. ASHUCKIAN: And I just want to add,
too, that again, a number of large homebuilders
put solar on every home they build today in
California.

CPUC PRESIDENT PICKER: Yeah, that's
nice, but that doesn't have the opportunity of
displacing other resources and getting the true
greenhouse gas reduction. That's why I think
this is a really remarkable departure and I thank
you all for actually doing that work.

CPUC COMMISSIONER PETERMAN: Are you
considering something similar to the
nonresidential building sector?

MR. ASHUCKIAN: I'm sorry, can you --

CPUC COMMISSIONER PETERMAN: Are you
considering something similar for the commercial
building sector?
MR. ASHUCKIAN: So, the goal for commercial building sector is 2030. And so, we'll be working on that starting in 2022, working on the commercial.

CEC COMMISSIONER MCALLISTER: Again, I want to add a little context here, too. So, you know, this is not -- so, the world has changed in a vague -- sort of to give you some context, the world has changed since 2007. So, our goals now really have more to do with emissions and, you now, greenhouse gas emissions more than energy, per se. You know, not every gigawatt hour is going to be -- those are all kind of the undercurrent of today-- so, for the next round we feel like we've sort of really focused on single-family, and low rise multi-family in this one.

And we're going to turn and focus the next update for 2022 on multi-family, large multi-family and nonresidential.

And so, whether that ends up with a similar set of strategies for those building sectors, I think remains to be seen. We're going to build a record and we're going to see where we then go with respect to the newer metrics. Not ZNE, as much as zero, low and very low emissions.
So, as the power adds up that's where we're going to definitely focus on this analogous conversation going forward.

CPUC COMMISSIONER PETERMAN: Okay, thank you. The main reason I was also asking because putting in context of the broader conversation today around load migration and timing, when this is an example of alone, a load that CCA's are planning for, and the utilities are planning for. And mandates like this have that departure. And so, it really speaks to the need to make sure that our NEM policies at the CCA level and the PUC level don't have cost shift.

And I'm also just trying to think ahead regarding the transitions. So, I think we're all thinking about these next few years as working out the transition process. And if in ten more years we have a whole other transition process, just trying to anticipate that. So, appreciate the better sense of timing.

CPUC PRESIDENT PICKER: For sure. And we're getting the high sign in terms of time.

MS. FELLMAN: That's the perfect lead in to our next panel. So, thank you very much to the Energy Commission.
(Applause)

MS. LEDESMA RODRIGUEZ: So thank you Dave for the presentation, so good morning. I'd like to begin our next panel on affordability and consumer protections. The green book identifies affordability as one of the three core principles of California’s regulatory framework and it also identifies ensuring consumer protections as a key element for all of our decisions and actions.

CPUC PRESIDENT PICKER: A little louder, Raisa.

MS. LEDESMA RODRIGUEZ: So, joining us for our conversation are Robert Kenney, from PG&E. Barbara Hale from the San Francisco Public Utilities Commissioner and CleanPowerSF. Matt Freedman from the Utility Reform Network. And Severin Borenstein from UC Berkeley. Each speaker has prepared brief remarks.

I'll ask Robert to kick us off.

MR. KENNEY: Thanks Raisa. Good morning President Picker, Chair Weisenmiller, Commissioners. Thanks for inviting us to be here today to address these really critically important issues. Again, I'm Robert Kenney from PG&E. I'm our Vice President of Regulatory
The IOUs really appreciate the Commission's efforts in preparing the draft Green Book and bringing parties together to address the critical issues you've outlined and recognized there.

Just as a preliminary matter, the Green Book appropriately recognizes that there is tension between our core values of affordability, reliability and decarbonization.

And one of our collective challenges, you and I, is to strike the appropriate balance between all the core principles.

An example is that incremental needs in decarbonization could place pressures on affordability and on reliability.

From my perspective, affordability starts with equity among all customers, ensuring that all customers are paying as close as possible to their actual cost of service and that they're not overpaying for benefits enjoyed by a select group of customers.

Foundational to ensuring affordability is a modernized rate structure. And Mr. Skopec kind of hinted at this in his comments earlier. A
modern rate architecture should include a fair allocation of costs among customer groups, pricing that matches costs of products and services offered, a broad base collection of policy-related costs from all customers. And a separate value-based means of compensating customers and third parties for the services that they might provide.

These rate architecture elements lay a rate making foundation to achieve cost equity and transparency by clearing identifying the products and services that utilities provide, and the costs of those products and services. And by clearly and explicitly recognizing and delineating the cost and benefits of policy mandates.

Just kind of moving a little bit to the consumer protections issues. Technological advancements have give utilities the ability to gather, and process, and use increasingly larger amounts of customer and operational data. And with this comes some consumer protection implications.

There's a corresponding increase in risks to customer personally-identifiable information,
as well as physical and cybersecurity information.

So, while recognizing these challenges, we also recognize that a significant amount of the data that we are now collecting has a value to third-party service providers. And the provision of that data to third parties under market mechanisms can serve as a way to help keep rates more affordable if the value of those customer assets is returned to them.

Finally, we think it's important to recognize the gravity of the financial challenges facing IOUs today as a result of California's regulatory and market environment. Load loss, unsustainable rate design and wildfire risk are all placing tremendous financial pressures on the IOUs. These financial pressures increase the utilities' cost of and access to new capital necessary to help California achieve its bold vision.

So, a higher cost of capital will negatively impact customer rates.

Finally, modern rate architecture and new ways of thinking about data -- I don't know, is that your way of telling me I'm done?
(Laughter)

MR. KINNEY: -- are key to balancing the four principles and to protecting the customers. We're very hopeful and trust that the Green Book will ultimately and affirmatively address these issues.

Thank you. The IOUs look forward to working with the Commission, both Commissions, and with statewide stakeholders in addressing the critical issues outlined in the draft Green Book. And I look forward to your questions.

MS. LEDESMA RODRIGUEZ: Thank you, Robert.

Barbara.

MS. HALE: Thank you, Raisa. And thank you, Commissioners and staff for including me on the panel today. I represent San Francisco and also the perspective of an operating community choice program.

San Francisco Public Utilities Commission is where I work. We operate three essential utilities and are directed as a department of the City and County of San Francisco. We have an oversight commission, which Commissioner Hochschild's very familiar with, having been on
it, as well as our board of supervisors overseeing our activities.

The three essential utility services we provide are water, sewer and power. I operate the Public Power Utility that serves about 150 megawatts of residential, commercial and municipal load. We're celebrating our 100th year of service this year, so good for us.

I also operate San Francisco's community choice program. We serve -- we've been serving San Franciscans since May of 2016, in partnership with PG&E.

We're now serving about 82,000 accounts. That's about 115, 1-1-5, megawatts of load. Once we've completed enrollment citywide, which we expect to do by July of 2019, we'll be serving about 365,000 accounts. That's about 600 megawatts peak.

Our program, CleanPowerSF is what we call it, sets rates about 25 to 35 percent lower than PG&E rates. Once we factor in the non-bypassable charges, like PCIA, and a franchise fee, once those are accounted for and charged to our customers by PG&E, customers are paying about two percent less than what they would pay as a PG&E-
bundled customer.

Briefly, today, I'd like to cover three key points. CCA service is affordable and it's as affordable as the for-profit utility services that the investor-owned utilities are providing. CCA governance is accountable, transparent, and inclusive. And then, finally, CCAs value and prioritize equity.

So, on the affordability front. CCAs are delivering affordability to customers today. As I just mentioned, San Francisco's CleanPowerSF customers pay about two percent less than they would if they were being served as a bundled PG&E customer.

According to CalCCA, the Community Choice Aggregation trade association, on average CCA service provides customers about a three percent savings, when compared to the for-profit utility. To date, CCA customers have saved over $89 million on their energy bills.

It's important, I think, to note that the costs under community control, the generation costs are much lower than the generation costs of the incumbent utilities. CCA communities have done a good job controlling the costs that are in
our control. The costs beyond community choice aggregators' controls, those non-bypassable charges, those costs, PCIA in particular, are the costs that are eroding ratepayer savings.

Containing those non-bypassable charges, I think Commissioner -- or Chairman Wood referred to them as the stack-on charges. You know, controlling and containing those charges that are authorized by you and charged by the investor-owned utility is a key factor to achieving affordability.

I will also say, though, that customers should be paying and are paying, should continue to pay their fair share of costs. And as the statute states, it's their fair share of unavoidable costs.

CCA communities, like public power utilities that have been operating in California and across the nation for decades, are well-suited to provide affordable energy. In contrast to investor-owned utilities, CCAs have no need to make a profit. IOUs have to balance their fiduciary duty to shareholders against their commitment to ratepayers.

CCAs serve and report to the same group,
our local communities. Community choice boards
are elected officials, held accountable by
customers at the ballot box.

IOU boards are -- you know, the
accountability there is markedly less direct than
it is for a CCA board member to their ratepayers.

And so, now you can hear that I'm kind of
going into my second point, which is CCA
governance is accountable, transparent, and
inclusive. The public, local community nature of
CCAs eliminates the profit mode and makes CCAs
more responsible, responsive, and accountable to
the public than the for-profit utilities.

Consumers are our constituents.

As a result, CCA governing boards are
responsive to customer desires and demands. And
CCAs' local decision making is more accessible
and understandable to the public, more
approachable and inclusive of customer views than
the CPUC's general rate case approach, and the
complexity of rulemakings, and applications, and
advise letters that, you know, together
contribute to the state holding the IOUs
accountable.

CCAs have been established by their
communities' elected officials through thorough and often laborious processes. San Francisco's a bit notorious for that. When I started at the agency in 2004, the study work was already underway. I told you earlier we actually didn't start serving customers until 2016. We had a very public, very deliberative, and thoughtful, study-rich approach to establishing our CCA program.

CCAs are subject to the Brown Act and the Public Records Act. But perhaps more importantly than the legal requirements is the local government culture that expects and encourages, not just tolerates, community scrutiny and engagement.

And that starts to bring me, then, to my third and final point that CCAs value and prioritize social equity as local governments, with a public mission, many CCAs are also working to better serve our lower income and disadvantaged communities. In San Francisco, first and foremost, we needed to ensure our policymakers that CleanPowerSF was going to be the same price or lower than PG&E before we were even allowed to begin the program, before we're
allowed to initiate additional auto-enrollment processes.

CCAs will also bring tremendous value through innovation and programs that reflect individual community needs and priorities. And you've heard some of that from Mayor Liccardo and Supervisor Sears earlier today.

One of San Francisco's programs couples two of our objectives. Lower -- excuse me, local renewable generation and workforce development. GoSolarSF is the program I'm referring to. We've budgeted $11 million to nearly 1,200 income-qualified and SASH-eligible homes.

The program currently has 36 fully certified solar installers who participate in the program. We've incentivized 23 affordable housing projects and cumulatively placed a total of 172 workforce development candidates into well-paying careers.

Sonoma Clean Power has their Evergreen Program that allocates 30 percent of program funds to offer deeper incentives to income-qualified customers. And Marin Clean Energy talked about their low-income LIFT Program for energy efficiency.
These are just examples of how communities with CCA programs are using those programs to meet the needs and address social equity issues in their communities.

As mission-driven public entities, CCAs focus on advancing affordability through lower costs to consumers and transparent decision-making processes. CCAs innovate programs and policies and are demonstrating value to California's energy consumers. And we'll continue to -- that will continue to differentiate from the incumbent investor-owned utilities.

We're committed to working collaboratively with the Commissions and other state agencies, and with other market actors to move forward towards our collective goals. Thank you.

MS. LEDESMA RODRIGUEZ: Thank you, Barbara.

Matt.

MR. FREEDMAN: Thank you, Commissioners.

Matt Freedman on behalf of the Utility Reform Network.

I'm here to offer maybe a slightly
different view. My view is that customers are --
most customers are far less interested in choices
than they are in results. What kind of results
do customers care about? Well, lower bills,
cleaner energy and reliable service.

   Competition can be a tool to achieve
these results, but it's not an end unto itself.
To the extent that choice is better able to
achieve these outcomes, well, then it is a useful
tool that has real value.

But competition and choice can create
real problems, as outlined in the Green Book. It
can add costs and complexity, make it more
difficult to enforce statewide policy goals that
result in equitable and efficient outcomes, and
it can leave customers vulnerable to abusive
businesses practices.

   Regulatory certainty certainly has its
flaws, but experience since the de-regulation
debacle proves that the state can accomplish
substantial results through smart regulation,
direct oversight of load-serving entities, and
broad enforcement authority.

   Robust regulatory oversight is critical
to the success of customer choice in California.
So, I'll offer three principles for consideration that relate to affordability and consumer protection.

And the first is that consumers must be indifferent to the choices made by other consumers. But there's two dimensions to indifference. We usually talk about one, but not the other. The first is the choices made by one subset of customers shouldn't undermine or frustrate the collective achievement of shared policy goals.

So, customer choice isn't valuable if it makes it far more difficult to produce overall desired outcomes for the state.

Second dimension is one we argue about here frequently, no choice by a customer should shift responsibility for shared costs to other customers. And choices that produce customer savings merely by exploiting retail rate arbitrage opportunities or capturing big subsidies may simply shift costs, without producing any overall savings.

It's really important to ensure that all these shared costs are collected from all market participants and customers. Non-bypassability is
really the key.

My second principle is the need to establish comprehensive resource planning requirements and viable mechanisms to achieve defined outcomes. And that means that achieving aggressive clean energy and low-carbon targets is going to require coordinated action on behalf of all customer loads.

We might need new models for procurement that are really outside the box. And this Commission, both Commissions are going to need to think about that, and it's a conversation that's going to happen in the Legislature.

My third principle is that we need uniform consumer protections, disclosures, and education. To make competition work, customers need to be educated and informed, and able to distinguish between a variety of choices. But customers really don’t understand the choices they are presented.

May consumers, for example, they want more clean energy. We hear a lot about this. And they want to contribute to a low-carbon grid. But they don't understand what products or strategies are actually meaningful.
Retail providers and vendors are constantly emphasizing bold greenhouse gas and renewable content claims to customers. But marketing efforts aren't necessarily correlated with real world impacts.

Well, here's a quiz for you on the panel here, on the dais today. What's the quickest and cheapest way to acquire a 100 percent zero carbon energy portfolio that can be sold to customers at the lowest possible cost?

(Collective RECS)

MR. FREEDMAN: I'll give you two examples. That was my second example.

(Laughter)

MR. FREEDMAN: Example number one, procure from large hydroelectric facilities located in the northwest and in western Canada. These are the same facilities that have been selling power into California for decades. They've been part of our mix. We've relied on those resources, historically. We just didn't call them zero carbon.

But today they're available for a premium of only a couple of dollars a megawatt hour over the spot price for brown power.
What's the problem with relying on that?
Well, it doesn't really have any impact on production. What impacts hydroelectric production is rain.
Secondly --
(Collective snow)
MR. FREEDMAN: Snow and rain.
(Laughter)
CPUC COMMISSIONER PETERMAN: Final answer, final answer precipitation.
MR. FREEDMAN: And environmental restrictions on water flow.
Second is to buy unbundled renewable energy credits from existing facilities located throughout the west, some of which were built to serve utilities decades ago. You can buy those for as little as a dollar a megawatt hour.
So, imagine that you're presented with this as a zero-carbon portfolio. Are you inspired? Do you feel like your choice to buy this portfolio is making a difference?
Well, let's compare to an alternative portfolio. An alternate zero-carbon portfolio that's composed of newly-developed renewable energy facilities, new investments in incremental
energy efficiency, and newly-installed energy storage. And imagine this alternative portfolio provides greenhouse gas free supply and demand-side resources that are perfectly correlated to your load profile.

Are these two profiles the same? I would argue they aren't. And if every provider of customer choice relied on the quick, cheap and easy approach, the state would make no real progress towards achieving its long-term climate and energy goals.

But the problem is customers really can't tell these two portfolios apart. They just look at percentage renewable and what the greenhouse gas footprint of the portfolio is. And how do they get this information? They get it from the providers that are marketing the products and services.

So, customers need good information to discourage the race-to-the-bottom strategies that end up appearing meaningful but having no real impact.

There are processes that are underway at both of your Commissions, the power content label at the Energy Commission and the clean net short
methodology here, at this Commission, under the IRP process.

But they're probably not sufficient to encourage customers to make real meaningful choices. So, we're going to need to look at other approaches that clarify the differences between these types of product offerings. And we're also going to need to recognize that choice is not a substitute for regulatory oversight.

And then, finally, my concerns go beyond pure environmental claims and they also include promises of savings, particularly on the distributed energy resources side.

How do most customers considering investments in behind-the-meter generation assess the amount that they are likely to save? Well, they rely on a calculation provided by the vendor. The vendor tells you how much you'll save over time.

What's the problem? All these estimates are wrong and they're not even consistently wrong. Meaning, vendors often have different methodologies for telling you what you're going to save for the same exact product.

So, what are the solutions? Well, we've
got to move away from using retail rates, for example, to reward customers for distributed energy resources. This approach is fraught with uncertainty. We need to migrate to an approach that provides predictable, knowable compensation that can be reliably forecast over an extended period of time.

And second, vendors are going to have to use standardized approaches to providing their savings estimates to customers. Customers need to have the ability to do an apples-to-apples comparison when they're presented with choices in the market.

The PUC is, hopefully, set to implement the requirements of Assembly Bill 1070, enacted last year, that would direct the Commission to establish standardized estimates of savings for distributed energy resource products, particularly solar. We're hopeful that's going to happen soon.

And then my last point would be consumer protections are desperately needed in an age of robust customer choice. And they need to occur through mechanisms other than consumer complaints. The reliance on the complaint
mechanism has not proven very effective. And customers shouldn't necessarily have to come forward and identify the problem for regulators to get out slightly ahead of it and make sure that we don't end up with big customer backlash. So, we want all the agencies to be able to have broad powers to police bad practices and to ban actors that consistently violate these rules.

That's what I've got for you today. Happy to answer questions. Thank you.

MS. LEDESMA RODRIGUEZ: Thank you, Matt.

MR. BORENSTEIN: Thank you. Thank you, Commissioners, for inviting me to be a part of this panel. I'm Severin Borenstein. I'm a professor at UC Berkeley. I was made Director of the UC Energy Institute in 1994 and immediately started testifying in the Legislature about electricity restructuring.

And doing research. And what my research led me to, around 1995 and '96, was the potential for extreme market power in the deregulated market. I remember very clearly, after I was appointed to the Board of Governors of the
California Power Exchange, speaking up at a meeting of the Board of Governors and expressing this concern that we could be headed towards a real problem. And the chairman of the board, a person many of you are familiar with said, in his famous drawl, "We have that under control, son".

And it's not that what we're headed towards now is exactly going to be the California electricity crisis. I don't think it will be. But I do worry that the problems we faced then, which was bad incentives set up by the restructuring, is getting mirrored in some bad incentives we're seeing now.

Back then it was generator -- the incentives of generators to exercise market power, the incentives of electricity service providers to take risks and not actually cover their commitments. And the incentives of consumers not to cut back consumption when the market was truly tight, whether for real or artificial reasons.

What we see now is a bunch of incentives through the history of the regulatory process since the restructuring that are giving customers and marketers incentives to make changes to their
behavior that are not truly saving the system
money but are engaging in what I refer to as
regulatory arbitrage. That is prices that are
not reflecting real weighted costs and firms that
are looking at ways to take advantage of that.

I have written and participated in
proceedings here on demand charges, for instance,
and the companies, the consulting companies that
are in the business of teaching you how to shave
your peak in order to reduce your demand charges
in a way that really doesn't correspond to saving
the system any money, or very much money.

What we see now, in the retail rates is
prices that are well above avoided costs,
including the cost of the avoided pollution.
Including the cost of CO2 and the local
pollutants.

The retail rates that California
residential consumers face, now, in the range of
21 to 25 cents-a-kilowatt-hour, are nowhere near
what is actually being avoided when a consumer
cuts back.

And, of course, that immediately -- those
incentives immediately lead to very strong
incentives to install things like solar, rooftop
solar, particularly if you're a heavy-use consumer.

And so, yes, we are seeing the market, all by itself, installing a whole lot of solar right now. Not because solar is cost-effective on the rooftop. It's not. It's not even close to grid-scale solar in terms of cost, but because the temptation for regulatory arbitrage, because price is well above avoided cost is huge these days.

So, that I think is the sort of concern that I see when we talk about consumer protection. Not protecting the consumers, although I do worry about some consumers are misled into installing solar, but protecting the consumers who aren't, and can't in some cases install solar. And as a result, are going to see their rates go up as there's a cost shift from the consumers who do install solar, who save a lot of money, enough to cover the cost of a very inefficient way of installing solar. But in the process, they're shifting a lot of costs that they would have shared in paying onto other customers.

I don't know where we are in terms of
CCAs and the PCIA, and the true cost shift. And I have no strong view on who should be supplying energy. Whether it should be the utilities, CCAs, or ESPs. I have studied utility regulation for a very long time, many, many decades, and there is, it’s a very difficult process to get -- give regulated utilities an incentive to behave efficiently. It's just fraught with loopholes that utilities are going to try to take advantage of.

On the other hand, despite the presentations we've heard about CCAs, it's very easy to come up with examples of local governmental entities that have not behaved well, either through just pure inefficiency or in some cases through corruption.

So, it's not that we are replacing something that is, admittedly, the regulatory process and investor-owned utilities are very flawed, with something that is ideal. We are replacing it with something that is also flawed.

And then, of course, most of our economy is a market economy because we think most goods in the economy are most efficiently provided by companies that are actually trying to make
profits on it. And that has something to say for it, too.

And so, I don't have a strong view on which one of these is actually the efficient way to do it. I do have a strong view if we set the cost of switching in a way that gives incentives for regulatory arbitrage.

If it is the case, and I don't know if this is the case, but if it is the case that the PCIA is set well below the actual cost that is being avoided by customers who switch, then what you would see is a big movement towards CCAs, who can proudly tell you that they are saving their customers money and making their customers very happy.

But in the long run, if that's the case, it's going to end up costing other customers a lot of money because they are just shifting those costs.

So, I would -- this is, of course, a much bigger month-to-month issue right now and could be within a year or so an issue that is having a massive financial impact on utilities, and then very quickly on utility ratepayers.

So, I would say that this is an issue...
that the Commission has to get onto right away
and get onto in a way that is just a hard-nosed
economic calculation, not influenced by the
politics.

The further down the road we get, the
harder that gets because the more CCAs are going
to be established. And if it is the case that
the right answer is we should be charging them a
substantially higher PCIA, there's no question
that that industry is going to push back.

Partially, making perhaps valid argument that the
cost shift isn't that large, but also because
they have now invested billions of dollars in
establishing CCAs. And there's a political
movement towards keeping them alive.

Finally, for the same reason I'm very
worried about the incentives for rooftop solar, I
have publicly expressed my concern about the
rooftop solar mandate from the CEC. Both because
I think that isn't right now a cost-effective way
to install solar. It could change. By the way,
I think if building materials change and the
solar is integrated into building materials that
has real potential.

But also, because if we get three, four
years down the road and we're installing rooftop solar and have installed it everywhere, it is going to be much, much more difficult than it is even now, and it is already very difficult to unwind that cross-subsidy. Because there's going to be an even bigger constituency saying we made an investment based on your guidance, and now based on your regulations, and now you're going to get rid of net energy metering, raise fixed monthly charges, whatever changes you might make.

And I think that real consumer protection should involve both telling the consumers who are now installing solar this is the deal right now. This is not the deal, necessarily, in the future. The increasing block pricing could get flat and fixed charges could get implemented, NEM could get phased out.

And at the same time telling the consumers who aren't installing solar, we are working towards an equitable cost allocation so that you aren't going to be victimized by people engaging in regulatory arbitrage. Thank you very much.

MS. LEDESMA RODRIGUEZ: Thank you, Severin. Questions from the Commissioners?
CPUC PRESIDENT PICKER: So, I think it's appropriate to note that Commissioner Peterman has a very hard nose, but it's probably not appropriate for her to speak to the PCIA.

CPUC COMMISSIONER PETERMAN: We are on track to release a decision at the end of July, still on track.

(Laughter)

CEC COMMISSIONER HOCHSCHILD: If I could jump in -- first of all, thank you all for your testimony. I know we have a very intelligent panel here and partly because Mr. Kenney's wearing a bowtie and those are extremely difficult to tie, I've been completely unsuccessful.

(Laughter)

CEC COMMISSIONER HOCHSCHILD: I have a question. You know, earlier President Picker raised the impact to the grid and to future stability of the system around CCAs.

And I want to look at the other side, which is the impact to ratepayers and, really, I'd like to hear from all of you. Setting aside the PCIA, are there other factors you can see looking ahead which might increase rates for
CCAs? Because I think the obvious advantage that a CCA offers is not having to deliver a return to shareholders, you know, being a public institution.

But are there other factors we're not considering, you know, higher -- the prospect of higher interest rates or other things that you could see that might actually change the equation and be a risk we should be thinking about for ratepayer impacts?

MR. KENNEY: Thank you for the question, Commissioner. And thanks for the acknowledgement of the bowtie, I appreciate it.

Setting aside the PCIA and I think somebody asked what the cost share might be, and we've estimated in 2018 can be anywhere from $168 million to $254 million and that testimony is in the PCIA.

Setting aside the PCIA, however, I think one of the other advantages that we have seen as a state by virtue of the existence of a strong, financially-healthy, investor-owned utilities that are balance sheet, and the ability for us to access capital at a low cost, and the benefit that has derived from that fact in being able to
spur nascent technologies and deploy, to purchase compliant contracts.

And so, I think that's one of the long-term benefits that you continue to see and that is a distinguishing characteristic and feature of the existence of the IOUs.

CPUC PRESIDENT PICKER: I should point out, just for the record, that the regulated utilities don't own generation in this day and age. They actually purchase it as a service. So, it doesn't go into rate base. The place where the -- in a traditional utility rate case that there's really true profits is actually in the heart of the structure, which will always continue. So, we tend to segregate those things.

All right, thank you.

MR. FREEDMAN: Commissioner, I think that there are certain things that we can imagine might happen that would create instability for CCAs and result in some big cost impacts. And, of course, there are all the things that we can't imagine.

Right, very few people saw the implosion of the wholesale markets in 2000-2001 coming. Maybe a few people in this room correctly
predicted it. But we are going to have a hard
time seeing the next market excursion.

But we may in fact see a situation where
prices for energy spike, where we have a shortage
of capacity, the wrong kind of capacity and we
end up in kind of a crunch situation where
entities are caught short. And particularly,
entities like CCAs that are still building their
portfolios from scratch. They start out with
nothing. They own maybe only the office
furniture at their headquarters. And they start
with a portfolio of short-term agreements and
rely heavily or almost exclusively on the
utilities and others to make those products
available.

If, in the midst of that there's some
type of a shortage or a price spike, you can see
CCAs being underwater on their rate structure.
And customers, who were perfectly happy to make a
choice when it produced a discount, off of their
normal bill might decide that paying a premium
isn't what they're up for, and they're going to
want to leave. And at that point you've got a
problem.

The other type of instability that is on
the horizon and it was mentioned earlier that
Senator Hertzberg has just amended his bill in
the Senate House, SB 237, to allow unlimited
direct access for nonresidential customers.
If that bill were to pass and be signed
into the law by the Governor, we could see a big
migration from existing CCAs to direct access
providers. And there's a lot of churn that
happens in that market. Customers going back and
forth. Direct access is a short-term market. By
design, customers sign short-term agreements.
So, what do you do when there's a long
term -- there's a lot of short-term behavior and
you've got a crisis? Well, back in 2000-2001,
when market prices spike, what most direct access
providers did is they dumped their customers back
to the utilities. And the utilities then had to
go buy and procure for those customers when
market prices were astronomical. So, it
compounded the impact of the market failure.
I'm not saying that these exact things
are going to happen, but we don't know what's
going to happen. And we do live in uncertain
times and these are all things that we should
worry about.
MS. HALE: Well, and that's where risk management is important. But again, many of the CCA communities engaging in that.

I'm hearing you ask a question about what are some of the things that will cause an increase in cost pressures, an upward increase in cost?

I think lack of transparency in the wholesale market is a factor, especially with respect to resource adequacy products.

I think regulation can be one of those factors, especially if it's mandates as opposed to targets, like was discussed at the earlier panel. In particular, Mr. Shaw's comments.

Technological innovation, you know, it can make some of the choices that load-serving entities have made and built in their portfolios, suddenly become more expensive than was initially thought.

And I think then, finally, it's the kinds of things that communities are imposing on themselves. You know, San Francisco has a -- right, I mean it's self-inflicted wounds. San Francisco has a strong interest in local investment, local reinvestment of the dollars
we're earning through our community choice program. There's a lot of community interest in solar in everywhere. And it's not always cost-effective. So, you know, it's choices like that I think can also be sort of self-imposed, upward price increase pressures.

MR. BORENSTEIN: Can I just add one thing? Because this statement about CCAs don't have to make profits for shareholders is made all the time. And, of course, the same argument could be used for why your cities should provide your groceries, and shoes, and everything else. They don't really have to make profits on those things.

I think the real argument for CCAs is not that they -- and CCAs have a cost of capital, just like any procuring agency does. The real argument is not that they don't have to make a profit for shareholders is that they aren't -- the alternative is not a free market. The alternative is this regulated utility and the regulatory process is deeply flawed.

I think that argument is weaker if there really is a potential market for ESPs, who would be for-profit companies who are taking on their
own risk.

And so, I think that it's hard to make an argument that CCAs should be in there competing with the utilities. But ESPs, with the appropriate consumer protections, so consumers are well-informed about what they're actually getting should, not be allowed in there. If there is a potential for real market competition, whether it's from for-profits or government, I think that doing that on a level playing field has a very strong argument.

MS. HALE: And an important part of that would be how any transition is handled. I think that was also made in the earlier panel, to avoid disruption.

CPUC COMMISSIONER PETERMAN: I wanted to -- the conversation has been focused primarily on generation costs, but we're seeing more increases on the transmission and distribution side. And particularly, Ms. Hale, I'm interested in your perspective about how you, as a CCA, are working to keep affordability in those areas?

MS. HALE: Thank you for the question. You know, San Francisco's been active together with some of our -- well, together with the
California Public Utilities Commission and a number of the other public agencies in the state at the Federal Energy Regulatory Commission, trying to shine a greater light on distribution costs, specifically for PG&E, and the lack of transparency, and oversight, and review of those distribution costs.

That's an example of the kind of activities we've been taking in a more formal setting. We're also very active, and not just San Francisco, but the other CCAs as well at the ISO, looking at what the TAC charges are, looking at the choices being made there on investments, and what those investments mean to the overall cost trajectory of transmission services in the state. It's pretty alarming.

CPUC COMMISSIONER PETERMAN: Thank you. And you can answer, since you're the one who submits those applications. Mr. Kenney, maybe you want to comment on that as well.

MR. KENNEY: Ms. Hale mentions being active in FERC and that's something that we welcome, there's a process at the FERC to make sure that the costs that were put in the transmission system are just and reasonable, and
we think that they are.

And the fact of the matter is, and you've heard this in different venues is that we've got thousands of miles of transmission and distribution that have to be maintained.

We are living in a world in which load growth is flat to declining, and we still -- we cover some of our cost through volumetric charges.

And so, we still have to continue to make those investments to ensure the safe and reliable functioning of our system. And so, you know, we obviously go through a planning process, some of which goes through a CAISO-approved planning process, and some of which that doesn't.

But the fact of the matter is that we're making the investments that we think are necessary to ensure a safe and reliable system without gold plating or overbuilding.

MR. FREEDMAN: I would just offer one observation which is that if you look at the trajectory of rates for the three major utilities, the big drivers of rate changes over the last number of years have been transmission and distribution rates. Transmission rates have
more than doubled for most of the utilities and
distribution rate increases have outpaced average
changes in rates. There's a general expectation
that it's all generation that's causing rate
increases and it's not actually true.

And then, finally, to the extent that the
utilities become pure poles and wires companies,
if that's the vision of the future remind -- I
would remind you that the utilities are focused
on deploying maximum amounts of capital into rate
base. So, they will take all the capital that
they can find and they will push it into their
rate base for T&D. And you, as regulators, will
be forced to consider the reasonableness of any
of those investments.

CPUC COMMISSIONER PETERMAN: Thank you.
And I just wanted to, and I'll pass the mic, but
highlight this. Because I think in our -- I want
to be mindful that in our back and forth on
customer choice, that we don't lose sight of the
fact that even when resolving some of these
issues amongst these players, the affordability
question is still going to persist. And in
having you, the folks around the table coordinate
to reduce those costs. And where's everyone's
incentive to do that?

CPUC COMMISSIONER RANDOLPH: I was going
to shift topics, so if anybody else wants to ask
anymore T&D questions?

Okay. Let's talk about consumer
protection. Because, you know, right now we
really don't have, as Matt alluded to earlier, we
don't really have an overarching framework to
address, you know, what the providers are doing.
You know, statements they're making, what are --
you know, what are the right consumer
protections?

And as we saw in the gas transmission
world, you know, there are issues that arise
without those kinds of protections. So, I would
like to hear your thoughts about some of these
bread and butter mechanisms and what are the
right ones to protect consumers?

MS. HALE: So, I just would start off by
saying I think as part of the -- what I was
talking about in my opening comments about
transparency is a big part of what San
Francisco's trying to do. I think all of the
CCAs are very much kind of approach enrollment
opportunities as like campaigns. We're out in
our communities talking about what the products
are that we're proposing to serve them with.

We have the regulatory mechanisms at the
CPUC and the Energy Commission where we're
reporting, just like the other load-serving
entities do in meeting requirements. There's a
lot of transparency in those reports that are
available to the public.

I think the fact that we are, as I said
before, members of the communities we're serving,
overseen by elected officials, is a very strong
discipline on making sure that we are being clear
with our constituents, with our neighbors, with
our community members about the kinds of service
that we're proposing to provide.

It's very easy to find out about what a
CCA is doing, either electronically or with an
old-school phone. You can call the CCAs up and
engage in that conversation pretty readily.

Now, having said that, there are always
going to be constituents who, you know, don't
read their paper mail, don't really engage in
their local neighborhood community group meetings
that we go to, aren't at the street fair, don't
enjoy Sunday Streets. You know, that kind of
stuff. We're always having said that we're there, we're always going to miss people. That's just going to happen.

And I think you've heard before how we missed Matt, in his household, when we did our enrollment, and he didn't see his mail, and was surprised to learn that he was a CleanPowerSF customer. He was so busy here doing his work, right.

But, you know, so that's just going to happen. But having said that, we're transparent, we're open. We don't want accidental customers and I think that's the most --

CPUC PRESIDENT PICKER: I'm going to push on that a little bit because I stay here in San Francisco several nights a week, which is another issue with the city, efficiency and transparency for --

CPUC COMMISSIONER PETERMAN: We take the N Judah.

MS. HALE: Oh, the N Judah, got it.

CPUC PRESIDENT PICKER: N Judah.

MS. HALE: Got it. I'm sorry.

CPUC PRESIDENT PICKER: Yeah, we're on the N Judah and hear people complaining about
their PG&E electricity bill. And I ask them about CleanPowerSF. And I have yet to find anybody who takes the N Judah line who's ever heard of CleanPowerSF.

So, now, I understand the challenge. I've worked in local government. I had the challenge of people always calling to complain to me that the city hadn't picked up their garbage. I always had to ask them what color their street sign is so they could figure out whether they actually lived in the city or the county.

So, these things are not first and foremost in customer's minds. And I've got to say, it's hard to hold people accountable if you don't know that they're actually doing things to you.

MS. HALE: Right, right.

CPUC PRESIDENT PICKER: So, I think you've got a ways to go. I think you've got a long ways to go. I think your argument falls a little flat that local governments are actually being held accountable on ground operations with the CCAs, when most customers just don't know.

So, I think the argument could be that in order to actually give that kind of informed
consent, rather than an opt-out system, where you just absorb customers by local government action, you should be, perhaps, actually getting people to opt-in, which is the energy service provider retail choice model.

So, I'm just saying that this -- this argument doesn't work based on my personal experience here.

MS. HALE: So, if you were in the Castro Street Station taking -- you know, traveling through that area, servicing in that area --

CPUC PRESIDENT PICKER: Cole Valley is pretty --

MS. HALE: -- you would have seen the CleanPowerSF marketing campaign that dominated that station, for example. Just to link it to the MUNI experience you were having.

I think the fact that we haven't enrolled all of San Francisco is part of what you're hearing as our targeted --

CPUC PRESIDENT PICKER: It’s Important on the MUNI to watch where you're putting your feet, to be honest with you --

MS. HALE: The targeted marketing that we've done to address the communities that we are
enrolling. And I think, you know, San Francisco is a very --

CPUC PRESIDENT PICKER: And this question of customer protection is not quite settled and I just -- I'm wondering if there's a role that we should be taking to actually help ensure that there's an informed choice. If there's not a mandate, just a target, should we --

MS. HALE: Well, so we do participate.

CPUC COMMISSIONER RANDOLPH: It's not just CCAs that I'm speaking about.

CPUC PRESIDENT PICKER: Yeah.

CPUC COMMISSIONER RANDOLPH: I mean, I'm also speaking about a lot of other providers on the market that we haven't really addressed the, you know, what should the contractual terms be? What should the disclosure requirements be? And is it something that should be more clearly and consistently mandated --

CPUC PRESIDENT PICKER: Yes.

CPUC COMMISSIONER RANDOLPH: -- throughout the market.

MS. HALE: One more thing on CCAs before we go on to that, if I could, Commissioner, and that is we do sit down together with the
investor-owned utility that we're partnering
with, and in San Francisco's case PG&E, and work
with the Public Adviser's on the public
notifications that we jointly provide.

So, your offices are already exercising
some oversight and control on the communications
that happen with our customers. Not just when
enrollment begins, but on an annual basis those
communications continue to happen.

I would agree with you, Commissioner,
that, you know, we've provided a lot of input and
advice to customers through our GoSolarSF
program, who say, hey, you know, I'm being
marketed a solar system and I'm not quite sure
how these numbers work, and we help folks work
through that.

We found some very helpful tools, like
the SAGE tools that are available online, that
customers have found helpful to use. We provide
that advice that, you know, sort of surface that
availability through links on our website, so
that customers can get themselves better informed
through that solar-bidding tool.

So, I think there are sort of competitive
market ways to address some of this. But
definitely share some of the concerns about consumer protections in that sector, as well.

CPUC PRESIDENT PICKER: Dr. Borenstein, do you have a comment?

MR. BORENSTEIN: Yeah. So, I'm old enough to remember the AT&T breakup and the same issue arising, actually. And the forcing people to make a choice, which also wasn't terribly successful. Most of the people ended up getting defaulted by some arbitrary market share.

I think the CCAs make a very valid argument that a government -- your local elected governments have chosen to have a CCA, so making that the default makes a certain amount of sense.

On the other hand, it does concern me that when CCAs come into communities there is only one marketing side. The utilities are not allowed to market the other and nobody else does.

So, essentially, there is the CCA marketing and then there is sometimes a grass roots resistance, but it is sort of, well, I think there is an argument for CCAs being the default. I think there is an argument for a more balanced presentation of what your alternatives are. And perhaps the CPUC is the place that
should come from.

CPUC PRESIDENT PICKER: And so, I'm sorry that we're once again going to have to end the conversation before we actually get done. And it's now noon. We're ten minutes past our projected timeline, so I'm going to call us to a recess for lunch.

(Applause)

(Off the record at 12:02 p.m.)

(On the record at 1:03 p.m.)

CPUC PRESIDENT PICKER: Okay thank you everybody and welcome back from lunch, we're going to start our next panel. And, Michael, do you want to start your introductions?

MR. COLVIN: All right, thank you, good afternoon, Commissioners.

One housekeeping item. For those who are participating via the web, if you could make certain that your phones have been muted, we'd appreciate that.

And for those of you who are in the room and wish to participate in public comment, there is a public comment sign-up in the back. And, make certain that you sign up so that we can hear from you during our public comment period this
afternoon.

CPUC PRESIDENT PICKER: Okay, thank you.

MR. COLVIN: So, good afternoon,

Commissioners. The purpose of this panel is to
focus on the core principle of decarbonization.
And the theme of this panel is scale up
infrastructure to meet the state's
decarbonization goals.

California's going to have to make a
massive investment in new infrastructure in order
to meet our long-term goals of electrified
transportation using our own electricity system
in a huge amount of other issues.

This panel is designed specifically to
hear the perspectives from folks who are going to be providing that infrastructure directly. So, we don't have the providers. We have the -- we do not have the electricity service providers, excuse me. We have the providers, and the folks who have stakeholder interest in making certain that the infrastructure happens, and what is needed to scale up, what needs to be done locally and to do be done effectively.

We are going to first hear from Tom Dalzell, from the IBEW. Then, we'll hear from
Arthur Haubenstock from CEDMC. Followed by Danielle Osborn Mills, from AWEA California. And followed by Madeline Stano, who is from Greenlining.

A special shout out to Madeline for doing a last-minute substitution for her colleague, Stephanie Chen, who was originally supposed to be with us from Greenlining. So, we appreciate her filling in at the last minute.

Their bios are on the web and in the packets in front of you.

So, without further ado, I’m going to hand it off to Tom.

MR. DALZELL: Good afternoon. My name is Tom Dalzell. I am the Business Manager of IBEW Local 1245. We represent just over 20,000 workers employed by investor-owned utility PG&E, every publicly-owned utility in Central and Northern California, with the exception of the City of Palo Alto, the workers of the Western Area of Power Administration, United States Bureau of Reclamation, a couple thousand members who work for contractors who provide vegetation management.

And the first thing that I would do,
although it's not exactly germane, is to recognize the consistent and strong leadership of the Commission in the work that's been done over the last 20, 25 years for RPS.

You know, we've been strong supporters of it from the start and we continue to be. And we know that it would not happen without the leadership of the Commissioners, past and present.

We have a strong tradition or a strong record of being right and ignored. Ralph Cavanagh held up the Blue Book, and Mark Joseph and I were in the room when the Blue Book was launched. And I'll hold up as my prop our comments on the Blue Book, predicting blackouts and spikes in prices. So, we were ignored but we were right.

In terms of the decarbonization, noting that decarbonization is not equal to RPS, no matter what the model eventually adopted for decarbonization of our state, a grid is needed. A strong, robust grid, complicated by extreme weather as the new normal.

So, without having to argue what the model should be, that grid is -- it cannot be
done without the grid. And that is the core work that our members do. We represent all of the construction contractors that do substations, and distribution lines, and transmission lines. And we are prepared to do it. We are acquiring new skills with new equipment.

We have a strong preference for utility-scale solar and storage. As Professor Borenstein pointed out this morning, the rooftop solar is economically inefficient. And the utility scale or large-scale is about 3 or 4 cents a kilowatt hour, as opposed to 20 cents for rooftop. Better jobs building it. All customers can afford it.

And as was mentioned by President Picker this morning, you know, two of the major early solar providers are gone and one of them SolarCity is announcing that they're scaling way back.

We have the same preference for large-scale storage, we like both pump storage and battery storage.

But what we were trying to do this time around is have our workforce prepared for whatever model emerges and whatever technology emerges. And to be there when the wheel stops,
knowing that the wheel's going to keep spinning.
And we have very good apprenticeship programs
that are always changing to adopt new technology.
And we will be there for the infrastructure
needed for decarbonization.
MR. HAUBENSTOCK: President Picker,
Chairman Weisenmiller, Commissioners, thank you
very much for this opportunity. I'm Arthur
Haubenstock. I'm the Executive Director for the
Efficiency and Demand Management Council of
California.

And I want to thank you all and thank all
of the staff who worked on the Green Book for
recognizing that change is coming, and for
providing a context for us to be all talking
about that change, and to ensuring that we are
working together to try to make sure that that
change is beneficial to all Californians.

The California Efficiency and Demand
Management Council is the voice of energy
efficiency and demand response industries in our
state. Efficiency and demand response are
foundational building blocks for California's
energy future, essential to achieving a reliable,
low-cost, and low-carbon energy system for all.
Energy efficiency is a California success story and truly the envy of the world. While California grew from the 9th to the 5th largest economy, as Commissioner Hochschild noted earlier, its energy consumption was practically flat over the last decade, a period of great economic growth for the United States. California's GDP growth exceeded national growth by 6 percent, while its electricity consumption actually went down. That's not the same for the rest of the country.

We still have far to go on energy efficiency. While we're currently ahead of schedule to achieve the 32,000-gigawatt hours of efficiency savings that are projected pursuant to AB 32. Governor Brown, in SB 350, set a goal to double energy efficiency by 2030 and our programs are not on track to achieve that goal.

We would like to partner with the PUC, with the Energy Commission, with the CCAs, and other entities that are involved in California to ensure that we get across that finish line.

I want to thank Andrew McAllister, Commissioner with the CEC, for his leadership in ensuring that we achieve that doubling.
We have far to go on demand response. We're not quite where we want to be, as we are with energy efficiency. We should be leading the world. We're not there, yet, but we are confident we will get there.

Last year, LBNL issued a study of demand response in California, identifying its importance to a flexible, renewables-driven energy supply.

And Chair Weisenmiller, in a panel earlier this week, noted that that study identified tremendous opportunities for growth, but the demand response is actually decreased in California. And Chair Weisenmiller suggested that we might want to consider a demand response action plan. We think that is a terrific idea. We're very interested in pursuing that.

And Commissioner Hochschild suggested that we may even want a demand response energy ZAR, which has a lot of merit as well, and something that our members are interested in pursuing.

With its technological prowess and progressive economy, California should lead the world with demand response, just as it has with
energy efficiency.

And as electrification of the transportation and other sectors increase electricity demand for California that demand response will be increasingly important unless we thoughtfully incorporate to ensure this group aligns with California's energy and environmental objections while we are going through these changes that we're talking about today, as part of this panel.

The central question on customer choice, for us, is whether the customers have the incentives and the environment required to make the investments in efficiency and demand response California needs. Complexity, confusion and uncertainty deter participation in energy efficiency and demand response.

The Commission, and the entities that are subject to its jurisdiction, are responsible for the greatest accomplishments in efficiency and in demand response historically. Energy providers not subject to the Commission's jurisdiction haven't uniformly achieved the same levels of efficiency of demand response, which is not to say that they couldn't.
This history demonstrates the need for uniform, clear, consistent and stable rules and programs that are broadly available to customers, notwithstanding their choice of energy provider, and notwithstanding whether those providers are subject to the Commission's jurisdiction.

California's energy system can only achieve its goals if it continues to inspire and attract innovation and investment, the key to its many energy accomplishments in the recent past.

Changes in electricity providers, our bottom line, should not negatively disrupt customer access to, investments in, interactions with, or expectations of efficiency and demand response programs.

And we're looking forward to working with the Public Utilities Commission, the Energy Commission, CCAs, and other energy providers to ensure that we collectively achieve the Governor's and SB 350 doubling goals. Thank you very much.

MS. OSBORN MILLS: Good afternoon President Picker and Commissioners. It's a pleasure to be here today. I really appreciate all the work that you all have put into us being
here and being part of this discussion, and the 
work that the Green Book team has done to really 
try to get at the core of this issue and unravel 
some of these complexities.

I'm here today on behalf of The American 
Wind Energy Association, the California Caucus. 
We include global leaders in utility-scale wind 
energy and our members own, operate, and develop 
these facilities.

Many of them also develop other utility-
scale renewable facilities, like solar, storage, 
geothermal, and transmission in some cases as 
well. So, I'll try to represent the broader 
perspective from the utility-scale generator 
perspective.

While wind is currently my favorite 
technology, I have spent some quality time with 
the other wholesale renewables and want to 
emphasize the value of a technologically and 
geographically diverse portfolio that includes a 
lot of utility scale renewables, as well as the 
demand side resources.

Wind complements California's amazing 
solar resource by picking up speed in the evening 
hours, blowing consistently through the night,
especially newer, higher-capacity factor wind.
So, it can address the evening ramp, reduce the
need for gas generation in the state. And it can
also drive California toward its goal of 5
million electric vehicles by 2030, by providing
renewable power when we need it most and when
it's the cheapest to consumers.
Both wind and solar are tax advantaged
and available right now at an extremely low
price. It's about a 30 percent discount that
we've baked in to the PPA prices on the wind side
because of the federal tax incentives. And those
are phasing out, so projects would need to be
placed -- or, commence construction in 2019 to
capture and optimize the benefits of those
resources.
Geothermal provides jobs in some of the
most economically disadvantaged parts of the
state.
Biomass, obviously Commissioner Peterman
alluded to, provides a means to address the
state's forestry crisis.
So, while all these different renewables
have different costs and different values, they
all work together to provide a much more
flexible, reliable and affordable portfolio of resources for California, and we need it.

Right now, I can say that while we have a lot of ambition, procurement is very sparse. So, I think alluding to what Ralph Cavanagh said earlier this morning, we need to be thinking about performance and how can we make sure that we're getting performance to get to our greenhouse gas targets.

We're probably going to need 9 to 10 gigawatts in the next decade of utility-scale renewables. And right now, there's about 55 megawatts of wind under construction in California. Things are not moving as they should.

I think the most critical issue facing renewable energy companies right now is market uncertainty. There are questions regarding long-term customer load shifting, not just near-term customer load shifting, but questions about who the off-taker is. Which raise questions in terms of how to market products, but also how to manage the risk associated with newer entities, who may not have established lines of credit.

So, I think a year ago it was kind of
anyone's guess who to market projects to and who would be doing the procurement going forward. But it has become more clear in the last several months that the utilities are long in their RPS obligations and as much as 80 percent of their load is departing to CCAs. So, the question is, are the CCAs in a position to assume this procurement on behalf of their customers moving forward, both in the near term, as well as in the long term?

The CCAs are procuring and they are procuring at different rates and different levels of success with utility-scale renewables. We have companies who sell to both investor-owned utilities and CCAs. We haven't seen big, aggregated procurement in the same way that we have with investor-owned utilities, yet. And this is not for a lack of vision. Many CCAs simply haven't formed, haven't staffed up, and haven't established investment-grade credit ratings that are needed to reduce the risk and begin procuring on behalf of these customers. So, regulatory uncertainty around how the state will oversee and enforce statewide goals with this decentralized procurement would be very
Many CCAs are procuring more distributed local resources, as well, that don't necessarily have economies of scale and long-term contracting will be critical not only to achieving the RPS requirement of 65 percent long-term contracts by 2021, but also to ensure that we're reducing risk moving forward and unlocking at-risk capital.

The timing for this is all very tricky. We often hear that we need to be patient and wait for the market to settle, and that makes sense. But long-term contracting is imperative to bringing new renewables online that can force tired, conventional resources off the system. And unless we're doing that long-term contracting now, we won't be locking in the lowest prices for some of the cleanest resources on the grid.

So, the question is who at the state will ensure that load-serving entities are in a position to take advantage of these cleanest, cheapest resources?

And I think we need to recognize that California customers can't afford to wait for current market instabilities to settle. We have aggressive, unmet renewable need, and aggressive
greenhouse gas goals, and lofty goals for electrification of the transportation and building sector. And we can't force Californians to pay for more expensive technologies in a couple of years.

Quickly, a couple of possible solutions. I'll just briefly note that this is a big and complicated beast of a problem, as I'm sure you're all aware more than I, and I'm by no means an expert in project financing or financial markets. But it's clear that there are some principles that we want to put into the discussion on behalf of the utility-scale generators.

First is that existing contracts are sacred. We can't be in a position where the state is looking at reopening existing contracts that are largely responsible for bringing the cost of renewables down throughout the country. So, that's just -- hopefully, we can just park that. I know it's been acknowledged in a regulatory context already.

We also need regulatory certainty within the state and we need to find ways to minimize the risk so that we are able to make these
investments in utility-scale renewables.

If the state is talking about centralized procurement or financing assistance to load-serving entities, we should lean on established infrastructure or streamlined existing processes to make sure that we can move the process along quickly to unlock some of the potential ratepayer savings associated with near-term procurement.

And lastly, I just think we need to have a new way of thinking about all of this. To coin a phrase from my colleague, "Load-serving entities are the stewards of the grid". So, we need to make sure that the decisions that are made by California's load-serving entities are guided by a holistic vision and that the themes of decarbonization, affordability and reliability, I think are the right place to start.

That has clearly taken on a whole new meaning in the wake of the 2017 wildfires. So, as we grapple with the uncertainties of today, the Customer Choice staff is in the right place and thinking through this the right way to plan for some increased uncertainty in carbon-effected, and carbon-constrained future. Thank
MS. STANO: Good afternoon and thank you so much for the opportunity to be with you all.

My name is Madeline Stano and I'm from the Greenlining Institute. We are a regional and economic justice nonprofit, located in downtown Oakland.

And if you'll forgive me, I'll be trying my best to fill in my much smarter and cooler boss's shoes today. So, bear with me, but unto the breach, nonetheless.

So, in analyzing the potential benefits and burdens to increased customer choice for low-income and disadvantaged community residents, there are a few key points to consider.

Meaningful choice is often resource dependent. When we are talking about choice are we assuming folks have enough resources to choose between multiple options. If choice brings risk, and some Californians are more economically vulnerable than others, are we setting up financially-constrained choices to the point where some Californians have no functional choice at all?

In the absence of choice, how do we
ensure an equitable distribution of system
benefits regardless of the provider? As you
likely know, there is not yet one beautiful,
decarbonization unicorn solution for all
Californians.

Over 9,352,731 people live in a
designated disadvantaged community in California,
and almost 8 million Californians live in
poverty.

The question for policymakers and the
Commission should not be what's the one thing
that works in the most "okayish" way for
everybody?

The challenge is to design multiple and
multifaceted, diverse policies to serve a diverse
California.

Next, trickle-down equity, or equity
after the fact is fake news. And we know from
the California Energy Commission's SB 350 Low-
Income Barrier Study, and our experience
implementing and evaluating policies and programs
that programs not designed explicitly, from day
one, to serve low-income and disadvantaged
community residents face significant challenges
delivering benefits to those communities later.
A fuel-switching program, for example, with awesome decarbonization goals has a lot harder time reaching mobile home customers years in after already serving now, 1.0-like customers, with technology from the jump, exceeded the energy capacity of most mobile homes.

The market alone will not serve or protect low-income and disadvantaged community residents.

Placing primacy on market-driven solutions alone contributes to and exacerbates existing economic inequalities. A market-first, low-income and disadvantaged community second policy approach to customer approach will not meaningfully serve those communities.

Expensive solutions are not solutions.

Affordability is a top priority due to the Commission's mission and reflected throughout the Green Book, and certainly for our organization.

If we design solutions for Californians with purchasing power, we are likely disempowering low-income residents.

Instead, if we design solutions for low-income Californians, those solutions can reach and benefit their wealthier counterparts.
As a polite reminder, and I'm sure as you already know, we are asking these questions about transitioning, evolving, modifying a system that already does not serve all Californians equally. Low-income and disadvantaged community residents already face higher energy burdens, higher rates of shutoffs, greater exposures to air pollution and reliability disturbances from a century of infrastructure investment decisions. This needs to change.

Moving on to some of the potential benefits, increased choice can, should they choose to do so, deliver. Elevate local experts with deep local knowledge into decision-making roles, provide opportunities for diverse local partnerships at a small scale. Open the door for greater community benefits, specifically non-energy benefits that mean something locally, designed by locals for locals, especially those that improve health and safety.

Create opportunities for community ownership of wealth-generating assets. Create opportunities to connect physically and politically closer to locally-driven workforce development efforts.
Focus on localized pollution issues, redevelopment of contaminated sites, fixing load pockets, strengthening the resiliency of local areas, for example.

Moving on to some questions to consider. Initiation, creation requires significant financial resources. As you can see in the Green Book, the entire Central Valley currently lacks a formal exploration, initiation and operation, to my knowledge. Does this system have the ability and willingness to reach all Californians? If not voluntarily and organically through the market, how and should the state support that? An open question.

If greater choice means that financial risks will not be socialized across the entire state, similar to our current setup, a greater need for financial protections for low-income customers arises. How and when do we plan to do that in the best way that we can?

Our choice related new workforce opportunities at scale with the existing levels of employment, especially in low-income, disadvantaged communities.

Policies dependent on price signals
unfairly burden more economically vulnerable people and places. If you are on medical machines 24 hours a day to mitigate the effects of your chronic respiratory conditions that may be connected to air pollution, in part due to our electric power sector, how can you choose between charging a lifesaving -- how can you choose between changing a lifesaving behavior and facing an even more burdensome energy bill.

So, must have ingredients for the Commission considering a long-term policy vision for the state. Financial protections. Don't experiment on the most economically vulnerable without firm financial protections in place from day one. If those require a legislative change, name that.

Community engagement and education are critical, yes. And like the Cheryl Lynn disco song, it's got to be real. Thank you.

CPUC COMMISSIONER PETERMAN: I'll say amen to it.

(Laughter)

MS. STANO: So, this management is best when it's from a trusted source, with experience serving these communities and specifically doing
this type of engagement work, like community-
based organizations.

Customers across the system, who are not
low income, have to pay into socially-beneficial
programs. Low-income customers, similarly,
across the system, must be able to benefit from
socially beneficial programs. How can we setup,
fund and run public purpose programs across a
diverse system?

Planning for managed decline of fossil
fuels. It won't happen on accident. It won't
happen through PPAs alone or new solar. It
requires more.

Make air pollution reduction an essential
component of implement the Commission's safety
mission.

The choice really is investment
strategies for low-income and disadvantaged
communities and must include an anti-displacement
component.

So, in similarly fashion, my conclusory
response to DUC risks or opportunities is it
depends. The real question, in my eyes, is have
everybody participating in the choice
conversation and all the entities that power
California support a just transition away from fossil fuels that prioritizes serving those that historically and currently have paid a higher price, both financially and with their health for our status quo.

The competition the state should be supporting, should they choose to do so, is one centered on who can serve California's most vulnerable residents with the best services and protections. And equity battle of epic proportions. Energy pun intended.

All right, thank you very much.

CPUC PRESIDENT PICKER: Thank you. So, do you guys have any preferred model for a provider for actually providing decarbonization? We talked a little bit about the range of different customer choices for self-provision, but is there some model amongst the three large procurer provider options, the incumbent utilities, the CCAs, or the ESPs, that you think helps to achieve the objectives you've outlined best?

MS. OSBORN MILLS: I can say that at least from my perspective, I don't think it's a matter of IOUs versus CCAs, versus ESPs. I think
it's a question of risk and creditworthiness.

CPUC PRESIDENT PICKER: That's kind of a dodge. I just asked you, do you have a preference amongst the three?

MS. OSBORN MILLS: Yeah, again, I can't say that we do -- but all the models are sort of on their head right now. There's not really -- I can't really say that there's still a model that is very familiar to companies who have been doing renewables in California. Because even, I think the IOU model is looking a little bit different right now.

So, I think, you know, we have lessons learned from other states that some developers have worked in and have developed projects in, and they're able to get things done in other states that are more decentralized and deregulated, where they have customer choice and CCAs. It's an adjustment period.

CPUC COMMISSIONER RECHTSCHAFFEN: Well, could I just follow quickly on the creditworthiness Danielle?

So, have you had problems with some of your members getting contracts with CCAs because of a perceived lack of creditworthiness?
And then you mentioned just now that in other states that's been ameliorated over time?
I wasn't quite sure, but maybe you could comment on that?

MS. OSBORN MILLS: So, I think it depends on the company. You know, we do have companies who have PPAs, long-term PPAs with CCAs, and that has not been -- I think there's maybe a higher PPA price because of the risk that's baked into it, in some cases depending on the company and depending on the CCA, as well.

I think one issue that we've been hearing is that even companies that have very large balance sheets eventually hit their capacity with their ability to take on that amount of risk.

And so, while it may be easy for some companies to do a couple projects here or there, or some smaller projects here or there, or maybe shorter-term agreements, there's the concern that in the long term getting the 9 gigawatts of -- the 9 to 10 gigawatts of renewables that we're going to need is going to kind of -- we're going to max out on risk before the companies can fully install that.

CPUC COMMISSIONER RANDOLPH: So, we have
-- you know, President Picker was asking which do
you prefer? But we have all three of these
models right now, right. So, what are the
regulatory pillars that each of you see as
essential to -- across all of those models? You
know, what do you see as absolutely necessary?
And we talked a little bit in the last
panel, not as much as I would have liked, about
consumer protection. So, that's kind of one
pillar that I'm seeing.

What are something else that you all are
seeing?

MR. DALZELL: I'm not sure, there's no
real labor angle to that. We're a part of the
industry, we see what we see. I don't think
there's any self-interest in this.

I mean, we see the integrated resource
planning as being really critical. And not
splintering into 20, or 30, or 40 fiefdoms out
there doing their own procurement.

I think that some degree of either
centralized procurement or centralized planning
for procurement is the best.

No matter what, we think that all the
customers should pay their fair share, no matter
what the model is. We don't believe that that's happening now.

IOUs have a history of success. You tell them what to do, they'll go do it.

But the IRP, I think is really critical. It includes everybody.

MR. HAUBENSTOCK: I think it's a very good and important question. From our perspective, the lack of certainty is really the problem right now. We have multiple models happening at the same time and a lack of consistency of incentives and rules. And a lack of understanding of what happens when customers move from one entity to another, and who actually owns that customer relationship.

Our focus is really on the customer. Our customer is -- a common customer, what is that customer's experience when that customer makes an investment in energy efficiency, when that customer makes an investment in a demand response program?

What happens when their load-serving entity changes? Can they continue to participate in that program? Is that portable, almost in a health insurance type analysis.
We think that it's essential to make sure that all the load-serving entities have the same incentives to invest in energy efficiency, to continue demand response programs and to expand on them. And to make sure that the customers, as they move from one to the other, or a load-serving entity fails which is, of course, a very central concern of the Green Book and this panel. That the customer continues to have its expectations met or at least, a very minimum, understands the risks that they entered into when they started the program, if there's a potential that their load-serving entity would fail.

One last thought, and Danielle, I want to thank you for reminding everybody that it's essential that contracts are sacrosanct. That, you know, we need to attract investment to California. That investment will not continue to happen if the contracts that have been entered into no longer are honored. And that's true for renewables, just as much as it is for energy efficiency or demand response.

MS. OSBORN MILLS: I think one area where we could use more certainty is in demand forecasting. And I think we have a good grasp of
how to do demand forecasting as a state, but it's
gotten very challenging just in the last year or
two to see how that demand forecasting is going
to be divided up by each individual load-serving
entity.

And so, as you think about not only this
big shift towards CCAs, but also the fluidity
with which customers can go back to an IOU, or
potentially leave to go to an ESP, depending on
what happens with this bill, there needs to be
something that's grounding those contracts or
keeping those contracts with the customer in some
way to ensure that they're not split up into a
million different pieces.

And it's really hard to plan a 20-year
PPA or a 10-year PPA knowing that it's this easy
for the load to go all the way back, or half the
load to go somewhere else.

And so, I don't really have a solution
for that, but it's an issue that maybe could be
resolved through some different financing
structure or different procurement mechanism.

CPUC PRESIDENT PICKER: It's always
dangerous to tell us that you don't have a
solution because then that tells us that we have
to pick one. And that's why we started this is that we know that we're seeing a lot of different models out there, but we're going to have to act in certain areas. And without some strong preferences, although we've gotten that from Mr. Dalzell, some of you are going to be disappointed. Some may be more disappointed than others.

So, I'm just saying this by way of warning that you told us to go ahead and make the decisions.

MS. OSBORN MILLS: Can I respond briefly to that?

(Laughter)

MS. OSBORN MILLS: Okay, I will be careful --

CPUC PRESIDENT PICKER: Too late.

MS. OSBORN MILLS: I was going to flatter you and say that I think the IRP is actually an effort that's trying to understand, at least at a system level, what we're going to need.

I think this next few months, as load-serving entities come back with their own plans, is going to be a kind of a trial run to see, you know, how it works and if that provides the
certainty that we hope it does.

CPUC PRESIDENT PICKER: Okay, be prepared.

I wanted to shift --

CPUC COMMISSIONER PETERMAN: Did Madeline want to answer?

CPUC COMMISSIONER RANDOLPH: Did you have anything you wanted to add because everybody else had a --

MS. STANO: Oh, thank you. Well, just briefly, I would say another type of market certainty, which would be customer bill certainty, rooted in concerns around affordability.

CPUC COMMISSIONER RECHTSCHAFFEN: Thank you.

MS. STANO: Yeah, so around that. So, additional financial protections for that risk.

CEC COMMISSIONER MCALLISTER: I want to just move slightly or I guess my questions mostly directed towards Arthur, but anybody can chime in, and certainly Greenlining, as well.

So, I want to talk about the R in IRP. And so, you know, I think your -- Danielle, your point on forecasting is absolutely well taken.
And I think that's right front center on our radar at the Energy Commission. As we sort of move to 2019, and then revamp and enhance forecast methodology and move that forward under SB 350.

How do we transparently, accountably, sort of effectively get more demand response? You know, it's not -- I think it's generally accepted that we're not seeing as much as we could. Certainly, part of that is rates. Right, customers need to see the right incentives in order to make the decisions, in order to create some traction, so the aggregators can get in there and do the heavy lifting, do the thinking, offer the right services to customers.

And at least that's one vision and I think it's one vision that you know, it has some traction.

So, that's really my question and I guess I would just add on that how do we do that in a way that doesn't create, you know these inequities and perpetuate or enhance the inequities to different customer segments. Whether it be commercial or residential, I don't know.
But I guess the fundamental question is how -- what is the basis on which demand response can actually be all it can be in the state going forward transparently, and sort of underpinned by consistent rate-making process?

MR. HAUBENSTOCK: The basis has to be a leveling playing field with supply and there's tremendous interest. And we have now over 80 companies as part of the council. We have lots of emerging companies that are very interested in this space, ranging from EV charging to companies that are doing thermostat management, to all sorts of appliance manufacturers.

Lots of folks are recognizing that across the aggregate there's tremendous value in having load response to grid needs and to distribution system needs.

The problem is the rules have not been written in such a way that they are allowed to participate on the same basis as supply. Now, whether that's energy or ancillary services, or research adequacy, or even transmission or distribution deferral, that's something that we are working on. Something that needs to apply regardless of who the load-serving entity is that
is responsible for that load. And regardless of how that customer base shift, because that makes it very complicated for providers. If they have a list of customers and that customer list switches between LLCs, it is very difficult for them to manage their contracts with the LLCs or to know what they can actually count on.

It's also very important and I think, President Picker, you said that we're going to make decisions. That's great because the biggest problem I think is uncertainty. You know, we don't have clear rules. We don't have clear market signals.

And we have delays that are causing tremendous frustration when it comes to investment. We've heard that there's going to be a further delay in Duran. Even though Duran had some very successful initial indications, that's been pushed by, it appears, a significant number of months.

And it's very important for those companies that are closely watching what's happening in California, and closely watching what's happening in that process to know that when they make these investments they can be
assured that they know what the rules are. They're willing to take a risk, but they need to know what the rules are. And they need to know that those rules don't change regardless of LLC changes.

CPUC COMMISSIONER RECHTSCHAFFEN: Arthur, could I just ask a follow-up question to Commissioner McAllister?

You said you think it's important to have consistency across programs and across providers. And I just have a factual question. I don't quite understand and maybe you could explain, do large industrial customers who are in direct access participate in demand response programs? And, presumably, they have different rate structures than the IOU -- than the facilities in the IOU territories do. And that may provide different incentives for them to participate or not. So, I'm just wondering if you could explain a little bit more.

MR. HAUBENSTOCK: I'll have to get back to you with written comments on that. My understanding is that there are differences. But I think we're also talking about different types of demand response programs and different types
of energy efficiency programs. And you're no doubt familiar with the LBNL study that identified four different categories of demand response. Much of the demand response, historically, has been in the shed category, as opposed to the shift category, or the shaping category, or even the shimmy category. All of which are anticipated to have more future growth, even though shed, which is a response to emergency events, and where the demand has been historically, is very important and will likely grown in accordance relative to where we are now.

So, when I think about consistency, I'm thinking about markets. And, you know, particularly energy ancillary services, resource adequacy, those traditional markets that have been dumped. That have been supply markets, not demand markets.

And in opening those markets to demand means consistent rules. It means job descriptions that aren't really for traditional energy generation but are open to participation by demand management that includes the whole range of technologies that fall within demand management.
CPUC COMMISSIONER PETERMAN: I'm going to follow up with questions on energy efficiency for Arthur. But first, regarding Ms. Stano's comments, I did want to highlight that the Commission released a rulemaking, a new rulemaking on affordability this week intended on how do we embed within all of our proceedings better and consistent metrics to assess affordability. And that's for water, electric, gas, telecommunications.

Interestingly, CCAs are not respondent to that because we don't regulate the CCA rates. Although, we highly encourage them to participate in the proceeding. And that is an example of an area where, as we're trying to do comprehensive policy I do wonder about how we're able to do that collective thinking together, as we have a more fragmented system. But look forward to Greenlining's participation in that.

Mr. Haubenstock, first of all, congratulations on your selection as Executive Director of the Council. They have been a significant partner of leadership in the energy efficiency and demand response space, and you've come at a critical time.
As you are aware, in energy efficiency right now we've just adopted rules that will significantly, potentially, transform how energy efficiency is delivered in the state. Moving to having the majority of the programs being implemented by third parties. Not the investor-owned utilities. And also working to streamline the program so that we're having more consistent statewide programs.

I look at these trends and I get concerned because I feel the space is changing more so than the renewable space and yet, at the same time when the providers might become more fragmented.

So, I would welcome your thoughts about the direction that the PUC has taken energy efficiency over the last year or two, how does that align with having more providers? And you touched upon this, but if you have some specific examples to highlight, I'd appreciate that.

MR. HAUBENSTOCK: Thank you for your very timely comments, first of all. And thank you, and thanks to the Commission for the terrific decisions that it recently issued. And we are very pleased to work with a variety of
stakeholders to help support and contribute to that decision. And we do think that that opens the door to unlocking a great deal of energy efficiency progress in the state.

It is a time of tremendous change and on the energy efficiency side, as well as on the demand response side. And we do think that that creates opportunities and challenges.

But we believe we can work with a range of energy service providers and load-serving entities, otherwise, to continue to build on the progress that has been made.

We think it's -- again, the Commission has been able through Commissioned-jurisdictional entities to make tremendous progress relative to the rest of the world, relative to the rest of the nation. And that has not been uniformly followed throughout the rest of the state.

And so, it's essential that we take the progress that has been made and is evidenced in that recent decision and figure out how we're going to apply that across to all load-serving entities.

CEC CHAIR WEISENMILLER: Yeah, I had a question for Danielle. So, at this point the
overall trend is more for the utility types operators with pipes and wires, instead of power providers.

Now, they have a lot of existing contracts. So, the question is what happens to them? How do we physically or operationally start assigning those to the CCAs? And at the same time, we do have this phenomenon of the utility quality balancing sheets to try and approach the CCAs.

So, to the extent you have an existing contract with a utility and if it were assigned to a CCA, how would your banks react?

MS. OSBORN MILLS: Well, I don't have any contracts, so I don't have a --

CEC CHAIR WEISENMILLER: Speaking for your members.

MS. OSBORN MILLS: It's hard to say. I think -- I'm not too deep into the weeds on the specifics of how contracts are currently made for my CCAs. I know that there is a shift right now, just as part of the RPS -- as part of the RPS portfolios being along the way that might be assisting CCAs.

I think a question there is who's
ultimately carrying the paper for those contracts. And I'm not sure how that is being dealt with.

I think the main thing is that we need assurance that -- the parties in the contract need assurance that they will get paid sufficiently, and that the terms of the contract will be honored.

And so, this issue is far outside of my ability to solve right now.

CEC CHAIR WEISENMILLER: Yeah. And I suspect that the banks who have financed projects are concerned about the creditworthiness of the entity that the contract ends up with. And I don't recall, particularly, and it's got to be a function with the financing and what happens at that point. But it could be scary.

MS. OSBORN MILLS: It could be scary, yeah. I mean, you can go the socialist route of having the state bundle those up and hold them, but that sounds scary. I'm not advocating for that.

CPUC COMMISSIONER PETERMAN: Yeah, I will say ideas along these lines have been proposed in the PCA proceeding, so there's a record being
developed along those lines.

CPUC PRESIDENT PICKER: Yeah, and they were proposed last time around with the Department of Water Resources and it didn't turn out great.

Okay, thank you.

CPUC COMMISSIONER PETERMAN: Are we done?

I think Martha might have something.

CPUC PRESIDENT PICKER: Oh, okay.

CPUC COMMISSIONER GUZMAN ACEVES: Well, I just -- I was going to continue on that, which is do you think the central buyer may be -- is alleviator for not just your individual generation or reliability products, but the local air pollution and the labor requirements, if having that structure actually allows for us to really direct that?

(Laughter)

CPUC PRESIDENT PICKER: That was a very clear answer.

(Laughter)

MR. DALZELL: I answer the question with a question, yeah. What did you say?

(Laughter)

CPUC COMMISSIONER GUZMAN ACEVES: Maybe,
Madeline, you want to take it. But it's really
the question is do you think having a central
buyer will actually be an opportunity for you to
ensure be it, you know, certain labor standards,
or local requirements to put those in place?

MR. DALZELL: Well, now, I'm not sure --
we are not advocating a central buyer. I think
it’s an idea to talk about.

And to some extent it can affect labor
standards. I think there are other issues that
labor standards are more easily plugged in.
You're going beyond California state lines,
procuring.

So, it's not immediately obvious to me
how labor standards would be built into a central
procurer, but it's something we will think about.

MR. HAUBENSTOCK: I'm not sure that
having a central buyer is necessarily the best
gine for disadvantaged communities. I don't
know with respect to labor.

But having some diversity and some
experimentation in the programs can be
tremendously beneficial. One of the best energy-
efficiency projects, and Commissioner Peterman
asked for examples a few minutes ago. This is
just an example in a different context.

But the Air Resources Board enabled a substantial energy-efficiency project of one of our members in the Central Valley that was focused on disadvantaged communities and was very beneficial for local environmental concerns, as well as for carbon.

And so, we like the idea of having diversity of programs and like the idea of experimentation and attracting innovation. But we do need to make sure that we don't have so much change that we don't have a level playing field and a stable environment for investment.

MS. STANO: I would say, certainly from an air pollution perspective there are opportunities, I think with a centralized buyer. But just as you said, I think there's also a benefit to diversity of programs and approaches.

So, I think it's a tension. As my former air pollution-regulating mind would say, absolutely go for the easiest thing that you can get a hold of and have the most control over to minimize pollution. And at the same time there is a time of creativity and diversity that can produce new and unexpected air pollution benefits.
at the same time. So, I think there's a tension between both.

And I'm not trying to be coy by not answering it. I think it's a good question.

CPUC COMMISSIONER PETERMAN: I was going to ask, just for my own sake to understand, how do you engage in policy discussions with CCAs? For example, do you attend the board meetings? Are there opportunities and forums for you to be addressing the boards?

Because I'm wondering if there's a parallel conversation like we're having here, for you to intervene in our discussions, I'm wondering if there's a way to intervene in those discussions?

MS. STANO: I can say definitely, for Greenlining, we've been lurking in the space trying to figure it out. Certainly, with the East Bay opportunity happening we've been able to drop in and try and comment on those documents, engage with that process and figure out that process.

It's a new process for everyone in the room, including us. So, it's a steep learning curve for an advocate, let alone, you know, for
the communities that we're working to represent, but we are trying.

MS. OSBORN MILLS: I would say we don't have any formal lines of communication with them through board meetings or things like that. We have invited them to discussions with our board on occasion, and I check in offline with Beth, of CalCCA, and various staff at the different CCAs. I definitely think that would be a good think to facilitate going forward and would be happy to participate in that.

And I think to that point, and to Madeline's earlier point and response to your question, Commissioner, I just want to say this. I think, you know, there is a lot of diversity in the CCAs and that is very valuable in that they can reflect what their communities want.

And I think the other piece that I want to acknowledge here is that by pushing some of these goals, I do think that they've encouraged the investor-owned utilities to kind of do more and try to meet them.

So, there is a very healthy level of competition in the state right now and I don't want to discount that with all the uncertainty
CEC CHAIR WEISENMILLER: I just wanted to ask Greenlining if you've attended any of the meetings of the CCF, the San Francisco or Marin CCAs?

MS. STANO: I can't speak for my colleagues. So, it is possible. I don't believe so, but we certainly have been in conversation with folks in wonderful -- have received wonderful engagement from those CCAs in trying to get us to participate, learn more.

Certainly, it presents a capacity challenge for nonprofits.

MR. HAUBENSTOCK: And that's a capacity challenge that applies for trade associations, as well. We're looking forward to the CCA En Banc. I don't know if that's been scheduled, yet.

But the CalCCA -- the CalCCA organization --

CPUC PRESIDENT PICKER: You've got to hurry.

MR. HAUBENSTOCK: Yes, well --

(Laughter)

MR. HAUBENSTOCK: As the CalCCA organization, that Shawn Gray promised, we're
looking forward to working with them. But it is a challenge when you are working with a diversity of organizations, and a diversity of boards in their meetings across the state to try to get some consistent policies and positions that are communicated.

CPUC COMMISSIONER PETERMAN: I just want to say thank you for that because it is in our proceedings we have all of you participating, many other stakeholders that are informing decisions on the record, and then how does that engagement happen if the decision making is happening at a variety of boards. So, just something to think about collectively going forward, and given -- also given your bandwidth concerns.

MR. COLVIN: I think we're getting close to the end of time. I'd just like to talk about one note in response to your question, Commissioner. My understanding is that the process that we're really accustomed here at the CPUC as energy compensation does not necessarily apply to other specific decision making bodies that are facing these issues. So, it's just factually that's what's out there.
I'd like to thank our panel so much for all of their time and attention. And we're going to do a one-minute stretch break while we're switching over to our next panel.

So, if you are the reliability panel, if you can come on up.

(Applause)

(Pause to change panels)

CPUC PRESIDENT PICKER: Okay, Mr. Randolph, it's all yours.

MR. RANDOLPH: Thank you President Picker. Good afternoon Commissioners, my name is Edward Randolph. I'm the Director of the Energy Division. I'm the moderator for the next panel, which is on the core principle of reliability.

I think as everybody in this room will acknowledge, if we can't meet the core principle of reliability in whatever system we have, we have completely failed. So, it is an important issue to make sure that no matter what system we have we're maintaining reliability.

Let me introduce the panel really quick. We have a diverse group here, Colin Cushnie from Southern California Edison. Deb Emerson from Sonoma Clean Power. Scott Olson, Director of
Government Affairs of Direct Energy. And Mona Tierney-Lloyd from EnerNOC.

Each one of you will be given three minutes to give a brief introduction, overview of your views on what we need to be considering on reliability.

One thing I'd like to ask the panelists, and we talked about this on the phone, the other day, is to remember that as we're talking about reliability and the move to choice, this is not just about moving to CCAs. This is also a move to distributed energy resources and those present, they're own benefits and challenges as well.

So, I want to make sure as you guys are talking about this and discussing this it's around the conversation on the whole range of choice items.

Unless you -- anybody has a preference, I'll just go down the line and start with Mona.

Well, we can start with Colin.

MR. CUSHNIE: Well, good afternoon Commissioners. My name is Colin Cushnie and I manage Edison's energy procurement operations.

I have three key takeaways that I would
like you to come from in today's panel. First, reliability is not something that California can afford to experiment with. Full stop.

Second, California's policymakers, including this Commission, need to clearly identify the priority of our various policy objectives and put in place a plan that comprehensively helps us achieve those priorities.

And then third, the costs of ensuring a reliable electric system must be borne proportionately by all customers, regardless of who serves them and where they get their energy.

Reliability is paramount. The Commission must establish a clear line of sight between its policy objectives and associated decisions, and a clear-eyed assessment of the fact that California will indeed have a reliable electric system that benefits all customers, wherever they're served.

Today in California we ensure reliability by having a resource adequacy program that allocates system local, flexible RA requirements to all LSEs, based on load share. And we do those allocations on a year-ahead and month-ahead basis.
But with the creation of many, many smaller LSEs, it's becoming very impractical to actually do the necessary procurement of large, basically, you know, utility-scale power plants in locational areas, in particular, where it's needed to maintain grid reliability.

And our model is starting to break down. And in fact, this Commission just yesterday voted out a resource adequacy decision that identified, at least for local area reliability, that it wants parties to submit multi-year procurement proposals and to identify how a centralized entity may be best situated to perform that procurement.

So, to accomplish our reliability goals we need to make sure that the Commission's coordinating with CALISO to identify the specific resources that are needed to ensure, especially, local area reliability.

We also need to make sure that the Commission is overseeing the fact that our reliability-designated power plants operate for the benefit of all customers, and that they're not allowed to operate to extract market rents, as we experienced during the energy crisis.
Of note here, DMM just released a report this month, it's normal annual market performance report. And in it they raised concerns that the competitiveness of some of our energy markets is being called into question in certain hours.

So, this could be the tip of something that we need to keep an eye. And I encourage you to look at the DMM report.

And then, finally, regardless of how we establish reliability procurement in California, which could be a new state power authority. It could be periodic options with willing market participants who are looking to take on that role. That could be an ISO centralized capacity market, or we could continue to rely on IOUs.

The reliability procurement agent will need to be assured a full cost recovery and it will need sufficient financial standing to be assured of being able to conduct the significant levels of a multi-year forward procurement of reliability resources that we need in California.

So, in terms of policy prioritization, how do we ensure reliability? Well, first, California must again ascertain that reliability is of absolute paramount. It's not something
that we can negotiate.

But there are other priorities, affordability, decarbonization as the Green Book pointed out.

And a question the Green Book didn't answer, though, is whether or not retail competition is in fact something that should be elevated to be a core principle or is it just something that we leverage to be able to try to achieve our core principles?

Edison supports customer choice, but we support it in the context in which it can be clearly demonstrated to actually help us achieve our core principles. And if it can't, then we should question why we're pursuing it.

So, a quick wrap up here, then. I want to note that our electric grid is a large, integrated and complicated system and that is foundational in supporting one of the world's largest economies and most diverse populations. And we have to make sure that we don't fail to ensure that we have safe, reliable, affordable energy for all customers.

And in order to do that we need to clearly establish our goals, prioritize them, and
put a plan in place that we execute on those.

Thank you.

MR. RANDOLPH: Deb, do you want to go next?

MS. EMERSON: Sure. Thank you to all the Commissioners for your interest in this important topic. CCAs do take very seriously the obligation to meet resource adequacy requirements.

We should, however, differentiate between the short-term transition that we’re in right now and then look forward to the future with the long-term stability being the goal.

We look forward to being a part of that solution and working with the Commissions and the CAISO to ensure reliability.

The CAISO, FERC and WECC have the primary responsibility for reliability. As noted in DMM's report, mentioned by Colin, their market issues in performance report, 3,000 megawatts of peak gas-fired generation was retired in 2017. That's the largest ever in one year, in the CAISO history.

This, coupled with the change of the effective load-carrying capacity percentages,
which significantly reduce the values of solar generation, has led to a reduction of capacity being available in the market.

These are the facts and facts that would have occurred with or without CCAs.

It's clear to the market the generators do need longer-term contracts. This provides more certainty and also for the ability for the generator to capture the necessary revenues over a period of time. CCAs are contracting for longer term, both in energy and capacity markets.

For example, Sonoma Clean Power, we are 80 percent hedged for our local needs for the next four years.

In addition to that, we have 68 percent of one of our local areas hedged in long-term contracts, meaning ten years or longer.

It's essential for CCAs to maintain their procurement autonomy. These procurement strategies are set by our local governing boards and have to meet the expectations of those elected officials, as well as the obligations of the CPUC and the CAISO.

Our governing board strategies protect customers' interests and rates, and it makes the
The threat of a central buyer could thwart continued development of resources or cause over-procurement, which is costly to the California ratepayers.

While we are supportive of a multi-year RA obligation, we caution the Commission of making those early years percentage requirement being too high, so that we don't thwart the development of these new resources being able to be brought into our portfolio.

There's not been a forward RA obligation in the past, yet here we are today judging the past for not having proper planning. We believe a multi-year obligation would provide better insight into the necessary planning needed for reliability.

But keep in mind that much of this planning of a generator's availability, the transmission planning, and all LSEs obligation resides at the CAISO.

And we encourage the CPUC, the CEC, the CAISOs and all LSEs to work together to ensure long-term reliability.

MR. RANDOLPH: Okay, Scott, you're up
next.

MR. OLSON: Thanks, Ed. Thank you, Commissioners for this opportunity to speak to you today.

Direct Energy is very active in California and serving direct access customers as an ESP, providing products to CCAs, and behind-the-meter customer solutions.

We are one of the largest competitive retail electric providers of electricity, natural gas, in home services in all of North America, with over 4 million customer relationships.

We support a competitive California electric market as a key component in meeting the statewide goals of affordable, clean, and reliable electric power.

With regards to the issues around system reliability, Direct Energy's pleased to provide the following comments. First, ESPs have to meet the same standard for system reliability as other LSEs. We strive to procure the required amounts of system, local, and flex RA to meet year-ahead and month-ahead requirements, and are active participants in buying and selling RA.
Secondly, we are engaged in RA reform efforts and encourage those efforts. We're active participants in the reform to assure the programs change as needed, as we go to a more competitive market.

Long term, we feel that open capacity markets with transparent offers of available resources, for terms sufficient to provide investment incentives are the best pathways to assure robust system reliability.

Besides the ongoing RA proceedings at the Commission, we feel that other legislative and regulatory activities are also beneficial for system reliability. These include regionalization and expanded EIM, CAISO changes to the day-ahead market, and aligning of the timing for showing resource sufficiency.

With regards to oversight, I want to reiterate what my colleague Deb said, that CAISO and the PUC remain lead agencies to set reliability requirements, oversight for system reliabilities maintained not only by the state agencies, but as well as NERC, FERC and WECC. ESPs have internal teams to fully cover and comply with all necessary planning.
requirements and procurement needs.

Fourth, examples from more competitive U.S. electric markets show that ESPs have been successful at providing the incentives for long-term system reliability.

For example, PJM, and ISO New England, and New York ISO each have capacity markets with different forward requirements.

Direct Energy has invested in capacity, physical capacity in these markets because of the price signals that they've provided, as well as the regulatory certainty.

Finally, just to reiterate what Michael Shaw said this morning, at CMTA, our customers demand high levels of reliable service but are very price sensitive. The CNI customers that we service depend on reliable electric supply and we provide this for them.

However, they are price sensitive and under very short notice can leave us for any competitors. Given this, our load can be drastically different in the years to come and thus, we must limit our risk exposure through our contracting activities.

Thank you for this forum today and the
invitation to speak, and I look forward to your questions.

MS. TIERNEY-LLOYD: Good afternoon Commissioners. Mona Tierney-Lloyd with EnerNOC. You may think of EnerNOC as a demand response company, but we have been acquired by Enel Group, so we now have diverse, behind-the-meter capabilities, as well as in-front-of-the-meter capabilities.

So, we have been providing resource adequacy in the state for over ten years. The utilities have used it to meet their resource adequacy requirements. And now that demand response is being integrated into the wholesale market, we are participating in the wholesale market as well, as a supply side resource.

So, we are providing reliability services through those demand response resources currently.

We are in the transition phase, however, with integrating behind-the-meter services into the wholesale market. And, of course, there are some bumps that we're experiencing along the way. And we expect to continue to work both with the Public Utilities Commission and the CALISO.
through that transition process.

So, we're speaking a lot about the right
to choose at the supply level, but customers are
making other choices on site that are going to
affect the procurement obligations that we know
the CPAs, the ESPs for the utilities will be
making in terms of on-site distributed energy
resources.

So, there is a bottoms-up element. One
of the previous speakers spoke about how we
forecast demand going forward and understanding
that there is a lack of visibility about what's
happening behind the customer's location. But
there is a lot of investment that's going on, on
the customer side, to create a resilient on-site
network, and also to provide grid services either
at the distribution or the transmission level.

So, as we plan the system moving forward
is going to be really important to start to get a
better idea about what's happening at the
customer premise in more detail than we probably
can do at this moment in time.

But data access and technology are really
facilitating that movement, customer adoption of
these technologies, and it's apparent that there
are grid needs that will definitely benefit from that. Including what’s been mentioned earlier about changes in demand response capabilities to include load shift capabilities, which is something that we definitely see as a need on the system with the duck curve.

So, in terms of load forecasting that comes into play in resource adequacy, but it also comes into play with the transmission planning processes, the longer term, and the integrated resource plans.

So, making sure that we're accounting for the customer side of the equation in those planning processes is going to be really important.

Rate structures, making sure that rate structures are encouraging customers to make rational decisions, is also really important. And we think that the time of use is moving in the right direction.

And the last point I'll make to wrap up is that, utility rate structures and Commission policy has basically driven energy efficiency and demand response adoption. So, there are some concerns as you go to a more disaggregated model,
if the CCAs and the energy service providers are going to pick up that responsibility for employing DR and the EE resources to the same extent that the utilities have.

And I'll note that the loading order that's in statute is directed towards the electrical corporations, so there may be a gap there. Thank you.

CPUC PRESIDENT PICKER: Thank you. I'm going to ask you a question I asked of the last panel. No. So, this is a complicated area because there's different components overall to reliability. There's overall supply, which is what most people focus on. There's resource adequacy which is that meeting that occasional need at the peak and the hottest days of the year.

But then, there's also these other unseen services that you need to make the grid run and to stay reliable. And so, it's very complicated. And I have this haunting feeling that when we put it altogether that scale really is important to be able to provide the core.

And it's true that in our current system the IOUs, the investor-owned utilities do procure
the most of these overall reliability services. And particularly in load-constrained areas, where there may be only one generator that because of the topology of the grid who can help to supply all of these services, or some critical component that it gets very hard to be able to actually compete for their limited attention as some of these load pockets get a little bit subdivided by -- you know, by a variety of different providers who are competing to get that.

We're experiencing situations where some providers are failing to be able to competitively bid. And so, frankly, I've have had conversations both with ESPs, electricity service providers, and with CCAs, saying that they frequently can't win the bids because they under-bid. They are not willing to make a multi-year contract because they don't know what their load's going to be in the out years. They don't actually have a good sense of what pricing ought to be. And to actually have a competitive bidding process they shouldn't know what other people are bidding.

But we get stuck with people coming
forward and asking us to let them off the hook. And that's really concerning. This is the core responsibility that the Legislature put it to be, the energy regulators, after the 2001 crash.

And so, I don't think that we're seeing this disaggregation of providers actually giving me confidence that we can do a good job.

So, I'm going to ask the same question I asked the previous panels. I think that you, actually, at least talked about it in terms of who's going to purchase your resources. Again, what's the best way to do this? A central buyer? Who's going to be that central buyer? That is a challenge.

Do we go out and do what we they do in Texas and ask the people to bid it competitively? Do we nominate an investor-owned utility? We can't just not do anything.

So, I'm waiting for you to give me your thoughts because otherwise, as I pointed out at the last panel, we'll quickly have to make decisions on our own and it's not going to work equally well for all the different business models sitting before us.

MS. EMERSON: President Picker, I don't
believe that we're just not doing anything. I do think we're working together.

CPUC PRESIDENT PICKER: Well, we're failing is what we're doing.

MS. EMERSON: Well, and as I stated, we're 80 percent hedged in that local for the next four years out. We were auctioning --

CPUC PRESIDENT PICKER: You may not be in one of those load pockets. Other third-party providers are and they're failing. And we have to look at the broad picture, not just your situation.

MS. EMERSON: And I do believe that we are working together, multi-CCAs, and going together and buying these larger scale type of developments that you mentioned, that you're not seeing.

Sonoma Clean Power, for instance, went together with Marin and we did buy a large-scale solar facility.

Also, CCAs are looking to put together a joint JPA, in which all CCAs can band together to be able to look at these larger-scale type of purchases.

We hear you. We understand that
generators and developers don't want to have to sell off 10 megawatts, 20 megawatts, 30 megawatts here. We see that. And so, we do want to be able to utilize our resources in the best capacity so that we can purchase those and get them at a competitive rate.

CPUC PRESIDENT PICKER: Okay, I'm not calling out the CCAs alone, but I've got to tell you that the answer you gave me is whistling past the graveyard.

We had 11 requests for variance this year in the RA market.

MS. EMERSON: I understand that. But, yes --

CPUC PRESIDENT PICKER: Eleven. Eleven.

MS. EMERSON: -- for the annual --

CPUC PRESIDENT PICKER: Eleven. Eleven.

MS. EMERSON: -- compliance, frankly, none of which were CCAs.

CPUC PRESIDENT PICKER: Eleven. Eleven.

That's pretty significant.

MS. EMERSON: One which was an IOU.

CPUC PRESIDENT PICKER: So, you agree, we're whistling past the graveyard. We have a problem here. And what's the best way to solve
MS. EMERSON: I think you need to, you know, let the LSE -- well, one thing we've gone to the Commission, actually in the Energy Division, and asked for those specific load pocket areas and that's been turned down.

Right now, we get two areas if you're in PG&E service territory. I believe it's two in SoCal's area, as well.

And, but it's not broken down to the sublevel which is where, and I'm just going to use the north for example, Moss Landing. That was a sublocal area and that became an issue.

However, no LSEs on their obligation form that we received from the PUC had Moss Landing, because that's just not simply how the Energy Division puts that out. They put it out as PG&E local and Bay Area local. All CCAs were compliant in those two areas.

Unfortunately, it gets broken down much further into subareas and that's where we need more transparency, and where we've gone to the Commission and asked for that transparency.

MR. CUSHNIE: President Picker, you identify a key concern of Edison, certainly. I'm
probably going to tell you something you know,
but again for the benefit of others, our resource
adequacy program was put in place looking to
achieve a balance of different intentions. We
wanted to make sure that the products that we
would ask LSEs to buy were sufficiently
standardized that they could be commercially
transacted. But also, hopefully, specific enough
that we actually met our local area reliability
needs.

And we’ve created this construct that if
all the LSEs met their individual, local RA
requirements, but that collectively the resources
didn’t meet the totality of the needs of the
system, then the CALISO would backstop.

And it worked well when we had the
ability, basically, doing 85 percent of the
procurement because the utilities knew what the
subload pocket constraints were on the system.
And even though it cost more money, we had the
size, the capability, and the balance sheet to go
out and do that more expensive procurement to
ensure that those resources are there they needed
for the CALISO backstop.

Now that the utilities have a lower
portion of the load and we have an uncertain portion of the load, we're really not in a position to be able to do that anymore. And that's manifested itself in our service territory, in our Moorpark area, where even though we have the Moorpark Big Creek local area, which covers a portion of the Pacific, and inland in the Sierras, in Moorpark specifically there's subpockets. Moorpark, Santa Clara, Goleta.

And most LSEs met their local RA requirements, Edison certainly met its local RA requirements. But collectively, nobody purchased 1,500 megawatts from Ormond Beach, old gas-fired resources that nobody wants.

Collectively, nobody bought a 54-megawatt peaker, up in Goleta.

So, one of us might prepared to do a contract for Goleta at some point in time, but it's going to be hard to imagine any LSE wanting to step up and contract for 750 megawatts of an old gas-powered power plant in today's environment.

So, we do need a centralized entity in the transition, at a minimum, until we can put a comprehensive plan in place to reduce our
reliance on gas-fired resources in the state.

I strongly encourage our IRP process to do that starting in 2019. Our focus should be what is that transition plan to reduce our reliance on gas-fired generation. Be very thoughtful and conscious about it. Come up with abatement curves for each power plant and make decisions on which ones we think we can move on from and put resources in place to allow that to happen.

But in the meantime, we still need to live with the fleet that we have and for those resources that are needed, you need a centralized entity.

I shared in my opening remarks different models. The quickest, most expedient would be to have the utilities do it. PG&E in San Diego are not prepared to do it at this point in time, under the current rules.

Edison is providing it. It is clear that we're providing a procurement service for all customers. There's a cost allocation mechanism, so all costs are borne by customers equally. And that, you know, we have clear standards as to how we're supposed to operate when we do that.
contracting. Because we don't make money off of this, we shouldn't be put at jeopardy in doing something to ensure reliability for the system.

CEC CHAIR WEISENMILLER: I guess the basic question I wanted to ask, and certainly a couple of you that are doing procurement, are there economies of scale in procurement?

MS. EMERSON: I would say yes, and there's also, and which we're working with generators now to instead of just going out and buying one year, which is the current obligation, right, but we know we're moving to a multi-year. But it's better, and it's better for the generator if we can contract three or five years, and it helps them be able to spread that cost over time so they're able to offer a more affordable price than what they would in, say, an RMR or a CPM type of contract where they have to capture all of that cost within one year.

CEC CHAIR WEISENMILLER: Edison, has that been your experience?

MR. CUSHNIE: You know, there's definitely an economy of scale in procurement, particularly for resources that require a fair amount of maintenance because then the asset
owner can, has, a revenue sufficiency certainty
that they can then do their maintenance in a
thoughtful way and ensure the facilities are
reliable.

CEC CHAIR WEISENMILLER: Because I mean
the classic and common definition of what's the
utility function, you know, obviously you have
monopolies and economies of scale. So, that
needs to be a question of the whole theory on
unbundling or fragmenting procurement.

CPUC COMMISSIONER RANDOLPH: In addition
to the economies of scale question, don't you
also have some, you know, kind of just a
different, broader perspective? Because, you
know, the subarea information is available in the
local studies to get to but, you know, the more
disaggregated entities you have, the less they're
going to be looking at these different local
subareas.

MR. CUSHNIE: Yeah, I can imagine that,
you know, it would -- with smaller organizations
you have smaller teams and, therefore, less, say,
you know, ground you can cover in terms of doing
your market research and your intelligence. But
even if you knew a sub -- a subpocket area was
needed, if you're one of the smaller LSEs, or CCAs that has a service territory to the east of our system or the south of our system, why would you be incented to contract for an old gas-fired power plant on the north of our system.

You have a requirement to meet your local area reliability across our system, but that's not something you're probably going to be able to proudly share with your constituents. That's not why you formed your CCA.

In terms of the economy of scale, let me answer it this way. I do think there's a lot that we can look to in our competitive markets to source, and even if we have multiple load-serving entities. System procurement, flexibility procurement, we can come up with standards I believe, that are allocable to all load-serving entities.

It's when we start getting down to very specific projects, particularly if they their large, it's when we have very specific policy determinants that we want to do that are very niche. And it's very difficult to allocate that to 20 or 30 LSEs. And that's where you get to your concept, Chair Weisenmiller, I shared on
this a little bit, that you -- it's a utility
function at some point in time.

CEC CHAIR WEISENMILLER: Well, I mean
part of the question is how many people are
needing now, you know, private procurement versus
the same question to Sonoma, the same question to
energy in California?

MR. CUSHNIE: So, Edison's still
responsible for close to 20,000 megawatts of load
and we do reliability procurement through the
CAM. We're authorized out about 194 people to do
our procurement. We're running about 180.

MS. EMERSON: Sonoma Clean Power is a
550-megawatt peak load and we have three people
working in procurement.

CEC CHAIR WEISENMILLER: Yeah, how about
you?

MS. EMERSON: Oh, I'm sorry?

MR. RANDOLPH: He's asking Scott.

MR. OLSON: We have desks that do both
our retail and commercial and there's roughly
about, I want to say about four dedicated to
California, but we're buying and selling
throughout the country.

CEC CHAIR WEISENMILLER: Yeah.
CEC COMMISSIONER HOCHSCHILD: Another question, a different line, actually around electrification. Looking ahead at how that can impact reliability. ISO's not with us today, but I think I'm not doing great violence to their view saying that as electrification expands it will -- their view is that it will increase reliability.

And certainly, I think there's a diversity of views, actually among the Commissioners, it's about how quickly that will proceed. I'm very much in the camp that long term, yeah, evidence suggests that we're going to see electrification. Almost everything, we had lithium-ion in 2010, $1,000-a-kilowatt hour, we're looking at $130 day. Tesla says they are going to hit $100 by the end of the year.

We have 400,000 electric vehicles on the road today, we are adding 12,000 a month. We're seeing technologies like electric heat pump water heater already here and which were $3,000 or $4,000 two years ago, it will be $1,200 today and falling.

And looking ahead, we need all of these technologies obviously to be a good citizen of
the grid and to have voltage regulation, and telemetry where we can.

I’d appreciate your thoughts on that question of how electrification supports or can support reliability and what else we ought to be doing to ensure that it does, or your own views on the trends as we’ve been discussing them.

MR. CUSHNIE: Well, let me lead off here, first Commissioner Hochschild. I appreciate the pitch for Edison’s clean power electrical pathways vision.

I'm going to ask you a question and it will be a little bit different than expected. Electrification across our various ought to be very beneficial for our distribution system by leveraging customers' usage of electricity, and adding their usage, and turning them to, you know, mini sources of supply by aggregating them.

We've created a more resilient distribution system, which is really important. The more resilient our distribution system, the more power we can source at the distribution level, then the less issues we have on the transmission side, the less need we have for large-scale generation.
So, it's very complementary to what Edison would at least like to see happen with its wires and poles business. And I'll stop there. You know, I'm happy to go on and on. We're very excited about this future.

MS. TIERNEY-LLOYD: Actually, Colin said a lot of what I would have said as well, which is we see electrification providing some additional routes to resiliency on the grid. And increasing utilization of existing infrastructure. So, hopefully, deferring the need to add a lot of new investment on the grid for reliability purposes.

So, with the increased utilization, we also see that as providing affordability benefits to consumers. So, that's our perspective.

MS. EMERSON: And I think from Sonoma Clean Power's perspective this is a very exciting time for us and we had the privilege of working on the CEC grant, in which we’re greatly expanding electrification issues and heat pumps. And we have other programs that we, we gave away free car charging devices to our customers, and so that we can get into an aggregated type of program and offer demand response type of services.
Also, as a result of the fires in the rebuild we're working with the community to help electrify and make those new bills more energy efficient. And electrification efforts are being done in all of our various city councils.

CPUC COMMISSIONER PETERMAN: One quick question about your program at Sonoma, on transportation. How are you funding that?

MS. EMERSON: How are we finding it?

CPUC COMMISSIONER PETERMAN: Funding it.

MS. EMERSON: Oh, funding. It comes through our program budget, which is as a part of our reserves that we're able to maintain, and then we'll have a budget item for those programs.

CPUC COMMISSIONER PETERMAN: Okay, thanks.

CEC COMMISSIONER MCALLISTER: So -- oh, I'm sorry, do you want to --

CPUC COMMISSIONER PETERMAN: I want to hear his answer to the question.

CEC COMMISSIONER MCALLISTER: Oh, okay.

MR. OLSON: Help me out there. So, I would say two things, Commissioner. One is that when you have more certainty on electrification, more direction from the state for where we are
going I think that will help to spur additional investment in reliability.

I think in recent years when loads were flat or declining, perhaps, and certainly there was a move away from gas. The thought is what will be the resources that we'll replace, there was some uncertainty with where the state was going.

With more direction on incentives for batteries, with more direction on incentives for electric vehicles, for homes that will now provide that growth trajectory that I think give the investment signals that investors need to go ahead and bring in capacity that will be beneficial.

The second thing is just on technological innovation. And like Deb mentioned and the same thing on the ESP side, when we work in competitive markets we do a lot of things with our retail customers on behind-the-meter solutions to differentiate ourselves. And that I think, also, helps provide some of the additional reliability that our customers are interested in.

CPUC COMMISSIONER PETERMAN: Thank you.

CEC COMMISSIONER MCALLISTER: So, I
wanted to sort of continue on this line and ask a
version of what I asked the previous panel, which
is so it's great to hear that, you know, EnerNOC, I know and others are also doing wonderfully
behind the meter technologies, and behind-the-meter help manage demand charges and overall
economic efficiency of energy consumption, both
with electricity and natural gas I think in the
context of this electrification.

How do we turn that around and provide,
and get it grid facing and allow that same
wizardry to provide a resource wedge that's
comparable to the rest of our supply in order to
do just the things that you are all talking
about. Optimize the distribution grid in a way in
pushing more investment up into the sub-
transmission, transmission, and really focus on
sort of distributed assets and optimize with very
sharp pencils how we utilize our distribution
grid. That seems to still be a piece of the
puzzle. How do we scale demand response? How do
we provide customers with the right signals to
enable decision making supports the state goals,
both for decarbonization and reliability.

MS. TIERNEY-LLOYD: So, thank you for the
question. It's not a simple answer to respond to that. As I mentioned earlier, we're just starting to integrate demand response into the wholesale market so that we have that grid-facing resource, where previously it has been under the control of the utilities and used primarily for distribution purposes, but also in support of the grid when it needed to be.

We actually have some resources that are grid-facing. We have about 88 megawatts of in-front-of-the-meter storage in PG&E service territory and about 3 megawatts in San Diego's service territory. So, those resources are also starting to be deployed.

There are a couple of RFOs that are out there pending. We'll have to see what the results of those, as well as the CCAs have issued some RFOs. But again, we'll have to see what those resources are selected through that process.

In terms of behind-the-meter integration, and that's primarily being looked at for distribution purposes, but can also provide transmission level relief. We're very early stages on that in terms of the integrated
distributed energy resource proceeding and the
pilots that are in play there.

There are some studies that the CALISO is
doing in terms of what are the local reliability
needs and what would we need to manage the
resources to do? How many hours would they need
to be available? What are the hours? Those
kinds of studies, we're still waiting for the
results of that.

So, I think there are a couple places
where DERs are beginning to be plugged into the
system. And I think once we get over these
thresholds of establishing program rules and
understanding what the actual needs are on the
grid, I think we're going to begin to see more of
that being integrated into the grid. But it's
still a little early stage at this point.

CPUC COMMISSIONER RECHTSCHAFFEN: I had a
question for Deb. I appreciate your comments
that you're now transitioning to more long-term
contracts and looking at centralized procurement.

Right now, almost the entirety of our RA
contracts are fossil contracts. What are you
plans for meeting that need with non-fossil
resources?
MS. EMERSON: So, we do have many resources in our resource adequacy plans that are not fossil. And I believe that the Energy Division just requested a data request on that in April for our ten-year out, what every LSE's contracts look like.

We have geothermal, which is around the clock. We have solar, we have wind. We do have some fossil, of course, as well. And I think with the addition of storage and where we'll see that leading to on the grid, once LSEs are meeting that mandate, but we're not there yet.

So, Sonoma Clean Power is currently negotiating a storage contract, a long-term storage contract. And I know many other LSEs are doing the same right now as well. So, we'll look forward to seeing how that plays out in being able to, you know, help meet --

CPUC COMMISSIONER RECHTSCHAFFEN: Your obligations under our storage mandate, at least, is much less than for the investor-owned utility. So, I'm wondering, are you planning to do significant storage procurement? Do you know if other CCAs are?

MS. EMERSON: I can't say for other CCAs.
I do know what we're negotiating right now is slightly above what our mandate is and we certainly look to likely procure even more than that. We're seeing prices decline, as you can imagine, with the push to that mandate, and more storage people are coming out to offer those products. And so, we don't want to buy too much at once. And I think for hedging strategies you see that where you'll buy products over time so that you can capture various price.

MS. TIERNEY-LLOYD: If you don't mind, you asked a question on the previous panel about whether demand response can participate in direct access programs. And I know the answer to that. I can respond to that, if you'd like.

CPUC COMMISSIONER RECHTSCHAFFEN: I was more interested just as a factual matter what the level of participation is. But I welcome your comment, absolutely.

MS. TIERNEY-LLOYD: So, commercial industrial customers that participate in direct access also are eligible to participate in demand response in the utilities' programs. And there's a fairly high percentage of those customers that actually do participate in those programs.
CPUC COMMISSIONER RECHTSCHAFFEN: Thank you.

CPUC PRESIDENT PICKER: Further questions?

MR. RANDOLPH: Are there further questions?

If you'll indulge me, then I have questions. To set up the question a little bit, what I've heard somewhat from all of you is, you know, there's one major issue in providing resource adequacy as we move into this new paradigm, and that's certainty. And there's a lack of certainty for both the sellers and the buyers on what the market's going to look like.

And then, Deb, you mentioned in your opening comments, you know, we need to think differently about transition versus the permanent. So, I'd actually like to throw it to you first, and then others.

You know, what is your vision of what a transition would look like that helps create some of that certainty around the needs for resource adequacy versus what the permanent look like?

And then, again, I'd be interested to hear from the other three, as well.
MS. EMERSON: Sure. Thank you for that.

And as you recall, when Resolution 4907 was being developed we sat down at the table and wanted to work with you to figure out what's the best way to make sure there was a fair and adequate transition, without as much disruption.

And part of that was getting LSEs, in particular CCAs, involved in the load forecasting process at a much earlier stage. That's really critical. And the IOUs need that information in order to do proper planning.

And so, that was kind of where we are now. And we're just seeing how that's going through. We're just a few months into that resolution.

And then, you know, I do believe that a multi-year, forward type of obligation will definitely help all the commissions, and the CAISO be able to better properly plan. It does give that certainty to these other generators that need to be able to capture costs over time and will hopefully make prices more competitive than trying to capture all of that in one year.

So, I commend the Commission in adopting that yesterday. We'd like to see how that works.
So, I think before jumping to the central buyer, and we've got to do this, let's take it a step at a time. Let's look at what the results are of these good decisions that are being made and be able to see how that plays out.

MR. RANDOLPH: Colin, Scott?

MR. OLSON: I'll go. Yeah, thanks, Ed.

As I said in my opening comments, we kind of look to what has been successful in other markets that Direct Energy's been engaged in. And we find that longer tenure definitely can provide them some investment signals that are needed provided there's that capacity market that gives you the transparency and liquidity so we can properly hedge our risk. And that we have a lot of good data on what the actual prices are for us to invest, for others that are actually providing capacity in the market to come into this market, to give those signals that are necessary.

Much like Deb, we have reservations with the central procurement mechanism because it really tends to be an inefficient solution that doesn't lead to individual LSEs procuring what they need to meet their individual goals.

If we're going to more choice, and we're
definitely going down that road, having central procurement just is not a -- it doesn't fit well within that model. What are you going to procure? If you're procuring gas and now you are going to allocate gas to everybody, but if you have entities that don't want the gas in their portfolio, what do they do with it in the absence of a market where they can now trade and sell this because, again, signals are not liquid for them.

We have the best background on what we need, what our incentives are, what our customers need, and we think by having those longer-term price signals with the market we can more efficiently meet those requirements.

MR. RANDOLPH: So, Colin I will get with you in a second. To push back a little bit, Scott, you and some of your colleague businesses have definitely, for a long time made it clear that you think a central capacity market is the solution. Not that I can completely forecast the future, I don't see that in California's future any time soon. Or, if it's there, it's relatively -- it will be relatively controversial to get there.
And I know if you go back and look at the Green Book, and some of the analysis there, not all markets that are fully competitive and more competitive in California have capacity markets. But maybe you don't have to answer, now, but I would really encourage folks as they submit comments, to really think of what are the alternatives, you know, beyond just some alternatives that have been thrown out again and again over the years that aren't moving forward in California.

MR. OLSON: Yeah, it's a fair point. And, you know, we still continue to toot our horn, in that regard to the things that we think would be effective.

We've filed comments, certainly, in our RA proceedings to say that if there's going to be no central capacity market, having some multi-year procurement can be successful, provided, again, we get some sort of flexibility. As I mentioned in my comments, our customers are very price sensitive. For us to go into a lot of long-term contracts without the ability to hedge, without the ability to trade efficiently, some other sort of mechanism to allow that to happen
or at least some reduced amount of forward procurements. We don't have to do a hundred percent, into year two, year three, year five, what have you, so we do have some room to modify our portfolios as necessary, is something that we would consider.

MR. RANDOLPH: Colin?

MR. CUSHNIE: Yeah, I think as Scott just laid out, the crux of the problem. We have load-serving entities who understandable want to procure what their customers want. They don't want to be financially exposed to those commitments more than they have firm events from their customers.

But what the customers want may not completely line up with the reality of the grid as it exists today. And so, I'm going to pause it again nobody wants to buy 750 megawatts from Ormond Beach, an old, aging, fossil-fuel facility, in the Oxnard area, but it's needed. So, who's going to buy it? So, from our perspective, we need to have a transition plan. And that transition plan needs to consist of two steps. I already described the first one which is in the IRP process let's put together a
comprehensive study effort to figure out how we transition away from gas-fired generation and keep affordability in mind as we do that.

But there certainly an arc that we can follow, as we reduce our reliance on gas-fired generation.

And then, what's going to replace it? Now, what's going to replace it are probably requirements that we can put out there and require all load-serving entities to go out and procure. So if we are talking about distributed resources, flexible resources. We can put those requirements out far enough in advance. And make people know that if you're in this business, you're in it forever. You're not in it for tomorrow, or the next day, or the year after.

It's a forever business.

And then, you go out and make those long-term commitments to serve your customers' requirements. And then, that will allow the gas-fired resources to retire in an orderly manner and keep the system reliable.

So, the end state is basically trying to figure out what are those products and those, we'll call them, standard terms that we're going
to be looking for to the greatest extent possible.

And we're really not looking for a centralized procurement entity in this transition state. Who's going to buy the stuff that nobody wants to buy?

And those are going to be the tough decisions that I think President Picker talked about.

CPUC COMMISSIONER GUZMAN ACEVES: Is there a response to that Ed or Scott can give? -- because I think that kind of sums up where I am personally on these particular geographic areas. Do you agree with that? Is that --

MS. EMERSON: So, one, in response to who wants to buy the units that nobody wants? We certainly understand that. And I did want to just make it clear, make sure everyone understands, so a CAISO tariff operates right now. So, even if you had gone out and purchased 300 megawatts of Ormond Beach, that didn't necessarily erase your obligation of what you could have been CPM’ed, well, however you would have helped the overall system efficiency.

But the way that it works out is that you
still likely would have got CPM’ed.

I do think doing longer-term contracts, however, would help those types of resources be available in the market as long as they're needed through this IRP planning process, so that we are able to look at what's coming on. Where do we see those resources are going to be in future years and to work through this phasing out?

But I think you've got to have those long-term contracts available to the market, and that's going to help bridge that gap.

CEC COMMISSIONER MCALLISTER: I wanted to, well, really, it's an exhortation. But, you know, it's been notable here we've been talking about the load forecast, and how critical that is and we're talking about the procurement stack and how critical that is. And so, we also thought of -- you know, we generally thought of these things as a one-two, like a sequential.

And load forecast is done and, therefore, we can make all these decisions about procurement. Well, that's breaking down.

So, you know, I want to exhort all of you to participate in the load forecast sort of updates, that includes methodologically, and then
implementation, get them into the Commission's process, so that this can be an intentional process and not a co-dependent process.

So, you know, we want this to be very transparent and intentional, and get to a new forecast that serves all of our needs in this new reality, rather than sort of have the dog chasing its tail. So that's critical. And a lot of this does go back to the forecast. The forecast that then goes over to PUC for their respective uses.

So I guess it’s an exhortation to come visit us in that process.

MS. TIERNEY-LLOYD: I just wanted to add one additional comment to the conversation that we were just having. Not having price discovery or value discovery in a certain area can be an inhibitor for having resource development in that area. So, we understand there are old plants that nobody wants to buy. But indicating through price signal that there's value in developing a resource in this area is valuable. And it may be demand response. It may be behind -- it may be in-front-of-the-meter storage. It may be something like that.

But looking at some fungibility in terms
of the -- what has been the historical resource base and trying to encourage new entry, that's one way to do it to send new price signals.

One thing I'll just say, I know capacity markets are not the panacea, but where they have capacity markets that work well, you can compare on price demand response versus any other kind of generation type.

And so, where they don't have capacity markets, and Texas is an example where it's an energy-only market, they have out-of-market constructs to encourage other types of resources, such as demand response for emergency purposes. Or, the utilities continue to offer those kinds of programs.

So, absent a capacity market, then we have to look at what have other -- how have other markets dealt with encouraging resource development.

MR. RANDOLPH: I think with that we're at the four o'clock hour, so wrap up --

MS. FELLMAN: Three o'clock.

MR. RANDOLPH: If you'll indulge me for just a real quick wrap up. One thing, I want to make note of something that -- not to call you
out too much Deb, but something you said and something that I'm being -- I've seen several times, now, in documents produced by the CCA Trade Association in Sacramento, that repeatedly said the PUC does not have a role in resource adequacy, that that is the job of -- well, I think as you phrased it, of the ISO of WECC.

And I just want to remind people, Code Section 380(a): The Commission in consultation with the independent system operator shall establish resource adequacy requirements for all load-serving entities.

So, it is very clear the PUC plays a direct role in resource adequacy in California and the Legislature does look to us as the responsible agency.

With that said, I actually want to build on something Commissioner McAllister just said. Which is, if we're moving into this new paradigm with a lot of uncertainty, a lot of new resources, a lot of new players, one of the things we're really learning is things that were backwater decision-making processes, like the load forecast, not to say that was too backwater.

(Laughter)
MR. RANDOLPH: There weren't -- you know, that was not something that a lot of people beyond some core folks paid attention to year after year. But that is actually something that is becoming increasingly complicated and increasingly important for lots of parties to give input in as it's developed.

And similar for a number of issues here, I'd just encourage us, as we look at these resource adequacy issues to actively participate in each part of the decision-making process, because we need that input from everybody. Thank you.

CPUC PRESIDENT PICKER: Thank you.

(Applause)

(Pause to change seating)

MS. FELLMAN: While we are switching out, I will go over the end of the day. We are going to have a rapid round from the Ad Hoc committee. We are going to give them two and a half minutes each to give us their observations for the day and then we'll turn to President Picker, we will turn to you for some closing remarks and a discussion of next steps. And then we will have public comment. Could we have the audience's
attention please so we can move? So again what we are going to do is five minutes with the Ad Hoc, and then we will turn it over to President Picker. And the rest of the afternoon Michael Colvin will come up and we have ten public commenters. So, we can decide how many minutes to give them each.

So, I am going to turn it over, first, to Commissioner -- I guess Chair Wood.

MR. WOOD: Oh, Pat's good. One of the primary benefits of competitive markets has always been that the risk of investment that was transferred from the backs of captive customers onto the pocketbooks of people who can manage that risk, who or are paid, who are educated, who know how to manage that risk better.

And so, I think about it like a rheostat on the wall to dim or upper the lights. At zero would be your EROCT, you know, energy model where zero percent of the costs on the back of the captive customers for that extra investment.

All the way up to a hundred percent, which would be a vertically integrated state, like any of your neighboring states. Virginia's always was my model because I lived there for a
while.

So, capacity markets are somewhere in between. The three-year market that PJM, in New England have, that we're talking about here, that maybe you all adopted, in fact yesterday, is kind of in the middle. From a producer's side, the crappy part of my French, MISO and New York models are like at one year. So, that's not very directionally signaled to anybody. I mean, it's just an administrative mess.

But don't be scared of FERC. I was there and it was bad. I know for 2000 --

(Laughter)

MR. WOOD: -- the good guys came and cleaned it up. But New York is a single-state ISO, just like this one. They have the not so -- I'm not so crazy about a one-year capacity market. But they work back and forth with FERC. And I dealt with a number of capacity market decisions. FERC cannot impose a capacity market on any state. It's not in the law. All the states that have capacity markets, TTOs, that they brought that to the Commission and asked them to do it.

Resource adequacy I think can be dealt
with by one of those kind of constructs, sound
like you're there.

The renewable contracts, it's two
different processes, I understand that, but I
wonder if there's a way to somehow marry that
together. And I'm kind of hitting this new today
because I don't live it like you all do. But I
wonder if there's something there that can be
integrated together.

As much as I love the renewable guys, I'm
on the board of one of them, 20-year contracts is
a pipe dream from the past. You all were, again,
great to finance that for the rest of the
country, but people are settling for three- to
five-year contracts, with banks buying the
merchant ell -- you know, again, on the backs of
individual customers like WalMart, and Target,
and the military bases, and the school districts.

So, again, I think those problems, while
separate, maybe have an integrated type response.

Centralized procurement, I now finally
figured out is not the same as centralized
market-based process. So, I think you probably
have more answers, more happy endings with the
PJM type approach than maybe the other ones, just
because we've been there and there's people -- there's history on it. None of them are great.

I hate them. I never endorsed them. They weren't part of standard market design because I just didn't think that's what the whole point of markets was, was to go kind of go back and reregulate.

Which leads me to kind of my last point.

I'm sorry, Ralph, I'm taking one of your minutes. It's clear that Picker's ready to make a decision, so I hope all the rest of you are, too.

(Laughter)

MR. WOOD: But endeavor to achieve the equally grumpy outcome that I think is the California way. It's certainly worked for me in the past, too, I think it will be good.

Do resist the California urge to tell everybody exactly how to do everything. Just state your goals and let them use market. And these people we heard from today. They're just as good as the last generation was. Again, you all have the cream of the crop out here. Let them go to work. Don't do it all for them. Let them do it, and figure it out, and you'll come up with good outcomes.
The final thought, your grid is evolving. It's evolving faster here than anywhere, say, probably Hawaii. Settle these trans-issues in the next six or eight months so that there is a more regulatory certain future for the investors in that future network.

I think billions of dollars in savings and scores of gigawatts of clean energy, which I think we all like, and want, and need, are the reward for doing that right. So, good luck and we're here to help.

MR. CAVANAGH: Commissioners, Pat Wood has been extraordinarily generous with his time, his expertise and his boundless charm in the formulation of the Green Book. I think the least I can do now, I'm sure the Texas PUC is listening in, I'll be volunteering to provide equivalent services to the State of Texas --

(Laughter)

MR. CAVANAGH: -- in understanding and learning from our many useful California precedents.

I would also, for my part, like to say that I think -- I've got my Blue Book back up here with me. The fundamental issue underlying
the Blue Book actually, I believe, was one that surfaced powerfully and repeatedly today. And that issue was in terms of the rational for regulation in the utility sector, is there a natural monopoly character associated with resource procurement and resource portfolio development, or not?

And the answer in the Blue Book was no, there is not natural -- there's no natural monopoly, there's no regulatory rational, therefore we're washing our hands of all of this. We're not going to make the tough decisions that disappoint some people and disappoint some people a lot. We don't have to. No natural monopoly. No regulatory rational.

Over and over again today we have been repudiating that assumption, one of the worst that any commission ever made, as part of what may have been the worst decision any commission ever made.

And whether you're talking to CCA representatives today, I submit, or providers, or utilities, you are hearing over and over again, yes, within a defined service territory we need someone doing procurement. We need someone
developing portfolios. CCAs believe that.
Utilities believe that.

Yes, it would be more efficient,
Commissioner Weisenmiller, if there were one
entity doing it for the entire State of
California under the regulation of the PUC and
the Energy Commission.

We don't have that. We have a number of
smaller entities getting larger. And I submit
that the fundamental issue today is can we do a
better job of coordinating that procurement,
getting everyone to work effectively together.
And there are proceedings at both the PUC and the
Energy Commission that can do that.

And I hope all of us will dig in
together. We've had 15 years of often
adversarial connection between our natural
monopoly resource procurement decision makers.
Increasingly, they clearly need to work better
together and they need to find the places where
they can share resources. Find the places where,
yes, that rich local diversity can come out, but
see each other increasingly as partners, not as
antagonists.

And finally, Commissioners, on one issue
and one issue alone I will presume to speak for everyone in the room. I've been around long enough to remember when Energy Commissioners and PUC Commissioners not only didn't meet together in public session, they didn't speak to each other outside the meetings. It was turfy, it was adversarial, it was uncomfortable. You're all better together. Thanks for doing it.

CPUC PRESIDENT PICKER: Well, wait until you see us after the meeting.

(Laughter)

MR. CAVANAGH: You've kept up a very good public front

CPUC PRESIDENT PICKER: The first round's on me, all right.

MR. CAVANAGH: We're off to Austin.

MS. FELLMAN: Thank you.

(Applause)

MS. FELLMAN: And just quickly, I want to announce that at lunch -- we have to ask Melanie Kenderdine, but both Ralph and Pat agree to continue in their role as advising us as we go forward with the next steps, so I'm very excited about that.

One quick announcement that may not have
been heard earlier, we are opening up the
customerchoice@cpuc.ca.gov mailbox for comments
after the En Banc, until July 6th, so it's
coordinated with the Energy Commission.

I'll now turn it over to President Picker
for his closing remarks. And I want to extend a
big thank you to all the Commissioners who
participated today until the end.

CPUC PRESIDENT PICKER: I also want to
thank the Commissioners and the audience who have
been strong participants and laughed at all of my
jokes.

(Laughter)

CPUC PRESIDENT PICKER: So, I'm lying to
myself.

But I have to first tell you that
Commissioner McAllister's back hurts, so I'll be
very brief.

There's been a little bit of method to
our madness here and I think that we needed to
really have a vehicle to have a conversation
about these very difficult issues. And there's
still scar tissue in the State of California that
goes back to the years 2000-2001. It was a
splendid failure and the chaos was equally
And people are still in pain over that. And yeah, we see some signs that the
disaggregation of decision making is leading to
similar kinds of trends, and we know that we can
do something about those. So, we’ve had the
opportunity to just raise the issue. In two En
Bancs, we got a series of research questions from
people here.

We tried to actually put some rigor to it
and to look at some other models to see what we
could learn. And now, we’ve started a little bit
more deep conversation to do that.

Now, we’re hoping to actually take the
comments here, the comments that we’ll get
online, some of the things that we’ve discussed
in the other proceedings and bring it together
into what we’re calling a Choice Action Plan.
And we hope to put forward some specific
suggestions, possibly a couple of suggestions.
But probably we will set some straw proposals
that will be default if we don’t get consensus
around some specific set of things in your
further comments. And those will be the areas
that we act.
There are things that are currently underway, as you've all made note. Commissioner Randolph has been very active and she developed a forward capacity requirement. She developed a flexible capacity requirement. These are the kinds of things that we continually do.

But they are, to some extent, the forerunners for the next steps and the next things that we'll do.

So, part of what you'll see then, as well, is some ranking of some of the actions is where it is, at least in our two agencies and a little bit in the ISO, where are we taking action on these issues? Where will the decisions be made? How are we going to then deploy them?

And so, we hope to actually have most of this in place, something to share with people by October, at the latest, so that then we can begin to really emphatically see how does it all fit together.

We tend to disaggregate things by agency. You know, the Energy Commission does the forecast. We break it down by agencies and the ISO helps us to determine whether we're going to meet our reliability goals. So, it can be very
difficult to track where these things are actually being weighed out.

They're all different in time and sequence. Each of the three agencies has slight differences in the way we proceed. In a regulatory manner, our statutes are different.

So, we hope that that action -- that action plan, that roadmap would help people to see how it's coming together and be able to track the actions that we have to take.

So, with that, I'm going to turn it back over to Diane Fellman. Thank you.

Yeah, do any of you have comments or questions at this point?

MS. FELLMAN: Thank you.

CPUC PRESIDENT PICKER: We're going to turn it over for public comment. And our tradition is we give three minutes. Do we have a timekeeper?

MR. COLVIN: Yeah, I'm taking care of that.

CPUC PRESIDENT PICKER: Okay. And do we have a list of who signed up?

MR. COLVIN: We do. So, I'm going to ask or list off names and I'm going to ask -- and I'm
going to give the next person's name up, and if
you guys could come down so we could get through
as fast as we can, so that we can hear from
everybody, I'd appreciate it.

We're going to start off with Karey
Christ-Janer, who's an independent advocate, to
be followed by Woody Hastings, for the Center for
Climate Protection come up to the microphone,
please.

MS. CHRIST-JANER: Good afternoon,
Commissioners. I wanted to say that as a former
CCA advocate I crusaded against Prop 16 in 2010,
with Woody Hastings and many of the people in the
room.

By 2012, I was starting to see a lot of
substantial problems and that's a lot of why I am
engaging in California, with this Commission.

And my notes, I'm sorry for using my
phone. Optimizing, coordinating existing energy
programs is both state policy and further
required by a sustainable -- if you, a state
agency, see handwriting on the wall that state
GHG and other policy goals are at serious risk
directing some partnering between CCAs and IOUs
and DA providers, potentially, to include at
least some sharing of procurement, even resource adequacy should definitely be considered.

Further, however the sharing of programs, and therefore customers, may be not only possible, but absolutely necessary to avoid uncertainty, as well as inefficiency and, therefore, unnecessary costs.

Such program sharing can initially arise from program solutions depending on existing or new, non-bypassing charges, like distribution charges or public program charges.

As I’ve written previously in filings in the IDER proceeding, such partnering should be established in the IDER constructs, text as an umbrella for all the IDR programs including DR and net metering. And then, allowed to flow to the related proceedings.

Allowing overlapping LSE programs can result in a crisis of regulation. There’s plenty of room for CCAs to still be creative.

The CPUC and other agencies should use every tool in their box to solve the problems.

Now, if Hertz Bill, DA bill passes, this could only add more uncertainty and potential for more stranded costs.
The most striking statements I've heard today are the CCAs have not deeply considered what could happen if DA is opened up. This is shocking. And that's from the engaged CCAs who typically show up in these proceedings. Some don't.

Again, the CPUC already has broad authority to optimize programs and there are clear obligations for RA.

Time is well past ripe to be bold and optimize, optimize, optimize, optimize as quickly as possible.

And now, I'm going to give one example from Colorado, which is the other state where I advocate. The commission is poised we're hoping to approve a research plan that is going to achieve 55 percent average renewables by 2026. And that's not just because we have great resources. We have great resources here.

And while it's nobody's fault in the room, and we all got here, including myself, as one of the crusaders against Prop. 16, I agree with a lot of the statements, especially that President Picker, that you have said, that could be a disastrous outcome if decisions aren't made.
So, I really urge you to be bold and do what you have to do. Thanks.

MR. COLVIN: Woody Hastings to be followed by David McCoard.

MR. HASTINGS: Good afternoon. Woody Hastings with the Center for Climate Protection.

Thank you for the opportunity to speak.

As many of you know, the Center has been advocating community choice since roughly 2005.

For its greenhouse reduction potential, we still believe that -- we believe it’s working.

We believe that to be true.

One of the commissioners in the opening comments said something to the effect of it’s, you know, a big, confusing puzzle that we’re trying to solve here. And I think a bit part of that confusing puzzle is how do we navigate to, you know, this new paradigm, this new clean energy economy. And so, I urge you to seek community choice agencies as an opportunity toward navigating toward that clean, de-centralized energy economy, while adhering to principles. The principles of GHG reductions, reliability, equity and affordability.

Embrace the CCAs, the community choice
agencies, as an excellent, maybe not ideal, but
an excellent collaborator as we navigate toward
that future.

You know, I think it was Mr. Cavanagh who
said you have the tools, he was referring to the
regulatory powers. And, you know, yes, the kinds
of regulatory tools that you can use, I'd like
those to be not so much as a hammer to crush
innovation or crush things that might be new or
different, but use the tools that are appropriate
to facilitate the innovation and facilitate that
transition to clean energy, localized economy.

And as Commissioner said, adapt the
regulations to the changing scene to the
evolution to a de-centralized system. So, that
resonated for me.

My other main point is just around I
heard, again, questioning of the opt in, opt out
structure. You know, for me, I would like to see
that to be a settled issue. Not because it's
been the law for 16 years, not because it was
proposed in the Legislature in 2014 and, you
know, just rejected. But because there is now
about 20 operational community choice agencies in
the state and in most of the populated areas of
the state.

And, you know, and so probably opt-in, opt-out is really language that's a phenomenon about the launch period. That's it. The real question is, as Mr. Borenstein pointed out, is what's the appropriate entity, load-serving entity that is a default provider in any given territory? And I think there are many reasons, local, public, not for profit that would say that it should be that entity as the default.

And I'm not sure what the point of raising that issue is anymore. Are we going to start all over, tell them go back to the beginning and go with an opt-in? So, I just think that that is sort of case in point, of not sort of embracing and working well with the CCAs, and I'd like to see that happen. Thank you.

MR. COLVIN: David McCoard, to be followed by Neil Reardan.

MR. MCCOARD: My name is David McCoard, from El Cerrito. I have three points.

First, the present situation for energy supply and so forth is much different from 2000. There's no comparison. And now, we have many diversified energy suppliers and energy sources.
They are -- we get the procurement directly from the energy producers. We don't depend on the energy markets so much. I'm thinking, especially with CCAs and with direct access.

And so, they're pretty much immune from the 2002 set market manipulation.

And second, we need to add a section to the Green Book on the benefits of customer choice and how we can take advantage of them. And things that change, times change so we do have customer choice.

Let's figure out what the benefits are and figure out how we can use them, leverage them for the benefit of everybody.

And third, I'd like to see all the stakeholders get together around a single table, and that includes the PUC, the CEC, the ISO, Legislators, CCA, direct access providers, and the main classes -- and customers.

Not to talk at each other, but to talk with each other for the common benefit.

MR. COLVIN: Thank you. Neil Reardan, from Sonoma Clean Power, to be followed by Leah Goldberg from East Bay Community Energy

MR. REARDAN: Hi, good afternoon. Just
two brief points. First of all, I think it's fair criticism that there is room for improvement in raising our awareness, whether it's on the MUNI, or a city bus, or a farmer's market. So, I think that's a fair point to be taken. However, I want to keep in mind, too, that we shouldn't hold perfection as the goal. I think, you know, we're trying to make incremental steps for improvement. And unfortunately, you know, not a lot of people are as excited about their energy bills as most of us are. So, kind of a broader challenge, but one that we accept.

I also just wanted to clarify one point on RA and reliability and the conversation with Deb, because I was involved with some of those comments. We do recognize and know that the PUC oversees RA, in conjunction with the ISO, and rightly make our RA filings here.

More broadly, though, the point that we were trying to make is it's reliability at a broad level that we associated with the ISO, FERC and WECC. So, thank you for your time.

MR. COLVIN: Leah Goldberg from East Bay Community Energy, to be followed by Chris Hendrix from Wal-Mart.
MS. GOLDGERG: Good afternoon. My name is Leah Goldberg. I'm with East Bay Community Energy, or EBCE. EBCE is pleased to offer these brief comments in today's En Banc.

We're a newly-launched CCA, serving 11 cities in Alameda County, the unincorporated area of Alameda County. And when we launch residential customers in November, we'll be the largest CCA in PG&E's service territory.

And I want to say that I agree with Mr. Cavanagh, earlier today, that CCAs should be held to a high standard and I believe we're up to it.

We’re contributing to our county and member cities’ carbonization goals, outlined in their climate action plans.

Our decarbonization efforts go beyond the state’s minimum targets through our procurement of renewable and carbon-free energy. We are also working to provide our community with benefits from local investments, as outlined in our local development business plan.

EPCE is partnering with PG&E to bring clean energy projects to Oakland, as part of our Oakland Clean Energy Initiatives.

EPCE has recently launched a solicitation
for up to 1 million megawatt hours a year, of renewable energy, from projects sited throughout the State of California.

As we mentioned in our written comments, EPCE recommends that the CPUC focus on developing a roadmap to ensure that there's coordination between the many ongoing proceedings, here at the CPUC, that address reliability, affordability, and adequacy and decarbonization.

Some of the key proceedings underway include resource adequacy, power source adjustment and integrated resource planning.

Similar to the DER roadmap process, a roadmap in the context of customer choice will help illuminate the path forward.

As the Commission resolves these key proceedings, market participants will have the regulatory certainty they need to continue with long-term investments in California's energy supply system that will help California achieve stable, lower carbon, reliable electricity, that is affordable for our customers.

ECEE and the Alameda County community are an integral part of that solution. Thank you for allowing me to comment.
MR. COLVIN: Chris Hendrix from WalMart, to be followed by John Rizzo from the Sierra Club.

MR. HENDRIX: Thanks for the opportunity to comment. Chris Hendrix with WalMart. So, we operate in the various states and throughout the U.S. as well as the world and see all the different models of competition. So, it's kind of a unique perspective.

In fact, we operate as an ESP in 11 states that are competitive here in the U.S., plus the UK. So, we actively do everything that the ESPs do, we do ourselves.

Here in California, we have direct access accounts, we have CCA accounts, and we have still regulated accounts, so a combination of all of them. What we see is direct access gives us the best opportunity to provide for our business and make us buy power the way we want to buy power and have it renewable we want to have it renewable.

We see the CCAs as just another regulated monopoly. You get two choices from them, so it gets a little bit more, but it's still a regulated monopoly function that we buy from.
So, highly encourage with this process itself to talk about competition, to look at the other markets and see what works and what doesn't work. I can tell you personally, from the markets that we're all in, there's really one only competitive market that we're in. And so, we're not in Australia, so I can't give you the Australian example. But Texas is the only market that's fully competitive that works for commercial and industrial customers. Thank you.

CPUC PRESIDENT PICKER: And thank you for your participation in our previous En Banc.

MR. HENDRIX: Your welcome.

MR. COLVIN: John Rizzo from the Sierra Club to be followed by Louis Irvin, from ORA.

MR. RIZZO: Good afternoon,

Commissioners, thank you for allowing me to speak.

The Green Book presents a lot of worry about potential impending energy crisis but does not provide any data to really back up these claims. I think things are a lot different than they were after the Enron debacle, when I actually started working as an advocate for CCAs,

Today's energy market is more tightly
regulated and diversified than during the Enron crisis and before the Enron crisis. And I think the point that the gentleman from WalMart made that CCAs are regulated. They're highly regulated. This is not an unregulated market. In fact, I think there was an argument to be stated that they're more regulated because they're controlled by local governments. Local governments, with elected officials running these CCAs.

The CCAs are directly accountable to voters and to ratepayers in a way that the investor-owned utilities are not accountable. Investor-owned utilities are accountable to their stockholders, which is why we have you folks here to oversee them.

The CCAs are required to be in compliance with all existing state law and regarding reliability and resource adequacy. When CAISO, FERC and WECC are doing their jobs, they're including -- you know, they're looking at CCAs, as well.

But where CCAs stand out is in the choice that they give to customers and their -- and the energy goals that they have delivered. CCAs are
providing lower and more stable rates than the IOUs, but they're providing higher levels of clean energy and greenhouse gas-free energy.

For example, CleanPowerSF, all customers are provided with 40 percent clean energy or more. MCE starts at 55 percent clean energy. These are below or at PG&E rates. Several CCAs offer 100 percent green options at a nominal premium. And PCE will go 100 percent for all customers by 2025. CleanPowerSF will do the same by 2030.

If the state really wants to meet its greenhouse gas goals, we need the competitiveness that CCAs are providing. Thank you very much.

MR. COLVIN: Louis Irwin from ORA, to be followed by Mary Lynch from Constellation.

MR. IRWIN: Louis Irwin passes.

MR. COLVIN: Okay. Mary Lynch from Constellation to be followed by Nancy Radar from California Wind Energy Association.

Mary Lynch, right?

MS. LYNCH: Yeah. Thank you for this opportunity. Thanks Marshall and thank you, Commissioners. This was a great session today.

I wanted to just, I think, reiterate --
Pat Wood said a lot of what I was going to stand up and say about the capacity market construct. And the most important takeaway, as we move into track two of RA, is that there's a very big difference between what I think you're thinking of as the central buyer and who's going to be the central buyer, versus a centralized clearing market that allows buyers and sellers to find each other and do transactions and facilitate market liquidity.

When we look at a retail choice market environment, that type of construct seems very essential to us because our energy prices don't support investment, they're not intended to support investment because we're not prepared to let prices go as high as they do, for instance in Texas.

And so, the capacity construct, as Pat as, sort of a mitigation measure to deal with the energy price mitigation. And we have to treat it as such and use it as such in the retail choice environment.

So, I just wanted to urge that we don't take that off the table. As we move into phase two it's going to be a very important construct
for us to look at and investigate because it is a crucial element of a retail choice market that has capped energy prices. Thank you.

MR. COLVIN: Nancy Radar, to be followed by V. John White from CCERT.

MR. RADAR: Thank you. Nancy Radar from California Wind Energy Association, or CALWEA. We are one of the seven renewable energy trade groups that submitted a joint set of comments on the Green Book, which echoed Ralph Cavanagh's statement at the outset of this workshop that we believe the Commission has all the tools that it needs to address the issues raised in the Green Book to hold all LSEs to high standards, and to prevent a drift into another energy crisis.

The renewable energy parties stresses concern that the Commission has allowed the wholesale renewable energy market to stall as a result of the customer load migration. The Commission must address the very real risk that some load-serving entities will not be able to shoulder their share of renewable energy and greenhouse gas mandates in the near term, if only because many of the CCAs are not yet on their feet, at a time when we should be procuring new
renewables.

The Green Book really underplays, if not ignores, concerns surrounding achievement of the 33 percent RPS goals and the 50 percent RPS goals. The CCAs do not possess the same level of creditworthiness as the utilities, and there's uncertainty surrounding when and whether recently-formed CCAs will obtain creditworthiness.

There's no mention in the draft Green Book of the fact that the CCAs RPS compliances to date relied heavily on short-term purchases of existing out-of-state resources and on the front end of new projects built under long-term utility contracts, we will not meet our greenhouse gas targets this way.

So, we urge the Commission to develop a backstop plan to ensure that the state's near-term renewable energy goals will be achieved, which might mean that the utilities need to purchase on behalf of CCAs as part of a transition plan.

The renewable energy partners also underscored that -- well, it's an understated point that affordability is important. About
four in ten Californians are living in or near poverty. The Commission should never lose sight of the important of minimizing total costs, while meeting our climate goals and equitably spreading cost along the way.

To me, the Commission really needs to assess its own policies on heavily-contributing and less affordable service.

As San Diego Gas & Electric stated earlier, the current NEM cost shift is $400 million a year, and the Commission's IRP analysis showed that this will balloon if NEM rates if they're not reformed. This is neither equitable, nor affordable.

And earlier, Professor Borenstein's comment about the New Solar Homes mandate of the Energy Commission's. That analysis assumed that the current NEM rates remain indefinitely. And that really should be reevaluated based on more rational NEM rates that I hope the Commission will adopt next year. Thank you.

MR. COVIN: V. John White, from CEERT, to be followed by Rick Umoff from SEIA.

MR. WHITE: Thank you, Commissioners, and to the staff for putting together a really good
day. Covered a lot of ground, a lot of very high-quality comments and speakers.

And I find myself drifting back in between the history parts and then what happened, as I recall, some variations of thinking. But where does that tell us about where we're headed. So, a couple of thoughts, both the big picture and then smaller.

First of all, I think it's been said by Matt Freedman where the choice is a means to the end, it's not the end in itself. It should be looked at through the lens of how to help us achieve our goals of reliability, and decarbonization, and affordability. That should be the test.

I also thought there was a couple -- the line of the day from Severin Borenstein was regulatory arbitrage. I thought that was a really interesting concept in terms of thinking about all the effort that we place on customer incentives, and getting customers to buy things and do things, we have to also be thinking about how do we create value to the grid. Because it isn't just now about more renewables, more DER, it's about putting those resources to work, to
manage the grid and to reduce our dependence on fossil fuels. In that regard, I recall, when after the collapse of market, in AB1X we created the California Power Authority. That's where the Energy Action Plan came from. This was an interagency opportunity. I always liked it from the advocacy standpoint because you had everybody there at one time, not unlike an En Banc. But they also had -- I think, when we think about this, there's roles for ISO, there's roles for ARB, and I think there's also a role for Department of Water Resources. The idea that we can never go back and look at Department of Resources backing up the state's credit isn't because that instrument was bad, it's that what we did with it was $40 billion in 30 days. Now, if you have that backup with a more considered approach, then you might have something that could be accomplished. I also think that the State Water Project needs to be thought about as a source of future reliability. We looked in at Bonneville, I think that's another part of it.
In the meantime, there's stuff right before you that is going to help us move forward. The Preferred Resource Pilot Projects are going to tell us and inform us a lot. We're learning. We're going to learn in Moorpark. We're going to learn in Oakland. Those are important things that you all are doing. We're going to hopefully get the RA rules to allow preferred resources to count, including high-grid DR and storage.

And finally, I think we have to just keep at this and that's why these kinds of public meetings are really important because it gives us a chance to talk and think, reflect, and then recalibrate. Because we can't necessarily stay on the course we're on or we well might have a crisis, not necessarily for the same reasons as last time, if we don't keep our visions together. Thank you.

MR. COLVIN: Rick Umoff from SEIA to be followed by Kevin Haroff from the City of Larkspur.

MR. UMOFF: Good afternoon Commissioners and thanks for giving me a moment to speak here. I'll keep it brief.

I just wanted to touch on a couple of
items that we've heard today and iterate some of my support, and also concern.

First, on sort of the utility-scale, large-scale procurement side, we reiterate what you've heard from others, other suppliers that we really need to get procurement moving in this state in order to reach our greenhouse gas emission reduction goals, and reach RPS goals, and really do it cost effectively. And the clock is really ticking on the ITC and PCC.

So, we look to this Commission for leadership. We think the IRP is a good venue to have a discussion around how we get procurement moving, even as things get a bit more complex and more LSEs in the market.

Additionally, looking a little further out, I think it's important to have a stable regulatory framework, procurement framework for large-scale resources so we have a stable, healthy pipeline and market that can deliver these clean resources, as needed.

Switching over to the sort of DER, distributed resource and customer side, it's absolutely important that as we talk about customer choice, we truly mean customer choice.
That we protect the ability of customers to control their own energy use, to invest in customer-sided resources. And that last -- that has not been a customer choice to be in a CCA and that's the last choice that they can make.

We've seen significant benefits to the state on a system wide basis, and also as Bill stated it was for customers, and their ability to invested in distributed solar, batteries, demand response, energy efficiency.

And the state has made great strides and we should not fall or lose ground in that regard.

So, with that, I'll leave with those thoughts today. I guess the last thing I would say is, you know, the Commission's doing a lot of good work on a lot of these areas already. There are open proceedings on things like grid modernization and distributed resources. There's work going on in consumer protection.

I'd urge the Commission to look at what it's already doing to ensure that we don't duplicate or create unnecessary proceedings and make it difficult for the parties to sort of engage together on these difficult issues. Thank you.
CEC CHAIR WEISENMILLER: Yeah, I was just going to note that the IRS released guidance today. That to the extent the State Department of Solar, for a four-year period, four-year window, so, for 2019 is being built.

MR. COLVIN: Kevin Haroff, from the City of Larkspur, to be followed to Shawn Marshall, from LEAN Energy US.

MR. HAROFF: Thank you. Good afternoon, Members of the Commission, and thank you for the opportunity to speak on the important subject of customer choice and its role in California's evolving retail energy market.

As mentioned, my name is Kevin Haroff. I a Member of the City Council, of the City of Larkspur, in Marin County. And in 2017 I served at the City's Mayor.

I'm also a member of the Board of Directors for MCE Clean Energy.

That said, I'm appearing here today solely in my individual capacity and not as a representative by the city or MCE.

I appreciate the efforts of the Commission to engage in a discussion of the challenges presented by the expansion of
community choice aggregation. I have concerns, however, about how the Commission may choose to address those challenges going forward.

CCAs are responding to the growing demand of consumers for alternatives to the historical and public utility model serving the state's retail electricity demand. The expansion of CCAs reflects the confidence that consumers have in viability and appeal that alternative that CCAs represent.

Some have suggested that the growth of CCAs may be compromising the ability of state regulators to ensure the reliability of supply to California's electricity consumers. That simply is not true.

The real challenge comes from the state's decision, long ago, to transition to greater reliance on renewable energy. A decision that organizations, like MCE, have fully embraced.

I hope the Commission is take what is learned today and create a framework in which CCAs can flourish and contribute to the maintenance of reliable energy supplies for all consumers. Thank you again for the opportunity to share my own thoughts on these important
issues.

MR. COLVIN: And Commissioners, our last public speaker, Shawn Marshall from LEAN Energy US.

MS. MARSHALL: Good afternoon Commissioners, thank you very much.

I want to just start out with some appreciation for today, and the first of which is appreciating that your online webinar function worked very well.

(Laughter)

MS. MARSHALL: I spent most of the day watching from my office. And then your phone system worked very well coming across the bridge, so thank you for that. I also want to appreciate – It all worked seamlessly.

(Applause)

MS. MARSHALL: I also want to appreciate the need for the Commission and the CEC to manage a transition to a more decentralized energy model and to catch up to the transition that has been underway for almost a decade.

I've been involved in the CCA space since 2007, and LEAN Energy has been involved in educating and helping the formation of CCAs in
the State of California since 2011. So, it has been quite a while.

I also want to appreciate the PUC's exploration of its own role in an evolved energy market and facilitating the planning effort.

Finally, I want to appreciate that the IOUs, at least one of them today, did say that there was an acceptance that in the future they may just be a pole and wire company, as is the case in many states across the country.

So, now to three points of clarification and one to underscore. I want to clarify something that was said earlier, just so that everyone understands that elected officials are not running CCAs. Elected officials are very important. It is how I came into this space. But they are setting broad policy goals for the CCAs.

The CCAs are managed and run by experienced energy and, increasingly, utility staff that are moving over and becoming part of day-to-day operations of CCAs. So, I think it's important to understand that elected officials are setting policy, they are managed by experienced staff, which is an important part of
risk management, which has been a major theme today.

So, that leads me to my next statement and that is we work with a number of CCAs across the state. There is a genuine and ongoing focus among CCAs on energy risk management policies, what those best policies are, how rigorous they should be, what long-term procurement risk mitigation strategies are.

Some CCAs are looking at reserve funds that are equivalent to six months or one year of operating revenue. Those are robust reserve funds and other mitigation strategies.

So, I think you will hear that echoed that CCAs get it and are working on this all the time.

The last thing I just want to draw your attention to, because LEAN does work around the country, is this question that was raised by Steven Borenstein, and perhaps others, about whether or not a Texas-style market would be appropriate here in California.

And to that end I just want to draw your attention to two pieces of legislation, HB8101 in Illinois, SB2545 in the State of Massachusetts,
that seeks to limit their individual retail markets on the basis of predatory consumer practice and higher costs.

But which, importantly, leave municipal aggregation on the table because CCAs are generally understood to be locally managed to the benefit of their communities, with higher consumer protection thresholds and different levels of public transparency.

So, I encourage you to look at those bills. They are moving through their legislatures. RESA and other organizations have come out vigorously opposed to some of these --

CPUC PRESIDENT PICKER: Can you wrap up?

MS. MARSHALL: Yes, sir. In some, I encourage collaboration and finding solutions that do not pit one bottle against the other.

CCAs are working here. Consumers have been happy with it. There is no reason that CCAS can't, as we move on, offer additional choice within their local structures. And so, there are all kinds of ways to solve it. Thank you so much.

CPUC PRESIDENT PICKER: Okay, so I believe that concludes the public comment. I just want to thank staff one more time. And
start by thanking Edgar up in the control booth,
who actually --

(Applause)

CPUC PRESIDENT PICKER: -- got new
technology to make it work.
I want to thank the Customer Choice Team.
But I think it's the work that we see
here to address on the work of the entire Energy
Division at the CPUC, other staff from the
Planning and Policy Division, and a lot of good
work from our colleagues at the California Energy
Commission. So, I especially want to call out
Kevin Barker for his assistance in pulling the
event together today.

So, with that, thank all of you who
participated today and I want to thank our Ad Hoc
Advisory Committee for their continued support of
our work. So, thank you again. Bye-bye.

(Applause)

(Thereupon, the Workshop was adjourned at
3:51 p.m.)

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

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