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BEFORE THE

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT

COMMISSION OF THE STATE OF CALIFORNIA

CALIFORNIA ENERGY COMMISSION

In the matter of,	)	
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2015 Integrated Energy Policy	)	
Report (2015 IEPR)	)	

IEPR COMMISSIONER WORKSHOP ON THE

DRAFT 2015 INTEGRATED ENERGY POLICY REPORT

CALIFORNIA ENERGY COMMISSION

FIRST FLOOR, ART ROSENFELD HEARING ROOM

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, OCTOBER 20, 2015

10:05 A.M.

Reported By:
Kent Odell

APPEARANCES

Commissioners

Andrew McAllister, Lead Commissioner, IEPR Committee

Robert Weisenmiller, Chair

Karen Douglas, Commissioner

CEC Staff Present

Heather Raitt, IEPR Program Manager

Public Present (* Via WebEx/Telephone)

Mark Krausse, Pacific Gas & Electric Company

Christopher Ellison, Ellison, Schneider and Harris, for Duke American Transmission Company

John Geesman, Alliance for Nuclear Responsibility

Ben Davis, California Nuclear Initiative

Ryan Kenny, Clean Energy

*Carla Viswanathan, Natural Resources Defense Council

*Steve Uhler, California Resident

*George Nesbitt, HERS Rater

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P R O C E E D I N G S

OCTOBER 20, 2015 10:05 A.M.

MS. RAITT: Okay, good morning everybody. Welcome to today's Workshop on the Draft 2015 Integrated Energy Policy Report. I'm Heather Raitt. I'm the Project Manager.

I'll quickly go over the housekeeping items. Restrooms are in the atrium. If there's an emergency and we need to evacuate the building, please follow staff to Roosevelt Park, which is across the street, diagonal to the building.

Today's workshop is being broadcast over our WebEx conferencing system. Parties should be aware you're being recorded. We'll post an audio recording in a few days and a written transcript in about a month.

I'll be making a presentation with highlights of the report today and then there will an opportunity for public comments. We're asking parties to limit their comments to three minutes.

For those in the room, who would like to make comments, please fill out a blue card. And you can give it to me or Shawn Pittard, our Public Adviser in the back of the room.

When it's your turn to speak, please come up to the center podium and identify yourself. And it's

helpful to give the court reporter your business card.

For WebEx participants, you can use the chat function to tell our WebEx coordinator that you'd like to make a comment during the public comment period, and we'll either relay your comment or open the line at the appropriate time.

For phone-in-only participants, we'll take your comments at the end of the comment period.

Materials for the meeting are at the entrance to the hearing room and posted on the website. Written comments are welcome and there is a notice that went out, yesterday, to extend the public comment period to November 10th. That's a one-week extension. And the public notice for the workshop provides information on the process for submitting written comments.

And with that, I'll turn it over to Commissioner McAllister.

COMMISSIONER MC ALLISTER: Well, thank you, Heather.

So, we're here today sort of to -- really, it's the culmination of a long, long process, and many workshops and a lot of work by staff. And so, I want to give Heather, and Raquel, and the whole IEPR team kudos for managing this process. You know, those of you have been involved before, definitely it's a big team effort.

And, you know, keeping the trains running on time and keeping the content and substance high is no mean feat. So, I think we end up with a high quality product.

Now, this is the draft that we're talking about today and I certainly expect that written comments will contain substance of all interested commenters, all of the commenters that are interested in the document and in the various issues. So, I definitely encourage people, if you haven't already, to do a deep dive and listen today to the overview that Heather will give. And make comments that you're prepared to make today but, certainly, as deep as you can go on your comments that are due in a few weeks. It will be appreciated. We actually do read them, must read them, and they can change the document.

So, my interest in this IEPR -- well, obviously, there are multiple. But I think, really, there are two overarching themes. Climate change is the organizing principle for much of energy policy in this day and age and that is entirely appropriate. And California is leading the way in many important respects. We have a Governor who is absolutely committed to making progress and helping frame this debate, and helping show the pathway that is possible, and make it easier for many, many others to mimic, or learn from, follow, lead in

different ways. And I think that's just been valuable. I mean, we take that responsibility very, very seriously. And I think the Governor is providing that vision and thought leadership that the world needs, and not just California. So, very indebted to be actively involved in this process.

Second, as the Lead on Energy Efficiency, I am extremely interested in pushing any number of things related to efficiency. And one of the reasons that I sort of agreed to be the Lead Commissioner on this IEPR was to dovetail, really, some of the themes that are going on with energy efficiency.

In particular, the Assembly Bill 758 Action Plan on our existing buildings and build those into the discussion on the IEPR.

And I think the Efficiency Division staff, a few representatives are here, and the IEPR team have really worked very closely, sort of uncommonly closely together on framing those discussions and the workshops that had to do with the various themes in the Action Plan, putting those together and making them really a great success. So, thanks to the Efficiency Division, as well.

So, I think we have some -- and, in fact, one of the fruits of that process was we were able to finalize

the Action Plan and adopt it in September, at the Business Meeting. That was, I think, a byproduct of the fact that we were able to marshal some of the resources of the IEPR process to make that happen and feed that process. So, I really -- I think it worked out and the timing was actually quite good for the legislative session. And just, for a lot of reasons, very happy to have that ball pushed forward.

The third big theme I think is the drought. There's a chapter on the drought in the document. Heather will mention that. Obviously, a lot of energy/water overlap, certainly on the demand side, pumping and heating. But also on the power plan side and, you know, sufficient water for power plant cooling in the post-once through era is very important.

And then, finally, you know, a number of themes. I want to touch all of them, but the forecast is something that we must do. And it is undergoing, I think it's entering a period of rapid evolution. Certainly, the legislative session this year increased the urgency of that evolution, increased our responsibilities somewhat in the forecast, and then what it sort of will be expected to do.

I think that is terrific development. It puts some pressure on us to move it forward faster. But in

some ways I think the times demand that. And so, I think that discussion to help us do that would be much appreciated, your comments for sure. And, you know, I think our job is to build the resources and build the sort of team and approach that are going to make that as successful as possible, and feed all the other policy processes at the other agencies, the ISO and the PUC.

So, there are many important themes in this IEPR, really. I mean, you know, it's once every two years. There's an update in the intervening year. I think we need to make sure that we see that continuity across IEPR cycles because we really do need to march forward in lock step with all of you stakeholders, and taking into account new developments, and technology, environment, and learning from policies in other places and in our own initiatives here.

So, I wanted to put a little context around this IEPR. It's very, I think -- we've got a long-term vision and this fits firmly within that vision. And I want to just thank everybody who's involved. And a lot of people in this room sweat, put a lot of blood, sweat and tears into the draft and will continue through the final.

So, all of your comments are very much appreciated. And with that, I'll pass off to Chair

Weisenmiller. Thanks for joining us.

CHAIR WEISENMILLER: Yeah, thanks. I think this is sort of a follow up, in a way, or a continuation of an IEPR effort we both did two years ago, that you led.

And again, I think, obviously, climate change is sort of the unifying theme for this report, as much as energy policy at this stage.

And, you know, as we've gone through this effort this year, we sort of started out with the E3 Pathway study in some respects foreshadowed part of what we were going to do. And then, with the legislation, you know, again, it sort of reinforced the directions we're heading on this.

I think in terms of -- I'm not going to -- you know, you've covered pretty much the pieces so, again, I'm not going to repeat that as much as sort of fill in some of the gaps.

I think, certainly with the IEPR, it's a good vehicle for sort of non-adjudicatory, more legislative style of review of energy policy issues. It occurs every year, although there's a major effort like this year, and more minor efforts in sort of alternate years. And so it's not designed, or at least at this point we've evolved to it's not designed to be comprehensive, as much as having a specific focus.

And as Commissioner McAllister indicated, the real focus here is on energy efficiency this time. Certainly, there were some continuation activities. There's some work on gas.

I think as we go through this it, in many respects, does take a village to really pull together the pieces. You know, and certainly there's been a lot of work by both the core staff on this and throughout the building, you know, on the various pieces.

Also, a lot of work with the other agencies. Certainly, we've had very strong participation by the PUC, the ISO, the ARB, the Water Board, Department of Food and Ag. I mean, it's been we've had various participants on the dais with us on many of these issues.

COMMISSIONER MC ALLISTER: The BLM.

CHAIR WEISENMILLER: The BLM, yeah. I mean, again, it's pretty broad, you know, sort of subsets of that interagency engagement.

And, certainly, lots of stakeholder participation. And I want to really thank the stakeholders for their participation on this. Again, it's been a good activity to really get for us to listen, get a lot of input, and regarding try to then synthesize it.

Obviously, the draft is now ready for more comments on it as we get closer or do more fine tuning. And, you know, ultimately, again, I think we're sort of in a good place for additional comment, and we'll listen and then we'll go forward on the next step.

So, again, thanks for your participation up until now and for being here today.

MS. RAITT: Okay. So, I'll just give a high level overview of the 2015 Draft Integrated IEPR -- Integrated Energy Policy Report, sorry.

The Energy Commission's required to prepare an IEPR every two years that assesses energy supply and demand, production, delivery and distribution, market trends and major challenges.

The Energy Commission uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the State's economy and protect public health and safety.

Further information on the process about developing the report, the IEPR Lead Commissioner, Andrew McAllister, issued a scoping order on February 27th, 2015 to identify the report topics.

The Energy Commission held 26 public workshops and webinars on topics in the scoping order. And the

information gleaned from the workshops have been instrumental in developing the draft IEPR.

As the Commissioners mentioned, the report highlights efforts needed to meet Governor Brown's Executive Order, B-30-15, establishing new statewide goals to reduce greenhouse gas emissions 40 percent below 1990 levels by 2030.

In his 2015 Inaugural Address, the Governor put forward the following three goals to help reduce greenhouse gas emissions form the energy sector; double the efficiency savings achieved on existing buildings and make heating fuels cleaner; increase from one-third to 50 percent California's electricity derived from renewable resources; and reduce today's petroleum use in cars and trucks by up to 50 percent.

The Clean Energy and Pollution Reduction Act of 2015, Senate Bill 350, by Senator DeLeon, subsequently codified doubling energy efficiency savings by 2030 and increasing renewable electricity procurement to 50 percent by 2030.

The 2015 IEPR focuses on energy efficiency to help make the State's climate, clean air and energy goals, topics are listed here on this slide. They include de-carbonizing the energy system, developing fuel forecasts, and addressing key topics facing

California's energy system.

I'll just go over some of the highlights from the report on each.

This graph shows the greenhouse gas emission by sector of the economy, including electricity sector emissions broken down by end use.

California's transportation sector is the largest source of greenhouse gas emissions, accounting for about 38 percent of the State's greenhouse gas emissions.

Emissions from the industrial sector are about 27 percent and includes emissions associated with oil refineries.

By comparison, electricity generation accounts for about 20 percent of the State's greenhouse gas emissions, although it's not shown here as a discrete category. Close to half of those emissions are from out-of-state power consumed in California.

The residential and commercial sectors account for about 27 percent of emissions. This includes both fossil fuel consumed on site, such as natural gas or propane for heating, and the emissions associated with the electricity consumed in existing buildings. For example, for lighting, appliances and cooling.

Looking at California's share of commercial and

residential buildings account for nearly 70 percent of electricity consumption and 55 percent of its natural gas consumption.

Most existing buildings have cost-effective opportunities for improving their energy performance. About half the existing buildings were built before the State's building design and construction standards included any energy efficiency requirements.

So, a focus on the existing building stock, with its large potential to reduce current levels of energy usage is needed.

Assembly Bill 758, by Assembly Member Skinner, recognized the need for California to address climate change through reduced energy consumption in existing buildings. It directed the Energy Commission to develop a plan to achieve cost-effective energy savings in California's existing residential and nonresidential buildings, and report on implementation in the IEPR.

The Energy Commission adopted the final existing Buildings Energy Efficiency Action Plan in September of 2015. And one of the strategies of the plan is to enhance government leadership in energy and water efficiency, such as leading by example to improve the efficiency of public buildings, developing a new statewide benching and disclosure program, encouraging

government innovations and supporting the state and federal develop of new Plug Efficiency Standards.

Another strategy is to provide building owners and their agents easy access to the building energy-use data that are needed for improved decision making.

Advance high quality building upgrades and increased financing options is another strategy. Efforts must activate efficiency markets to truly compete with other energy supplies.

The action -- excuse me, the Action Plan provides a ten-year framework to help achieve greenhouse gas reduction goals, and help consumers save money and enjoy more comfortable homes through energy efficiency.

Another important mechanism for advancing energy efficiency as the lowest cost energy use source option is through utility programs. The CPUC oversees the energy efficiency programs of the Investor-Owned Utilities, while the Publicly-Owned Utilities regulate their own energy efficiency programs.

SB 350 will expand the types of efficiency programs available, while also tying incentive payments to measurable efficiency results.

Energy efficiency upgrades in California schools are being realized as a result of funding available from the Clean Energy Job Act, or Proposition 39. The Act

funds eligible energy measures, such as energy efficiency upgrades and clean energy generation at schools. The Energy Commission is primarily responsible for administering Proposition 39 for Kindergarten through 12th-grade schools.

For newly constructed low-rise homes, the State is steadily moving toward implementing zero-net energy buildings for 2020, in which energy efficiency is part of an integrated solution.

Outstanding issues remain, however, including identification of compliance pathways and on-site renewable generation is not feasible, and the appropriate role of natural gas.

To meet California's energy needs, the State is increasingly working to de-carbonize the electricity sector. As I noted previously, SB 350 codified the Governor's goal for California to serve half its electricity from renewable resources by 2030.

A challenge to achieving the 50-percent renewable goal is integrating intermittent renewables into the grid and addressing over-generation that occurs at specific times of day when generation exceeds demand.

This can be addressed through an integrated portfolio that includes increased energy efficiency, demand response, time-of-use rates, storage, a greater

diversity of renewable resources and transportation electrification.

Also, a key solution to integrating increased renewables is through a more regional grid. A step toward this is the real-time imbalance market, energy imbalance market or EIM, established by the California Independent System Operator to balance supply and demand in real time.

Scheduling the near goals in smaller time integrals can reduce the amount of reserves needed and allows for more up to date forecasting of resource needs and availability. This map shows the entities that have joined or plan to join the EIM.

Further, SB 350 paves the way for voluntary transformation of the California Independent System Operator into a regional organization. A report released the day after the draft IEPR was posted showed that combining the grids of PacifiCorp and the California ISO could reduce energy costs by billions of dollars and help states meet their environmental goals.

It's likely to reduce greenhouse gas emissions through coordinated planning and reduce curtailment of renewable generation.

As the grid becomes increasingly regional, strategic transmission investments are needed to link

our extensive renewable resources to load centers. Transmission planning processes will need to be streamlined and coordinated to ensure the siting, permitting and construction of the most appropriate transmission projects takes proper consideration of renewable energy potential, land use and environmental factors.

Lessons from the Renewable Energy Transmission Initiative, the Desert Renewable Energy Conservation Plan, local planning efforts, other planning renewable processes and scientific studies have brought important insights to the environmental and operational implications of the evolving regional electricity system.

The Energy Commission, the California Public Utilities Commission and the California ISO have initiated the RETI 2.0. This process will consider the relative potential of various renewable energy resources and to explore the associated transmission infrastructure with an open and transparent stakeholder process.

Developing a ten-year forecast of electricity consumption and peak electricity demand is a fundamental part of statewide electricity infrastructure planning. The Energy Commission, the CPUC, and the California ISO

are continuing their commitment to consistently use a single forecast set in each of their planning process, as first implemented through the 2013 IEPR.

The 2015 preliminary forecast recognizes the importance of energy efficiency and includes estimated impacts from energy efficiency programs administered by the Investor- and Publicly-Owned Utilities.

The 2015 preliminary forecast also incorporates anticipated changes in demand due to climate change, photovoltaic self-generation, electric vehicles and other factors.

The 2015 preliminary forecast results show slightly lower growth for electricity consumption compared to the forecast from the 2014 IEPR update.

The final forecast will be presented at a workshop in early December and will be included in the final IEPR. It will include projected additional achievable energy efficiency savings for both Investor- and Publicly-Owned Utilities to develop a managed forecast for planning purposes.

The Energy Commission also assesses natural gas demand, supply, price and infrastructure needs as part of resource planning. These assessments also have cross-cutting purposes. For example, the natural gas price is an important input into the State's Building

Energy Efficiency Standards to evaluate the cost effectiveness of proposed efficiency measures.

The revised natural gas outlook will be a topic of our workshop on November 3rd.

Natural gas may provide a lower carbon fuel source when compared to other fossil fuels used for electricity generation or transportation. However, recent studies indicate that methane leakage could reduce the climate benefits of switching to natural gas. Many research efforts are aimed at better understanding the leakage rates and these tradeoffs.

Consistent with the requirements of Assembly Bill 1257, this IEPR includes highlights from the report on Strategies to Maximize the Benefits Obtained From Natural Gas as an Energy Source.

The report covers pipeline safety, natural gas for electric generation, combined heat and power, natural gas as a transportation fuel, and use efficiency, low-emission biomethane, and greenhouse gas emissions associated with the natural gas system.

Turning next to transportation, the transportation sector has a key role to play in addressing climate change as it accounts for about 38 percent of the State's greenhouse gas emissions.

The Governor has released several executive

orders easing the transition to a low carbon transportation future.

Further, a suite of policies and programs are in place to support the Governor's goal of a 50-percent petroleum reduction by 2030, including Zero Emission Vehicle Mandate, the Low Carbon Fuel Standard, the Cap and Trade Program, and the Energy Commission's Alternative and Renewable Fuel and Vehicle Technology Program.

As part of the Energy Commission's energy planning efforts, the draft IEPR includes preliminary transportation energy demand forecasts through 2026. The transportation demand forecast relies on several of the same key economic and demographic inputs as the electricity and natural gas forecasts. These help determine the amount of travel and fleet size.

Other notable parts of the transportation forecast include vehicle populations by fuel type, gasoline, diesel, alternative fuel demand, the impact of high-speed rail on electricity consumption, and vehicle jet fuel demand.

We expect to release a revised forecast for the transportation sector in November, for a public workshop later in the month -- later in that month.

This IEPR also includes updates on nuclear

energy, electricity reliability in Southern California, and crude oil transported by rail. Beginning with nuclear, the decommission of San Onofre Nuclear Generating Station is underway. A key issue that has emerged since the permanent closure of San Onofre is the long-term safety and security of the spent nuclear fuel that will remain on site for an indeterminate amount of time.

Diablo Canyon Units 1 and 2 are operating under their original licenses, which are set to expire in 2024 and 2025, respectively. Several factors create uncertainty as to whether Diablo Canyon will continue to generate power in the long term. One important factor is the safety of the facility to withstand potential earthquakes, as well as tsunamis and flooding. The cost of compliance with the State Water Resource Control Board's once-through cooling policy is another issue, as is the management of spent fuel.

The Energy Commission will continue to monitor Federal Nuclear Waste Management Program activities and support Federal efforts to develop a long-term waste management solution.

While the impending retirement of several -- or with the pending retirement of several fossil-powered facilities that use once-through cooling and the closure

of San Onofre in Southern California, ensuring the region's electricity system reliability has been a major focus in the IEPR since 2011.

Some of the reactive power that was supplied by San Onofre has been replaced with transmission upgrades approved by the California ISO in its annual transmission planning process. This has reduced the amount of new generating capacity that needs to be located close to the load and, thus, increased the flexibility in locating additional resources.

Some local capacity is still required, however, due to the limitations of the existing transmission system.

An interagency team, with members from the Energy Commission, CPUC, California ISO and the Air Resources Board closely follow the development of preferred resources, conventional generation capacity additions and transmission upgrades that are needed to ensure reliability in the area.

Because resources margins are tight, the group is developing contingency plans in case development does not continue as planned. Close attention to local reliability issues will continue.

Due largely to advances in drilling techniques, in April 2015 U.S. oil production reached the highest

level since April 1971. As outlined in the 2014 IEPR Update, this large increase in crude oil production surpassed the amount -- excuse me, surpassed the ability of the existing crude oil pipeline and distribution infrastructure to keep pace. Thus, transport of oil by rail rapidly increased in 2014.

Over the last 18 months, however, additional pipeline capacity has come on line and oil transport declined. Whether the crude-by-rail imports to California will rise over the next few years depends on the number of receiving facilities that are ultimately approved and built within the State.

There have been several safety-related regulation updates since the 2014 IEPR update. Most notably, regulations finalized in May 2015 by the Pipeline and Hazardous Materials Safety Administration placed slower speed restrictions on trains transporting oil or ethanol. Also, such rail cars are now subject to more stringent construction standards.

The rapidly changing trends in crude oil sources and transport highlight the need for additional data at the State level to follow extraction, transportation and distribution trends and determining resulting implications.

The draft IEPR also focuses on the impacts of

California's drought and the connection between water and energy. California has a relatively modern fleet of thermal power plants and the fast majority of those built since 2004 use dry cooling or recycled water.

Still, the drought impacts California's hydroelectric production and raises questions about the reliability of water supplies for thermal power plants that do rely on water for cooling.

Consequently, staff identified the water supply of 100 thermal power plants to identify those at risk. The draft IEPR also includes details on the Energy Commission's activities in support of water conservation, such as the recently adopted Water Appliance Efficiency Standards, as well as highlights and key lessons from the multi-agency workshop on California's Drought, held here at the Energy Commission on August 28th.

Finally, climate change research specific to California's energy sector is critical to supporting our mid- and long-term climate and energy goals. The Energy Commission continues to be a leading in conducting cutting edge research.

Impacts to California's energy system from climate change include increased risk from extreme weather events, including flooding and drought,

increased wildfires, changes in hydropower resources and sea level rise.

The types and severity of impacts vary across the electricity, natural gas, and petroleum sectors and vary geographically. For example, research shows risks to the natural gas infrastructure in areas impacted by subsidence caused by groundwater overdraft.

Areas for future research specific to the energy system include the development of improved climate and sea level rise scenarios, improve methods to estimate greenhouse gas emissions, development of advanced methods to simultaneous consider mitigation adaptation and detailed local and regional studies.

Additional research is needed to help make California more resilient to climate change and to reduce greenhouse gas emissions.

So, that concludes my presentation on the report. And as we discussed, written comments are welcome and due on November 10th.

And, ultimately, we plan to put out a revised or a final draft IEPR at the end of January, for possible adoption in February.

And with that, I'll turn it over to Commissioner McAllister.

COMMISSIONER MC ALLISTER: So, right now I only

have one blue card. I see another one's coming up, it looks like.

I want to welcome Commissioner Douglas to the dais. I wonder if you have any comments?

COMMISSIONER DOUGLAS: Thank you. I'll skip opening comments at this point.

COMMISSIONER MC ALLISTER: Okay, okay. Okay, for sure.

Oh, a few more, actually. Here we go. Okay, great. So, we'll go to some blue cards.

Is there anybody on the phone, just as an FYI? Or, on the WebEx? There are. Okay, great.

So, Commissioner Douglas, feel free to chime in on any -- it's been really -- actually, I have to just say it's been really great to have across-the-board participation in the IEPR from all the Commissioners.

And as Chair Weisenmiller said, leads on various issues from the other agencies, State and Federal. So, it's been really quite a robust set of workshops.

So, first blue card Mark Krausse, PG&E.

MR. KRAUSSE: Good morning, Commissioners, Mark Krausse on behalf of Pacific Gas & Electric Company. I'm sure I'll be -- I'm glad to be the first to commend you on the good work of you and your staff. And appreciate and remember from some nine years ago, when

Mr. Geesman was sitting up on the panel. You've got a new conference room to me, and I have new glasses, so I'm going to try not to read these comments.

But very impressed with the work that staff has done on the draft IEPR. And wanted to be here to say we support many of the recommendations.

PG&E supported, as you know, SB 350 and support the goals for RPS, for energy efficiency. Glad to see AB 802 signed.

And so, touching on some of the things that we see in the report that we really do support, as I say, renewables goals in the transportation area, electrification and natural gas where that fits for transportation uses.

We are also very glad to see the emphasis on drought and adaptation. PG&E does a great amount of work on adaptation, in particular, about making sure that our infrastructure is in place and withstands sea level rise and other factors that we're going to be looking at.

The one issue that I do want to raise to your attention is a tone, perhaps, in the section on nuclear, where the Cal-ISO is quoted as saying that Diablo Canyon could be done without provided the Governor's renewable -- pardon me, the PUC's Renewable Portfolio

Plan goes as planned.

I think any resource on the grid could be done without. And that is the purpose of Cal-ISO's planning and of each of the utilities' resource planning.

One thing that I think Cal-ISO had contacted staff to correct is that they will not be doing the look at vulnerability and, in particular, modeling Diablo out this year. I think that was done in the past but that's not -- doesn't happen to be something that they're looking at in this round.

And then also in that context, the E3 Pathway study was cited as saying, you know, you could do without Diablo Canyon and still realize the GHG goals that the Governor has.

Again, I think you could do without any of the resources and you have to double down in other areas.

What the report doesn't cite and unless -- you know, we would suggest that language either needs to be removed, softened, put in context, but if it remains as it is, I would urge the Commission to also cite E3's assumption that 16,000 megawatt hours of natural gas-fired generation come into replace Diablo Canyon beginning in 2025.

To put this in context, we're looking at between six and seven million metric tons, just under half of

the LCFS program measure. I mean, we're talking about a huge amount of carbon.

So, it certainly could be replaced with renewables, but at a time when we're trying to get the 50-percent goal in the first place, I think that would be a challenge that's unnecessary.

So, keeping that baseload, zero GHG resource I think would be key.

And that's it. Again, we support the report overall. Those were just some places where I think more of the story needs to be told with regard to the GHG impact. Thank you.

COMMISSIONER MC ALLISTER: Thanks for your comments, appreciate your being here.

Christopher, let's see, Ellison, from Duke American Transmission.

MR. ELLISON: Good morning, Commissioners, Christopher Ellison, Ellison, Schneider and Harris, for Duke American Transmission Company.

I want to join -- DATC wants to join PG&E in commending the Commission and the staff for an exemplary draft IEPR. And across many of the topics that you have identified already this morning, DATC strongly supports this draft.

And in particular, it strongly supports the

draft with respect to transmission. Now, transmission was not a central focus of this report. But it is, as this report acknowledges, a key element in achieving many of the things that are a central focus and, in particular, the Governor's climate change goals.

The policies that are articulated in this report I think accurately reflect a fairly broad consensus among not just DATC's extensive comments, but the comments of NRDC, Southern California Edison, and a variety of other stakeholders who have recognized the need for many of the proposals put forward in this report. And I think the report will, therefore, be received with considerable enthusiasm. Perhaps not by everyone, but by most people, and certainly by DATC. So, thank you for all of those efforts.

The question now becomes are these policies going to be implemented? And the Commission is moving forward with RETI 2.0, which DATC is participating in and fully intends to support.

The Governor's Office is moving forward with the San Joaquin Valley Solar Convening, which DATC is participating in and fully supports. And these are -- these, among other forums, are places where these policies can be implemented. And, certainly, they can be implemented at the ISO, and in the Commission, and

the State's transmission planning process overall.

Of particular concern to DATC, however, is whether these policies can be implemented in time to address the poster child of right-sizing in California, which is the San Luis Transmission Project. And as you know from the comments that we've already submitted, the San Luis Transmission Project is a Federal Government transmission project, a 62-mile project from Tracy to Los Banos. It consumes the last available transmission corridor space in the existing corridor.

And the Federal Government only needs a 230-megawatt project -- I'm sorry, kilowatt project. DATC and others have proposed that it be right-sized to 500 kB. The window of the Federal Government for making that decision is next May.

And so, whether the policies that have been articulated in your draft, which we think are the right policies and we think if applied to the San Luis Transmission Project would support it, may not be implemented in time for the real-world decision that confronts the State with respect to probably the leading right-sizing issue before you.

So, we are hopeful that you will work with the other agencies to avert that result and we stand ready to help you do that. Thank you very much.

COMMISSIONER MC ALLISTER: Thanks for your comments and appreciate your being here.

John Geesman, Alliance for Nuclear Responsibility.

MR. GEESMAN: Thank you, Commissioner McAllister. And let me, too, congratulate you on what I would have to say is a more polished work product than I'm accustomed to seeing at the draft stage.

I wanted to respond, briefly, to Mark's comments. I actually thought you set a pretty good context for the role Diablo Canyon plays, both in the State's electricity reliability and the State's evolving climate change policies.

And I would suggest if you're inclined to dig a little bit deeper, as he recommended, that you turn to some of the ISO staff presentations in their August workshops in developing a flexible capacity product. One of the striking slides the ISO staff has used said, you know, we were previously looking for more flexible capacity. But, perhaps, the paradigm needs to be changed. We've got too much inflexible capacity to properly address California's future needs as more and more intermittent supplies come on to the system.

Let me address SONGS, briefly, before turning to Diablo Canyon. One thing the report says is that Edison

plans to complete decommissioning in 20 years. I think that's focused on a subset of decommission. The decommissioning will not be complete until all of the spent nuclear fuel is removed from the site. And it's important to keep that foremost in mind. For 40 years this Commission has been at the heart of the spent fuel policy debate in this country. And it doesn't look as if that debate is getting any easier.

San Onofre, for better or for worse, is a primary focus of it. Edison currently plans to have fuel removed by 2049, decommissioning completed in 2051. But that is in direct contradiction to the assumptions used in the NRC's generic environmental statement, which your report references.

The NRC evaluated a short-term, 60-year storage period, a medium-term, 160-year period, and a long-term to infinity and beyond. And I think that it's important to recognize from a legal stand point the decommissioning trust has an obligation to fund spent fuel storage until it is taken off site and your report ought to focus on that.

A second item regarding San Onofre, the report indicates that California will demand that the site be restored to its original condition at the end of decommissioning. I think that is an important policy

and you need to reiterate that more forcefully.

Currently, Edison is attempting to avoid the subsurface removal requirements of debris that are contained in the Navy lease. It's important and I think the State made very clear that it wants no part of that. And the fundamental principle of taking your trash off the beach is one that you will adhere to.

Regarding Diablo Canyon, the concern that I would raise starts with spent fuel management. I want to congratulate you in the progress that you made in persuading Edison to remove spent fuel to dry casks as rapidly as practicable.

As you mention in the report, the Public Utilities Commission imposed the same requirement on PG&E in its last general rate case. PG&E is supposed to come up with a plan that satisfactorily complies with your recommendation, dating back to 2008, to accomplish that transfer.

Your report mentions the PG&E testimony. If you go to the work papers behind the testimony for the detail of that plan, you will see what I believe is a raised middle finger toward that recommendation, in which PG&E says this is none of your jurisdictional business. PG&E operates under Federal requirements. The State has no role.

I think, because of the way in which the PUC has phrased the question of a satisfactory compliance, your report is going to have to address whether you consider PG&E's response satisfactory or not. And I would submit the four-to-one ratio that they reference -- or that the report references and attributes to PG&E is exactly the problem that precipitated your recommendation, in 2008, that they begin to accelerate that transfer.

And Chair Weisenmiller will remember, it was actually 2005 when you had workshops in this very room with Allison McFarland strongly recommending the importance of that rapid transfer.

Regarding seismicity, I think that you should acknowledge some of the difficulties that the Independent Peer Review Panel has had in gaining access to the PG&E studies. Most particularly, the omission of the deterministic analysis of joint ruptures at Diablo Canyon.

PG&E assigned an 8.0 magnitude earthquake to a joint rupture between the Hosgri and Shoreline faults, between the Hosgri and San Luis Bay faults, and between the Hosgri and San Luis -- or, excuse me, Los Osos faults. It indicated that that was not of much concern. And this is the first time PG&E has ever publicly acknowledged, because magnitudes above 6.5 don't really

create any additional ground motion.

Well, that may be true in the international data for long-distance earthquakes. But at Diablo Canyon the seismic risk is 2 kilometers away from the Shoreline fault, less than 5 kilometers away from the Hosgri fault, about 2 kilometers away from the San Luis Bay fault, and slightly under 10 kilometers for the Los Osos fault.

The data sets that support a magnitude saturation phenomenon arguably do not apply to short-distance, large magnitude earthquakes because there simply is no data on that.

And I think your report ought to touch upon whether or not you agree with the underlying assumption and also what you think of the fact that those deterministic analyses were not included.

Another thing that was not included in the report, that you've been asking for since 2008, is an analysis of a blind thrust rupture, ala San Simeon, directly beneath the Diablo Canyon plant.

PG&E came back, in its report, and said, well, we've done that analysis on a probabilistic basis below the Irish Hills. You said, in 2008, that wasn't sufficient. You wanted a deterministic analysis directly below the plant.

I think it's important that you insist that the seismic studies that the ratepayers have actually committed $64 million to, be properly completed and properly reviewed by the Independent Peer Review Panel.

I recognize the delicacy of criticizing one of the principle allies of the Governor's climate crusade. But history will show that the most productive alliances come from those where the parties, in a mature way, are able to be candid with each other.

And I would strongly suggest that you apply some of that candor to PG&E with regard to Diablo Canyon. Thank you very much.

COMMISSIONER MC ALLISTER: Thank you, Mr. Geesman. And, you know, I'm going to obviously encourage you and all of you to submit written comments. You know, with Commissioner Geesman sometimes I feel like that's just sort of a transcript, you could just take it and submit it because it's very well constructed almost always. Really, always, without fault.

So, I appreciate your being here and your substantive comments and certainly look forward to the written.

Ben Davis from the California Nuclear Initiative.

MR. DAVIS: Commissioners, thank you very much

for this opportunity to participate in these proceedings. I'm Ben Davis, Jr.

I attended the meeting of the Independent Peer Review Panel before the Public Utility Commission several months ago. And the issue that I brought up concerned not the Independent Peer Review Panel's oversight of the seismic studies that are going on but, instead, the fact that nobody is overlooking a claim that PG&E made that has undermined, largely, these seismic studies.

PG&E has claimed that the nuclear plant, itself, can handle the .8 G's that it has admitted the plant could be subjected to, which is also controversial because the Independent Peer Review Panel has said, .8 G's, they have not convinced us that that is the limit to what it could be subjected to.

But they said, also, that the plant could handle up to 35 percent ground shaking than .8 G's. They could handle up to 1.34 G's. They have insinuated, and if you look at their websites, they even make it clear that this claim is part of the SSHAC process and has been independently peer reviewed. In fact, that's not the case. They've misled the public in suggesting that this study was peer reviewed or part of the SSHAC process. It is not.

I had to ask the Independent Peer Review Panel for information on this to find out that, in fact, it was not part of the SSHAC process at all. And this claim is apparently based on a study from 1991, only, and there's not been any updates on it at all.

When I found out that this had been claimed I said, well, how, what has caused this rise in the claim of ground shaking response of the plant. It's been said for many years that the plant could handle .75 G, and that's what the NRC has told me.

What all of a sudden raised it to 1.35 G? And I asked, has the plant been retrofitted? Are there new models? What is the basis of this claim?

Well, it appears and I can't get straight answers thus far from PG&E or the NRC on this, it appears that it's all based on a 1991 study, which is potentially based on the 1988 study from which the first claim was made that .75 G's is what the plant can handle.

What I brought up at the Independent Peer Review Panel meeting, at the Public Utility Commission, was that this also needs to be independently peer reviewed. In fact, the legislation that brought about the Independent Peer Review Panel appears to say that, itself. It's not asking them just to independently peer

review the ground shaking or the earthquake potentials at Diablo Canyon, it also clearly anticipates the plant response. But not -- it doesn't state it so clearly that the Independent Peer Review Panel thought that was part of their jurisdiction. In fact, they don't even have the expertise, according to Chris Will, to do that.

So, I would suggest that as part of this IEPR one of your recommendations is that this oversight be rectified. In fact, independently peer reviewing the ground shaking, without independently peer reviewing the plant response, basically, PG&E has found an end-run around that that has made the plant response completely the crux of the matter. So, I'd like to see the IEPR have that recommendation in it.

I asked PG&E, because of the controversy about the .8 G's that they say the ground shaking could be caused at Diablo Canyon, and the fact that the Independent Peer Review Panel has not been convinced of that, what if the world model was used instead of the ground shaking, the SSHAC process has shown?

And they told me that 1 G is ground shaking that would be normally at a plant if the world model is used. I think that should also be included in your report because that is about twice the ground shaking that Fukushima experienced. And I think that's an important

fact to get before the public.

The third thing I'd like to see included, that wasn't included, I believe Mr. Geesman referred to this also, is that in Michael Picker's letter he raises the question of whether or not Diablo Canyon could over-generate and cause problems in competing with other forms of electricity.

You never really fleshed that out in the report. I asked your staff some questions about it and they explained it to me more clearly. I think that their response to my questions should also be included in this report.

Thank you very much for your time.

COMMISSIONER MC ALLISTER: Thanks for being here. And, again, look forward to your written comments.

I guess, given the fact that the last couple of speakers have had significantly more than three minutes, maybe if Mr. Krausse, or if you want to have any more time on the podium or just we can all rely on written comments from here on out. Okay, great.

I think that's it for blue cards, unless there's another one that has not been submitted. And if not -- okay, there's one more commenter in the room. Please, do come up and give us your contact info.

MR. KENNY: Hi, good morning. My name is Ryan Kenny with Clean Energy. We're the nation's largest provider of natural gas, renewable gas transportation fuel.

Just wanted to add a note for the record and we'll add these for our working comments, as well, about the transportation section. That we don't feel that you can reach any of the greenhouse gas reduction goals or even the 50 percent reduction in petroleum goals without the use of natural gas or renewable natural gas.

And as you may have heard, CARB recently, just a few weeks ago did certify a .02 NOx, actually, a .01 NOx engine that we believe is a game changer here, in California. And it will not just reduce greenhouse gas emissions, but it will also go towards reducing NOx, short-lived climate pollutants, regional -- and go towards regional attainment standards and other goals.

So, we'd love to have that be part of the record and part of the conversation going forward. And thank you for your time.

COMMISSIONER MC ALLISTER: Thanks for being here.

Okay, with that I guess we'll move on to the WebEx and phone.

MS. RAITT: So, we have one person on WebEx,

Carla Viswanathan. I'm not sure how to pronounce that, sorry.

MS. VISWANATHAN: Hello. Yes, this is Carla Viswanathan, representing the Natural Resources Defense Council, NRDC.

NRDC commends the Commission for drafting a well-written, thorough and comprehensive IEPR report. We plan to submit formal comments on the demand forecast, energy efficiency and transmission, among other items.

In particular, we look forward to working with the Commission and the Demand Analysis Working Group to ensure that estimates of doubling energy efficiency match the intent of SB 350.

Thank you for the opportunity to comment and we look forward to submitting our written comments. Thank you.

COMMISSIONER MC ALLISTER: Great. Thanks for listening and commenting, and looking forward to your written comments as well.

Anyone else?

MS. RAITT: I think that's it. We can try opening up the phone lines. There's a lot of people on the phone lines, so if we want to make comments, we can try to do that. If you're not making comments, please

mute your line.

MR. UHLER: Steve Uhler would like to make a comment.

MS. RAITT: Okay, hold on one moment, please. Go ahead, Steve, thank you.

MR. UHLER: Yeah, hello, I'm Steve Uhler. I'm a California citizen. My first comment would be related to the 286 missing docket files that I haven't gotten word back on, in order for me to properly comment on the IEPR.

Other items would be Chairman Weisenmiller spoke before the Senate Utility Committee on Energy Efficiency about families of models that you've been using since the 70s, and datasets that might go with those models.

I'm trying to find anything that would even indicate that those exist.

QFER database is supposedly one of your more accurate lists of generating plants and units. I'm still waiting to find out about 101 units that are -- don't say they're retired, but they haven't had any output data put in for a number of years.

Those are the basic things that I'm after in order to get this done. I'm wondering, you know, is it going to be possible to find out the status of those 286 documents? Because I want to reference some of them.

I've actually downloaded some of them, but now I can't reference them because your system returns an oddly-shaped, 404 file not found return. So, I'd like to have that cleared up.

Other items would be I'm interested in some support on how to get my utility to join the imbalance market. They seem to think that they can tell me that they will fulfill my energy usage at 100 percent with renewables, yet they don't wheel their renewables onto their distribution grid.

And in Sacramento we kind of consider a self-farm to fork. Well, that's a little bit like me ordering an organic meal and somebody else eating it while they give me fast food.

So, something needs to be done about this notion that you can say that you have these renewables. Some of them, a fair, a significant portion of the wavelength of the power system away, like New Mexico, yet they only wheel it to the California border.

So, I'm looking for anybody who can help me with that situation and in figuring any of this stuff out.

Another area that is under-represented is real-time monitoring. I am looking right now, and I'm looking at 60 watts is all my house is drawing. And, actually, I have a needle out here and it tells me that

that energy was matter about eight minutes ago, 93 million miles away.

And I've found it very handy for me to make all the decisions I need to do to take my 100-year home, old home and bring it well within the 2050 goal. As well as a 35-year-old home that's all-electric to be powered by nuclear has done the same.

And those were both done with real-time monitoring, which does not exist. My utility is SMUD and the device that they seem to claim that will do that is no longer sold. Probably because of the battery charging standard. The device doesn't even meet their spec.

My device has an audible alert. Every time I cross a kilowatt in demand it beeps at me. Very handy.

So, I need -- you guys need to do more to see that there are standards for the renewable -- or the real-time monitoring devices that should be part of the advanced metering infrastructure.

The rest of this I'll hand off in the comments. And, particularly, Weisenmiller's comment about the family of models and the data that supports that. Thank you.

COMMISSIONER MC ALLISTER: Thanks for your comments. I want to just alert the Public Adviser and

invite you to contact the Public Adviser. Or, hopefully, you can give us your contact information and connect with them and they can, hopefully, facilitate the receipt of the data that you're looking for from the docket.

And thanks for your other comments, good stuff. It sounds like you may have a community organizing task on your hands to get SMUD to join the ISO or something like that. You know, it takes a village sometimes. But thanks for listening in and your engagement.

MR. UHLER: Am I still on the line?

COMMISSIONER MC ALLISTER: You are.

MR. UHLER: Okay.

COMMISSIONER MC ALLISTER: You've used up your three minutes but, yeah.

MR. UHLER: I have contacted the Public Adviser. I have contacted all of the routes on your website to get these missing documents cleared up. So, I've already done that. And I am actively trying to get SMUD to join the Cal-ISO, like the Legislature says. So, I've already done those things.

COMMISSIONER MC ALLISTER: Okay. Well, great, I guess --

MR. UHLER: Now, I'm looking for you folks to do your part. Thank you.

COMMISSIONER MC ALLISTER: Well, the Public Adviser is the route that we need to do that. If the Public Adviser's Office needs to connect more robustly or actively with staff, then I think that's the next step it sounds like.

MR. UHLER: Okay, see that it's done. See that it's done because I have done my part. Thank you.

COMMISSIONER MC ALLISTER: Great. Thanks for your call.

Anybody else on the phone?

MR. NESBITT: Yes, I have comments.

MS. RAITT: Go ahead.

MR. NESBITT: Yeah, George Nesbitt, HERS Rater. The 50-percent renewable goal is a little bit more than a 50-percent increase above the current 30-percent goal.

The reduction in petroleum use for transportation is a 50-percent reduction in petroleum use.

Everything I've read in the media and can find from the Governor's goal was that for energy efficiency it was also a 50-percent reduction in energy use. Not a 50-percent increase in our savings goal. And those two are very different things.

And considering buildings consume close to a third of our greenhouse gases, a 50-percent reduction is

more in line with where we need to be to get to large greenhouse gas reductions.

I find the IEPR, honestly, quite lacking in a lot of ways. I don't think the IEPR acknowledges the role that the HERS Rater has played, has increasingly been asked to play, and will increasingly be asked to play in energy efficiency, in the building code, the energy code, the REACH code, and in utility rebate programs.

We have provided -- we bring a lot of credibility to claims of energy efficiency.

Also lacking is sort of the vision that the HERS Rater plays a role in the existing building and also Zero Net Energy. Nationally, over a million homes have been HERS rated. Builder after builder is committing to rating 100 percent of their homes. Cities, counties, states have required HERS rating for energy code compliance. The HERS rating system is being written into the 2015 IECC, the International Energy Conservation Code.

DOE builders challenge zero energy homes recognizes the HERS rating system, including California's HERS rating systems.

Energy Star homes, everywhere else in the country, requires a HERS rating. So on and so forth.

And yet, in California we adopted our HERS rating system in 2008. It's been in effect since 2009. It's been on the ground since 2010. And we have failed to require and encourage it in a single State program. Not New Solar Home Partnership, utility programs, Energy Upgrade California.

And why? We don't need to because we've allowed Build It Green to have Green Point rating, which is actually the HERS rating.

We have allowed Energy Upgrade California to use the HERS rating software without producing a score. We've allowed CAP to come up with a CAP score, which is really the HERS rating.

And the Energy Commission, in the 2013 Energy Code, as well in the 2016, has come up with a design rating as part of the Part 11 Cal Green REACH Code, which is really a HERS score.

So, we really need -- it's time we really recognize and implement. And waiting until 2018 to somehow change it and somehow, you know, then is just too late. It works, sure it needs some improvement. But it works today, it's been working for years. And we need to recognize that and have the vision.

Also, one last comment, just one thing that I find also lacking with the over-production of solar

electric during the day, in the grid, is the discussion of actually load shifting and starting to use energy when we have the resource, rather than relying on storage alone. Thank you.

COMMISSIONER MC ALLISTER: Thanks for your comments.

Anybody else on the phone? Is that it?

MS. RAITT: That's it.

COMMISSIONER MC ALLISTER: Okay, great. All right, well, I think we've kind of reached the end of the proceeding here.

Thanks everybody for coming. All of the multitude on the phone please do, if you have any inclination, submit your comments in written form through the docket. All that information is on the IEPR portion of our website.

Again, comments are due on November the 10th. That reflects a week extension from what was originally posted.

And we're looking forward to getting all of your best thinking on the various topics of interest.

So, I don't really have any additional comments. You know, I want to thank, again, IEPR staff. Stephanie, as well as Raquel and Heather, and the whole team across agencies. My staff. Charles Smith over

there, he's been really facilitating a lot of my input on the IEPR and doing a great job. Partially responsible for the polished nature of it that Commissioner Geesman mentioned.

So, I'll pass off for final comments to the Chair, if you have an inkling.

CHAIR WEISENMILLER: Yeah. Okay, I just would like to thank people for their participation today and encourage written comments later, and look forward to reading those. Thanks, again.

COMMISSIONER MC ALLISTER: Okay, and we are adjourned.

(Thereupon, the Workshop was adjourned at 11:10 a.m.)

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REPORTER'S CERTIFICATE

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

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IN WITNESS WHEREOF, I have hereunto set my hand this 28th day of October, 2015.

Kent Odell
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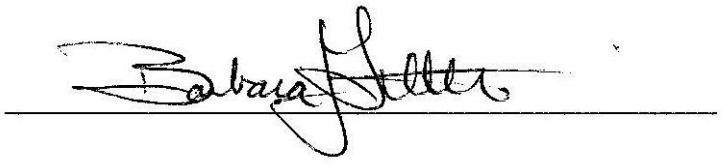

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