BEFORE THE
CALIFORNIA ENERGY COMMISSION (CEC)

In the matter of	)	
	)	Docket No. 13-IEP-1E
2013 Integrated Energy	)	
Policy Report (2013 IEPR)	)	

JOINT LEAD COMMISSIONER WORKSHOP ON CONSIDERATION OF ENVIRONMENTAL AND LAND-USE FACTORS IN RENEWABLE SCENARIOS AND DEVELOPMENT OF RENEWABLE ENERGY PROJECT DATABASE

California Energy Commission
Hearing Room A
1516 9th Street
Sacramento, California

Tuesday, May 7, 2013
9:30 A.M.

Reported by:
Peter Petty

APPEARANCES

COMMISSIONERS

Robert B. Weisenmiller, Chair, CEC
Andrew McAllister, Lead Commissioner IEPR
Karen Douglas, Lead Commissioner Siting
Janea Scott
Kelly Foley, Advisor to Commissioner Hochschild

STAFF

Suzanne Korosec
Misa Milliron
Roger Johnson
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Also Present (* present via telephone)

Presenters/Panelists

Robert Strauss, CPUC
Carlos Velasquez, CPUC
Bill Condon, CDF&W
Mike Sintetos, BLM, REAT Rep.
Paul McCarthy, LA County
*Byron Woertz, WECC
Carl Zichella, Rep of WECC's Environmental Data Task Force
Erica Brand, The Nature Conservancy
Renee L. Robin, SunPower Corp.

Public Comment

David Smith, Power Company of Wyoming
Rachel Gold, Large Scale Solar Association
Chris Ellison, Ellison Schneider & Harris Rep
Kate Kelly, Defenders of Wildlife

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P R O C E E D I N G S

MAY 7, 2013 9:38 A.M.

MS. KOROSEC: Good morning, everyone. I'm Suzanne Korosec. I manage the Energy Commission's Integrated Energy Policy Report Unit. Welcome to this morning's workshop on Consideration of Environmental and Land-Use Factors in Renewable Scenarios.

This workshop is a joint effort between the Lead Commissioners for the Integrated Energy Policy Report and for Siting.

A few quick housekeeping items before we begin. Restrooms are in the atrium out the double doors and to your left. Please be aware that the glass exit doors near the restrooms are for staff only and will trigger an alarm if you try to exit that way. There's a snack room on the second floor off the atrium, under the white awning for coffee and snacks. And if there's an emergency and we need to evacuate the building, please follow the staff out of the building to Roosevelt Park, which is kitty corner to the building, and wait there until we're told that it is okay to return.

Today's workshop is being broadcast through our WebEx Conferencing System and parties do need to be aware that you are being recorded. We'll make an audio recording available on our website in a few days and we'll

make a written transcript available in about two weeks.

Our workshop this morning is scheduled to end at 12:30 and we're going to have to be really strict about the end time since there's a second IEPR workshop that's starting at 1:30 this afternoon.

Misa will be giving an overview of the agenda in a few moments, but I do want to point out that, in addition to opportunities for questions after each presentation, we've also set aside 15 minutes at the end of the workshop for more general public comments. At that point, we'll take comments first from those of you here in the room, followed by those on WebEx, and then finally by those that are participating by the phone only. When you're making comments or asking questions, please come up to a microphone so that we make sure we capture your comments on the record and that the folks on WebEx can hear you. And it's also helpful if you can give our Court Reporter your business cards so we make sure we get your names spelled and that your affiliation is correct.

For WebEx participants, you can use the chat function to let our WebEx coordinator know that you have a question and we'll relay your question or open your line at the appropriate time. For phone-in only participants, we'll open all the phone lines after we've taken comments from the in-person and WebEx participants. And if you're

on the phone only, it's helpful if you can keep your line muted until you have a comment to make so that we don't get a blast of feedback when we open up all the phone lines.

We're also accepting written comments on today's topics until close of business May 21st. And the Notice for today's workshop, which is on the table in the foyer and also on our website, explains the process for submitting comments to the IEPR Docket.

The context for today's workshop is a 2012 IEPR update recommendation to address transmission and interconnection challenges as part of the State's Renewable Action Plan. The IEPR pointed out that environmental and land use factors may be underused in renewable resource scenarios and that they need to be incorporated fully into transmission and procurement planning processes. As a step toward achieving that goal, the plan recommended that the Energy Commission use its environmental and land use expertise to continue to develop renewable project databases for in and out-of-state projects, and to collect and maintain data through a transparent and public process with opportunities for a lot of stakeholder involvement.

One of the several action items under this recommendation includes holding an initial public

workshop, which we're doing today, in conjunction with preparation of the Energy Commission's Strategic Transmission Investment Plan that is part of each biannual IEPR. Based on the outcome of the workshop, then we'll decide on next steps.

The Renewable Action Plan also committed the CEC to holding an annual workshop under the direction of the Lead Commissioner for Renewables to highlight progress on the Renewable Action Plan's recommendations, including the recommendation that we're talking about today. And the first of those annual workshops will likely take place in early 2014.

So we do have a lot to get through before 12:30, so I'll turn now to the dais for opening comments.

COMMISSIONER MCALLISTER: Thank you, Suzanne. I'm Andrew McAllister, Lead on the IEPR this year for 2013. And I'm really pleased to be joined with three other Commissioners, primarily Commissioner Douglas who is the Lead on Siting, and Chair Weisenmiller to my right, obviously, and Commissioner Scott over there on the end, to my left.

I think this is really -- that's a representation, the fact that there are four Commissioners here, of how important this topic is, how relevant for the long term it is for where the state needs to go. I think

the transparency theme here is really top, should be top of mind for everybody, it helps us ensure that we have a process that we get buy-in on for the long term, and that is sustainable and really well grounded for the heavy lifting that is in process and will certainly come in the future.

Also, I would just highlight that the idea or the imperative to hold hands tightly with our sister agencies is really important here, as well. So, this resource that we're developing today and ongoing in this IEPR is part of the foundational work that the ISO and the CPUC will use going forward for their long term procurement planning and the transmission planning, and that's really a key aspect of all of this as well, so we're looking forward to working through these issues and I will turn it over to Commissioner Douglas, who is I think really in the middle of a lot of the issues we're going to talk about today, so looking forward to her contributions today, as well.

COMMISSIONER DOUGLAS: Well, thank you, Commissioner McAllister. I'd like to join you in welcoming everyone here, panelists and members of the public. It's a good turnout.

Obviously, we've been working for some number of years now, beginning with the RETI process and continuing on through work on the Desert Renewable Energy

Conservation Plan and a number of efforts to much more tightly coordinate between the Energy Commission, the Public Utilities Commission, and the Independent System Operator to move forward on thinking about planning for renewable energy and, in particular, the topic of today's workshop, planning for generation, trying to understand where generation is likely to occur and is likely to be most favorable from an environmental perspective, and then feeding that information into the transmission planning process so that we can adequately plan for and hopefully ensure that we're able to build the transmission that is needed to serve the areas that are most likely to contribute, and contribute most heavily, to meeting our renewable energy goals, not only the 33 percent RPS, but also the state's longer term climate goals. So I really see this topic as an important one for helping all of us work together to keep the state on track to meet the 33 percent RPS and meet our longer term climate goals and do the best job we can collectively to bring forward and site and permit and see through to construction the projects that are going to be needed to get us to this goal. So with that, I'd love to hear other comments from the dais and then get into the presentations.

COMMISSIONER MCALLISTER: I think Chair Weisenmiller might have some words.

CHAIRMAN WEISENMILLER: Again, I'd like to thank everyone for being here. I think over the last several years we've certainly found transmission to be both critical and challenging. Early on, I think the Governor certain set a goal to try to shorten the transmission planning and permitting process and, in fact, we've all been scratching our head trying to figure out ways to do that. I think this sort of planning is one way to try to do it, but again, bottom line, it's not easy. But this is certainly getting, you know, we know for the power plants location really matters, we're trying to really encourage development in certain areas, and then associated with that we have to have the transmission lines. So, again, looking forward to a good conversation today. Janea.

COMMISSIONER SCOTT: Good morning. I am Commissioner Scott and I am here at my very first IEPR Workshop, so I'm glad to dig in and listen and learn, and I echo the comments that you've heard this morning from my fellow Commissioners. And I also look forward to hearing from the staff and from our panelists today. So thank you.

MS. MILLIRON: Thank you. Good morning, everybody. My name is Misa Milliron and I work in the Siting, Transmission and Environmental Protection Division. I'm going to give an overview of the agenda

topics today and then later I'm going to help facilitate the panel discussion.

There are two main agenda segments today, the first is comprised of presentations and focuses on process and how environmental and land use data are used for scoring renewable energy projects at a planning level for PUC's use and ultimately the California ISO.

To that end, the CPUC will give a process overview of their Long Term Procurement Plan and Portfolios, and then the Energy Commission will give an overview of the Renewable Energy Project Database used in environmental scoring that is transmitted to the CPUC. And then we'll round that out with another presentation from the PUC where they'll give an overview of the RPS Calculator and show where the environmental data are considered there, and also give an update on their ongoing examination of environmental scoring methodologies.

The presentations will be about 15 minutes each, followed by five minutes for questions after each presenter is done with the presentation.

And then the second agenda segment consists of a roundtable discussion of environmental data used in the portfolios and related database questions which are in the attachment to the Agenda.

The focus of this workshop is long term and

process oriented, and the focus of environmental data at a planning, rather than a site-specific level. The goal today is to identify high level issues and process information for incorporation in Energy Commission's Strategic Transmission Investment Plan, which will be touched upon in the next workshop that is going to be held this afternoon. And as Suzanne mentioned, I'll be watching the clock pretty closely since we've got two IEPR workshops today, and I will go ahead and turn it over to our first presenter. Thank you.

MR. STRAUSS: Good morning, Commissioners, ladies and gentlemen. My name is Robert Strauss with the California Public Utilities Commission. I'm here to talk today about the Long Term Procurement Process. I'm going to cover the basic overview of what the Long Term Procurement Proceeding is and then give a little bit of background on the renewable scenarios that are used in the LTPP and the Environmental Scoring Data and Use.

The Long Term Procurement Process has evolved over the last 10 years. It was originally designed and still continues to be an oversight function for the AB 57 bundled procurement plans for the major utilities. It's based on Code Section 454.5. I won't talk a lot more about that today, but that's the original intent of it, it has evolved into one part of it being about reliability,

reliability needs, and that's where environmental scoring plays a larger part.

The components of the LTPP are the three tracks. The first two tracks are dealing with reliability, Track 1, and the tracks vary from each procurement process, each round of it is a little bit different, but for this round, the one that is currently in process, Track 1 dealt with the L.A. Basin & Big Creek/Ventura areas in Southern California, looked at local capacity needs. Most of this is based on the anticipated retirement of the 50 plus year old once-through cooling plants, came out with the decision at the end of last year.

The second track is dealing with planning and assumptions that are used in doing the analysis. The second track is the Mean Reliability System Planning Track, and so it looks at what the needs are over time, and the current largest focus of that track is flexibility, but to do any analysis you need to get agreement on assumptions. So we had a decision at the end of last year that laid out what the main assumptions were after a long stakeholder process.

The third track is the bundled procurement track which is currently underway and there's also a commitment by the Commission to look at SONGS and what the impacts of SONGS not coming back on line would be to the state's

electrical system.

This is just a little detail on the Local Area, on the Decision in February which authorized a significant amount of newer resources in the LA Basin, Ventura/Big Creek, the Commission weighed a lot of evidence on the reliability needs coming out of those and tried to focus on preferred resources as much as possible to meet those needs.

Also, the Commission in a separate Decision looked at the San Diego Local Area, and authorized new generation in that area. So the Commission is moving forward on meeting the reliability needs of the state.

Moving forward to Track 2, the System Track, it establishes the overall reliability needs of the system, as flexibility is the main focus right now. The scenarios and assumptions that were adopted in the December Decision are now being used in the modeling that's going on about flexibility. And the ISO is doing the majority of that modeling, and the modeling is being done by other parties also. And I've already mentioned the Bundled Track.

This is a PUC-centric graph of the interactions that go on in the LTPP process. And you can see from this graph that we interact with a lot of different state agencies, a lot of different state policies, in trying to direct the utilities procurement processes.

Timing. The LTPP is basically on a three-year cycle, the first year of it is the IEPR Demand Forecast that sets the basic forecast that we use in our planning processes. The second year, we adopt the scenarios and assumptions; beyond the IEPR forecasts, there's a whole list of different assumptions that need to be analyzed and we need to get stakeholder buy-in. We try to coordinate as much as possible with the ISO and other State agencies so the State is using common assumptions and planning. And in the second and third year, the CAISO does the -- well, they're doing their long term transmission studies and they also do studies that feed into the LTPP reliability processes. And we are very grateful for the ISO for the analysis that they do, and it is very essential to our processes.

In the third year, which is what we're in, the third year of the 2012 process now, we do the analysis of the system needs. What we're hoping to get is studies in the summer and testimony and hearings that will lead to a conclusion as to what it needed primarily on flexibility, that's the big issue we're looking at, and also looking at SONGS and that impact. And the end result will be authorization of new resources that are needed and some evaluation of what resources are appropriate, both locationally and operational characteristics to meet the

state's future reliability needs.

This is a calendar basically of what I've just stated. The LTPP tries to use the most recent IEPR Update, uses the TPP, most recent transmission dates, but just the nature of this system means that all the data is always going to be a little bit old because it's always changing and you have to draw a line at some point and lock down your assumptions, like we did in December.

In the current LTPP, there are three different portfolios, one is based on commercial interest, which is basically Power Purchase Agreements and completed permit applications. It's focused on -- and this is for evaluating what renewable projects that are currently out there we're going to count in what's basically called the Discounted Core, which is the projects we think are going to happen.

The High DG case uses the commercial interest preference, but adds in an amount of distributed generation projects. Because there's a shorter timeline on many of the DG projects, we don't have confirmed PPAs on those.

The third portfolio is the Environmental Portfolio, where the environmental impacts takes a higher preference than, say, cost or commercial interest in the projects.

The commercial interest preference portfolios are used in most of the LTPP scenarios. We've basically found over time that there's very little difference in our process and the LTPP generation reliability planning process, between the different renewable portfolios in terms of the outcome that we're looking for which is reliability. Now, in transmission planning and some other things, there are just a greater impact of it, but for the actual trying to determine reliability, the different portfolios don't matter as much, and part of this is because there is so much RPS under contract that's going to come on line to meet the 33 percent that the actual delta between the different portfolios is relatively small. You know, if you've got projects that are already in construction, you're going to assume that they're there and then, with the amount that we've got under contract now, the amount that remains is relatively small to get to 33 percent. And the transmission system currently can pretty much handle that.

These are the scenarios that the Commission has adopted in the priorities in terms of modeling for them. And you can see that the first three scenarios are all using the commercial portfolio, 1, 2 and 1A; and 3 is the High DG case. And you can see that 1D uses actually the environmental case.

So the portfolios that will be studied -- so portfolios are built into the analysis that is being run by the ISO, and they're based on the most recent IEPR forecasts. And the results of these inform the decisions for additional resources, which I already said, and it will also be used in the transmission planning. So we produce portfolios that we give to the ISO that vary a little bit from what is used in the LTPP, to the different natures of the analysis being done and the outcome that is needed for that analysis. And Carlos will talk more about how the different portfolios are developed. But in the LTPP, this leads to the Commission's authorizations. And once you've authorized something that affects the future of what you need. I mean, if you currently were limited by a 33 percent renewable portfolio, so you plan for 33 percent renewables. And once you've done that, once you've bought to 33 percent renewables, or you've authorized utilities to buy to 33 percent renewables and they've made that commitment, then that impacts what you have forward because you don't want to double or triple-buy what you need, so you've got a limited amount of need and you don't want to double-buy and end up wasting the public's money.

The commercial interest in the High DG variant portfolios are calculated based on the commercial interest

score, which is weighted 70 percent, with lesser emphasis only 10 percent on the environmental score. And so, as I mentioned earlier, commercial interest score is the commercial interest portfolios which uses 70 percent commercial interest score, are used in the main modeling for the LTPP at the current time. The environmental portfolio uses a 70 percent weight and that affects -- this is a little bit of detail on the environmental score.

Environmental data is used later in the PUC procurement process, so when the utilities go out to buy permitting, it becomes a more major factor, the ability to get a permit to being environmentally located to get permits, becomes very important in the viability of a project. And of course, projects have to have the appropriate permits to come on line in construction. So a lot of environmental data and the actual procurement and decision of individual projects comes in the procurement phase, not in the initially planning phases.

And for the actual planning of transmission, or planning of overall reliability, the actual unique -- which project is being approved is much less important. I mean, if a project is on one side of the road, or the other side of the road, the impact on the transmission system, the impact on reliability is the same, two different developers, which one is in and which one is out

of the analysis really isn't important because what you're looking at is the need for transmission to that area and the reliability effects of that project. So this process doesn't look at -- it isn't making procurement decisions, it's only making more higher level decisions on the portfolios.

And that's the basic process. Do you have any questions?

COMMISSIONER MCALLISTER: Just one kind of general question. So could you maybe discuss some of the -- so very helpful, that last part about how, you know, you're not making procurement decisions, you're making kind of long term planning decisions that are more global and more general, but there is kind of some implicit or explicit assessment of how likely certain projects in certain areas are or are not to be built, right? So how likely those scenarios are. So sort of I guess I'm kind of looking for an understanding of the PUC's process within the LTPP, I would assume, sort of on the closer you get to certain realities panning out, how do you tune up -- sort of how do you do the long term transmission planning-related stuff, and then sort of how does that then play into -- how does that relate to the more specific project-based decisions that might be made down the road? So how do those two processes kind of hold

hands or communicate?

MR. STRAUSS: There's a couple different ways that things interact, and I'm not sure if I've got exactly what you're looking for, but Carlos will talk a little bit later that within making the RPS portfolios, there's part of a scoring mechanism to evaluate liability based on whether they've got financing, whether they've got their permits, and of course the environmental score is are they located in an environmentally preferred area, that counts 10 percent. And so there is that scoring that goes on in the creation of the Discounted Core which are the assumed in projects, assumed to happen projects.

COMMISSIONER MCALLISTER: Maybe I'll flip it around. So historically how have the sort of analyses at this early stage for long term planning purposes sort of panned out on the ground in actual projects? Retrospectively, how does that look? You know, have the predictions kind of generally been right and the individual projects kind of panned out in a way that's consistent with what you thought was going to happen?

MR. STRAUSS: I wouldn't say that the individual projects came out, but the basic location- wise and reliability impacts have come out fairly accurately. There's been a few major projects that had transmission impacts that no longer look viable, some of which have

died completely, some of which are still being pursued, but look less viable now than they did several years ago.

COMMISSIONER MCALLISTER: Yeah, okay. I mean, I guess what -- the reason I'm asking is just trying to figure out, it's a little bit difficult, right? Because you're having to make forward decisions without full information, and then the real world steps in and does things that may or may not be consistent with that, and sort how do you true those things up? I guess that's kind of the general idea I'm trying to capture here.

MR. STRAUSS: Right. So one of the things that -- I mean, all the scoring for the actual procurement has a component in it on the cost of transmission upgrades needed to bring that project to interconnect it. So to the extent that the ISO approves the transmission project around the interconnection and the PUC approves the transmission line, and if that project then dies, you have a transmission line and anyone who wants to connect to it has a much lower cost because the line is already built. So that has an effect of, you know, if you build it they will come. And to some extent the Commission did that with the Tehachapi Project, they looked at an area that had significant resource potential, renewable resource potential, and they pursued going forward and building a transmission line to that area before there was a full

range of projects to fill that line. And then through the procurement process, projects came on line and were -- contracts were entered into by the utilities that would attach to that line.

COMMISSIONER MCALLISTER: That's helpful. Thank you.

CHAIRMAN WEISENMILLER: I think another way of just following up on Commissioner McAllister's question was, a couple years ago, we were always assuming a 40 percent failure rate and my impression the last time we went through this process to try to come up with the residual net short, looking at what was under construction, it looked like the fare rate was going to be lower than 40 and that obviously has impacts on residual net short. So I'm not sure what the current sense of what the appropriate fare rate is on these things.

MR. STRAUSS: I haven't looked at the numbers recently, but it's something that we're always looking at and it impacts it, and that failure rate to some extent is impacted sort of by a number of older projects that are still alive, but look less viable than they did when they were originally contracted.

CHAIRMAN WEISENMILLER: More or less zombies.

MR. STRAUSS: Which were in the failure rate all along. I mean, that keeps the number much lower. But

there's been a lot of activity by the utilities to try to revise the contracting, to try to reduce the failure rate. But there's a lot of variables that go into whether a project actually comes online and only some of them are controllable.

CHAIRMAN WEISENMILLER: Okay. Thanks.

MR. JOHNSON: Good morning, Commissioners. My name is Roger Johnson --

COMMISSIONER MCALLISTER: Hey, Roger, I just want to point out that Kelly Foley has joined us, Advisor Commissioner Hochschild, so we have representation from all five Commission offices, so thank you all for making the time to come to the IEPR workshop, that's very helpful. And I think we're all very interested in this topic, so thanks a lot, Roger. No pressure, though. l

MR. JOHNSON: Thank you, Commissioners and Kelly. And thank you audience, thank you very much for coming today. My name is Roger Johnson, I'm the Deputy Director for the Siting, Transmission and Environmental Protection Division here at the Energy Commission.

I'd like to go over with you today the methodology that the Energy Commission staff used on scoring projects for the PUC's LTPP activity that Robert Strauss just described.

So we've done this scoring for a couple years

and each time we do the scoring, we had a little bit better data and another set of projects. So that's one thing I wanted to mention at the beginning here is that this assessment of these projects is a snapshot in time because each month the projects change, there's projects added into the system and there's projects that fall off, as we talked about, the failure rate of projects.

And so right now I've got a couple of example maps over here to demonstrate the projects, the locations of the projects, and how they fit into the areas that were being evaluated. And one thing you'll notice on that map is there are some projects that have numbers, but they have X's instead of points, and that X represents a project that originally was scored, but now with our most recent set of data that we put on the map for this workshop, that project no longer is being evaluated, so that would be a project that has fallen off. But that was part of the information that we used in a previous scoring effort; so I think that's helpful to see that.

So just to back up a little bit, in I believe it was March of last year we did the first set of scoring for the PUC and at that time it was a statewide effort and we scored 419 projects, and those were throughout the State of California, and Northern California, as well as in Southern California, within what's known as the DRECP, the

Desert Renewable Energy Conservation Plan. And this is an area that we've been working on with the REAT agencies, the Renewable Energy Action Team, and it's made up of the Energy Commission, the Department of Fish & Wildlife, U.S. BLM, and U.S. Fish & Wildlife Service. And these agencies have been essentially tracking projects from when we find out about them, if the agency has been working on them, or if a local agency has them under review, or if the Energy Commission has a project under review, the Renewable Energy Action Team is available to assist projects in permitting when they need it. And one of the outcomes for the DRECP is going to be an expedited Endangered Species Permitting for projects that are located within the designated areas. And I'll get to that in a minute.

So back in March, we scored 419 projects statewide and DRECP, at that time the REAT agencies had identified development focus areas which were large areas of interest which the agencies had determined were preferred areas for development because they were the least environmentally preferred area in the desert. So with that, we scored projects either in that, if they were in a renewable energy study area, or out. And it was a large polygon, and it was easy to see if the project was in or out.

So then in December of last year, the REAT

agencies published a December document that had refined those renewable energy study areas into development focus areas, and they had six alternatives that were being considered to essentially evaluate and to someday come up with a preferred alternative. So that's where in December the staff re-scored the DRECP projects for the PUC. And so we looked at our database and the PUC had 105 projects that had commercial -- they considered were commercial projects with power purchase agreements, and the Renewable Energy Action Team database had 221 projects in that area. And so we rescored those and provided those scores to the PUC.

And so the map that I have, the large map shows the DRECP and I've taken all the six separate renewable energy development focus areas and I've overlaid them, so there's these little maps at the top that show you what each alternative looked like, but on the map I've put them altogether to show you how the projects were either in or out of an alternative. So when we combined our database, we had a total of 326 projects for that scoring activity and we scored every project six times to determine -- sometimes it was always in a DFA and sometimes it was not.

So here is a summary of what we needed to do was have a Lat/Long for every project, so we had a location point, and that helped us to determine -- well, that

allowed us to determine whether or not it was in or without of a development focus area.

So now a little bit back on our database. The Renewable Energy Action Team has a renewable energy project database that we've developed, and the Commission has responsibility for managing that database. And like I mentioned, it's made up of the projects the agencies know about that they're working on, and then we've also checked in with the counties to understand all the projects they're working on. We're trying to maintain a comprehensive database of renewable energy projects throughout the state which will be available to the REAT agencies if they need information about a project. And we try to keep that updated, but it's very labor intensive to keep track of all these projects. For a while there, we were having monthly calls with some of the key counties that had a lot of renewable energy permitting activity going on to check in on their database, to check in on their projects, the status, you know, which ones were coming up for decisions for EIRs, which ones had just been filed, which ones were data adequate, and then which ones had dropped off, hadn't heard from the developer for a while; so we put those on the inactive list.

So it's a large database and we do publish this database, we try to keep it current. Maybe four times a

year we'll update the list on the Energy Commission's website, and it's found here at www.energy.ca.gov/33by2020. And that's where you'll find this current list. This one was revised January 30th of this year and it's got by county all the projects that we're tracking and the size of the project, the developer, and the technology.

So this is the information we've put out on the public website, there's more fields of information that the REAT agencies have as far as the status of the permitting, you know, do they have a Draft EIR, do they have a Final EIR, do they have an approval, what's the status of endangered species permitting? So those are all the fields that we're tracking internally.

And we've also prepared a map to display this information for the public. There's two maps; one is a .pdf map that is just the State of California with all the projects on it, and another is we've created a Google Earth Layer, it's a .kmz file where every project has a point, and I don't have it shown here, but if you put your cursor on that star, that yellow star is a PV project, it'll have a call-out window that opens up and gives you all the information about the project, the developer and it has more information than what's in the table, which we think is very helpful to be able to understand what these

projects are and where they're located.

So the scoring methodology, the staff goes through and looks at the location of every project and gives it a score, which I'll provide that scoring matrix in a minute here. Scores are based on positive preferences for projects and development focus areas, or on disturbed lands. A negative is a -- so the lower the score, the better; you know, go figure, but that's the way it is. So zero is the best score, 100 is the worst score. So a neutral score is a 50 where assigned projects are on non-desert, non-disturbed lands, outside of the DRECP.

So just a point of information: we've developed a lot of good environmental information within the desert. The DRECP has done a lot of current mapping, we've mapped parts of the desert that have never been mapped before, like vegetation mapping, to understand better the habitats, we've got information about corridors for migration, for desert species, so we have a lot of good information, and so we're able to say more about essentially the preference for the location in the desert. Outside of the desert, we don't have as much good information, so we have certain layers that we've added to the maps that show salt affected soils where people understand that these soils are poor for agricultural purposes and might have a better use, like maybe for

renewable energy. So those were identified, as well as landfills, toxic waste sites. Those are known locations as well. And so we were able to provide a different score than just a 50 for projects that are outside of the desert.

So the Environmental Scoring Matrix that we developed with the PUC is this matrix, I won't read all the examples, but the question -- there's five categories and the first question is, is it a Distributed Generation project or not, and only one category, number 5, deals with DG projects; and then location: is it in the DRECP? Is it on disturbed lands? Is it in a development focus area? And then what the score would be for those criteria. And so there are -- there are ways to be in the DRECP, to be in a DFA, and get a good score, but then you can get a better score if you're on disturbed lands within that DFA. And there's very little decision making here other than, on every project we have the cartographers put the point on the map and we know whether or not it's within a DFA or not. These DFAs are not contiguous. The alternatives, it's made up of multiple small polygons grouped more or less in a general region, but it's not contiguous, so a project could be what appears to be in the right area, but it's not, you know, it's not within what the agencies have determined to be the development

focus areas.

But then we do use the Google Earth to go down on every project location to determine essentially is it sitting on Ag land, or is it on disturbed lands, is it within a substation, is it on a parking lot, or is it something else where the land can be determined, and then finally that Distributed Generation pretty much gets the best score because it's typically rooftop solar, ground mounted PV, at wastewater treatment plants, or on Brownfields, and so that received the best score. And again, the definition of DG is 20 megawatts or less, or less than 20 megawatts.

So the Scoring Process. Ensure that all projects had a unique CPUC or CEC ID number, and those numbers are on the map, cartography input those on the maps, and then we scored each alternative. And for this effort, because at this time we don't know which alternative will be a preferred alternative, or *the* preferred alternative, so the decision was made to score every project six times, and then average those scores to get them a final score. So that's how that scoring came up this time. In the future, when there is a preferred alternative, then there will be a score that would recognize that.

So here's the scoring process, and I pretty much

got ahead of myself and described this to you, but there's the map. And it's also here on the wall. This overlays -- as I mentioned, we added an addition to the DFAs for the DRECP, we added landfills, Superfund sites, salt affected soils, and then each project was identified and scored.

Here is just a close-up of the West Mojave that shows the number of projects that were scored. Those different colored areas are, for this particular exercise, DFAs, yes. And then this is a view of the Google Earth feature that has the projects also identified, surrounding Edwards Air Force Base there in the West Mojave.

And then after each map was produced, the databases were sorted and we went through and did a QC on the maps to make sure that every project had received a score. So as I mentioned, I'd like to just reiterate that this is a snapshot of the projects that are available to us and that are known to us at the time the scoring is done and, as we discussed earlier, these projects are fluid. So thank you very much. Any questions?

CHAIRMAN WEISENMILLER: Roger, for the 326 projects, how many megawatts does that correspond to?

MR. JOHNSON: I'll check and I'll get back to you. I don't know.

CHAIRMAN WEISENMILLER: Okay. And we've talked -- you know, obviously this is an evolution where we

started out with RETI several years ago did the statewide environmental out of DRECP, we have much better data now on that area, so it really enhanced it there, but certainly a common complaint, I guess, as we've gone forward is sort of covering the rest of the state, if not the rest of the West. And so do you want to talk about where we are in terms of being somewhat more comprehensive, realizing that, again, we're not going to have the data quality anywhere near the DRECP sites?

MR. JOHNSON: Well, Chairman, that's what I'm hoping we'll get into that discussion in the roundtable discussion, to know what other databases are out there that are not the same quality as DRECP, but are available to us. I know that the Department of Fish & Wildlife has a statewide database of habitats, which would provide something. I know there's a CNDDB database that the Department of Fish & Wildlife maintains that's -- it's a listing of actual sitings of animals and plants, so it just tells you what we know, it doesn't tell you what could be there, and which is an important planning tool, as well. And then outside of California, I know that the Western Governors is also working on information and I hope that we can have that discussion today.

CHAIRMAN WEISENMILLER: Okay, well, stay tuned for coming attractions.

MR. JOHNSON: All right. Thank you.

MR. VELASQUEZ: Good morning. My name is Carlos Velasquez. I work for the Generation and Transportation Planning Section at the California PUC.

Today I'm going to provide just a general overview of the RPS Calculator and talk about the portfolios that were created with this in the Long Term Procurement Plan Portfolio, portfolios in the 2012 LTPP, as well as the Transmission Planning Process Portfolios; and then, very generally, just talk about the ongoing analysis in regards to the Environmental Scoring Methodology that the CPUC is currently undertaking.

Just real quickly, E3 is the consulting firm that created the RPS Calculator. With E3's permission, we've used two of their slides here today.

Now, just diving right into the Project Scoring Methodology, in the RPS Calculator, each renewable energy project is scored on a 0-100 scale with, again, a score of 0 being best, based on four scoring metrics: these are the Net Cost Score, the Environmental Score, the Commercial Interest Score, and the Permitting Score. The RPS Calculator calculates the weighted average score of these four metrics for each project, for a given portfolio.

Now, going through the Calculator's project selection methodology, the calculator ranks each of the

projects based on the weighted average score of the four metrics that you just saw. The lower the score, again, the higher the rank; so therefore, the higher the rank of the weighted average scores, the more likely it is for a project to be selected by the calculator, based on certain portfolio assumptions.

The calculator also allocates the lowest cost out-of-state projects to host states until all non-California WECC RPS targets for 2022 are satisfied. So that essentially means that the calculator allows all other states' RPS targets to be met first before making available those out-of-state projects to California for consideration based on their individual rankings for California to meet its 33 percent RPS target.

Now, once all the projects are ranked, the calculator selects in-state and out-of-state projects to fill transmission bundles. There are three categories of these transmission bundles; there are existing transmission, the second category is minor upgrades that are required on existing transmission, a third category is a new transmission as a bundle. The calculator then calculates the aggregate score of each of these transmission bundles and then these aggregate scores are used to rank these transmission bundles against what we call non-CREZ projects and REC-only projects. So non-CREZ

projects are essentially projects that are not in the Competitive Renewable Energy Zones; REC-only projects are those projects that California uses the renewable energy attributes thereof to satisfy our Renewable Net Short for the state. So the renewable attribute is taken into account, not necessarily the energy of these projects.

The calculator gives preference, again, to Discounted Core projects and this is because these projects are deemed to be the most commercially viable projects that are in the calculator. Discounted Core projects are projects that have either an executed or an approved contract and also the relevant environmental permit application is complete.

An executed contract is a contract between the IOU and the developer that's counterparty, and an approved contract is this executed contract that has an approval by the CPUC via the Commission's Advice Letter process that the Renewable Portfolio Standard Section undertakes. So they analyze these projects via an advice letter, a formal advice letter process.

Now, building an RPS Portfolio, again, Discounted Core projects are selected first, they're given preference, unless they require new transmission. And on this point, I'll talk a little more about it on the following slide.

After the Discounted Core projects are selected, other projects & bundles are selected on the basis of their ranking in order to meet the given Portfolio's Renewable Net Short (RNS). Okay, so the Renewable Net Short is an energy value indicating the renewable energy that is still needed in order to comply with California's 33% RPS target. Again, Discounted Core projects are "forced in," that is, they're given preference if they do not need new transmission. Or, if they need new transmission, with the caveat that at least 67% of the energy that's going to flow through that transmission line, or minor upgrade, comes from Discounted Core projects. So if this 67% energy threshold is not met, Discounted Core projects must then compete along with all other projects based on their individual rank.

Now, just real quickly, I'll go into the Long Term Procurement Plan Portfolios that were created via the 2012 LTPP. These are portfolios that are used by the CAISO for operation on flexibility studies. These portfolios were adopted by the Commission in Decision 1212010.

This chart here illustrates the weights of the metrics that were used in the LTPP Portfolio calculation within the calculator. What you see up here are the portfolio names, I'm looking at this chart over here.

Down here is you see the Renewable Net Shorts associated with each of these portfolios. Down here you see the metric score, and the third line here you see the metric score receiving a 70 percent weight. And in all four portfolios, that's the commercial interest score that gets a 70 percent weight. All other metrics, the three other metrics, including the environmental score, get the 10 percent weight, and that's for the LTTP Portfolios.

The takeaway here is that the LTTP Portfolios, the portfolio results are driven by the Renewable Net Short that is the second row there, in addition to the commercial interest score, which is the 70 percent score.

Now, this is a summary of the LTPP Portfolios, again, down here you see the Renewable Net Shorts, those Renewable Net Shorts are calculated by -- and, by the way, Renewable Net Short is an energy value, so it's a gigawatt value. The numbers you see below, these are nameplate capacity values, okay? But just concentrating on the Renewable Net Short, just real quickly, the way these are calculated is that we take the IEPR forecast that the CEC calculates in 2012, and that forecast embeds demand side management assumptions, okay? What the CPUC has done in LTPP is that it has assumed incremental demand side management assumptions above and beyond what's included in the IEPR forecast, so incremental EE, photovoltaic, and

incremental combined heat and power. Again, we used the IEPR forecast mid case forecast and from that we subtract out these incremental demand side management energy values. From that, we net out existing renewable generation, the energy thereof, in addition to taking into account retirements of projects and taking into account scheduled projects. Given the fact that this was calculated in August of 2012, we take into account renewable projects that were scheduled to come on line by the end of 2012. Based on these deductions, we come up with the relevant renewable energy net shorts and what you could see here is that, regardless of existing what's netted out, what was scheduled to come on line, those assumptions are the same for each of these portfolios. The driver behind the difference between these Renewable Net Shorts are the demand side management assumptions for the three portfolios off to the left. For the right-hand portfolio, which it is a theoretical High DG/High DSM 40 percent by 2030, the driver there is in large part the 40 percent component, which is obviously higher than 33 percent, and therefore a higher Renewable Net Short.

What I'd like to point out real quickly is the Discounted Core projects in each one of these portfolios, the projects that are given preference to, fill the vast majority of the respective Renewable Net Short. Generic

projects are those projects that, like the Discounted Core projects, have an executed and an approved contract, but unlike the Discounted Core projects, generic projects don't have the environmental permit application completed, so that makes them generic.

Again, down here you see the nameplate megawatt capacity values of the relevant renewable technologies that are filling these respective Renewable Net Shorts, and at the very bottom in blue you see transmission -- new transmission segments that the calculator essentially spits out in order to bring these renewable energy projects on line.

Now moving on to the Transmission Planning Process, the portfolios in this process were submitted to the CAISO jointly by the CEC and the CPUC on February 7th of this year. So in these portfolios, in this process, we proposed three portfolios, the Commercial Interest Portfolio, the Environmental Portfolio, and the High DG. In the Commercial Interest, preference again is given to projects with both power purchase agreements, that is, an executed or an improved contract, and the completed permit application. In the environmental portfolio, we give again preference to generation in environmentally preferred locations that the CEC just talked about. In the High DG Portfolio, that's essentially the same

commercial interest portfolio, but the variant here is that the commercial interest portfolio, this portfolio includes extra Small Solar PV near load. So we essentially take Small Solar PV projects in the calculator and put them into the Discounted Core, giving them preference over the other projects.

In this chart, we attempt to depict the metrics, the weights associated with the TPP portfolios. Up here you see the name of the case, the second line you see the Renewable Net Short, it's the same case, therefore the same Renewable Net Short. The third line, you see again the metric score receiving the 70 percent weighing and, again, down here you see the four metrics and their relevant weights.

The takeaway from this chart is the fact that, in the TPP Portfolio, the results are largely driven by the weights given to either the Commercial Interest Score or the Environmental Score.

Now, this chart here again illustrates the -- we actually were explicit in this chart in regards to the IEPR forecast that was used, again, we got from the CEC in 2012, we used the same incremental demand side management assumptions in each of these portfolios, just real quickly drawing attention to the Discounted Core, again the vast majority of the Renewable Net Short is met by these

Discounted Core projects relative to the generic projects.

Down here, again, nameplate values for the relevant technologies, and down there the new transmission segments that are needed. Now, I'd like to draw attention to the two columns on the left-hand side, the Commercial Portfolio and the Environmental Portfolio. Just going back to this chart here, as you can see, in order to come up with the TPP Environmental Portfolio, what we did was we essentially decreased the weight given to the commercial interest score from 70 percent to 10 percent, and simultaneously increased the environmental score from a 10 percent to a 70 percent. That's the only change that occurred in this portfolio, and what you see here is you see 3 megawatts of this more of biogas, you see 180 additional megawatts of biomass, you see 21 megawatts of hydro that you didn't see before, you see 54 megawatts of Large Scale Solar PV, and you see 1,460 megawatts of Small Solar PV.

In the High DG case, again, same Commercial Portfolio, the only difference is that we forced in Small Solar PV near load, given that these are given preference, these projects; all of a sudden you see the Small Solar PV amount increase from 2,034 megawatts to over 4,200 megawatts, and you potentially see a decrease in every single other technology because not that much of these

technologies is needed, especially Large Scale Solar PV.

So just very very generally, going over the ongoing analysis regarding the environment scoring methodology that the CPUC has undertaken. The CPUC Energy Division is examining Environmental Scoring Methodologies. We subcontracted Black & Veatch to analyze the environmental scoring and screening methodologies that are existing in the market. Apparently Black & Veatch is doing data testing, back testing for the robustness and comprehensiveness of its data. The RPS staff at the CPUC has reached out to the CEC and communicated with them in regards to two methodologies, the Renewable Energy Transmission Initiative (RETI) methodology, and the Environmental Data Task Force (EDTF) methodology that's apparently being worked on by a subgroup within the WECC.

In terms of collection of environmental data, Black & Veatch started analyzing this data in March of this year. It's collecting additional information to complete this analysis. The CPUC's RPS staff is also collecting project specific data in order to aid Black & Veatch's analysis. We expect that all data will be in by the end of this month.

In terms of Next Steps, pending the results of this analysis, the CPUC could find that it is necessary to revisit the Environmental Scoring Methodology being used

in the RPS Calculator, so that is the methodology that you just heard about from the CEC. The CPUC will collaborate with the CEC as this analysis develops and results become available to us.

So what happens if a new methodology is developed? The CPUC would hold a public stakeholder process with workshops in order to vet any proposed Environmental Scoring Methodology with the stakeholder community. And depending on the final results, we anticipate that by late this year, early next year, the development of any new environmental scoring or screening methodology and the stakeholder vetting process will have been completed.

For additional detail, you see that is the webpage on our CPUC website where the RPS Calculator, Regular Version High DG is housed. You see additional contact information of Jason Simon, the person, the staff who works on Environmental Scoring, and is the point person on that test, in addition to Nat Skinner who in large part leads along with BOD, leads the LTPP scenario studies at the CPUC. That's all I have for you today.

COMMISSIONER MCALLISTER: So thank you very much, that was great. I kind of just have a context question, really. So I guess the established kind of criteria or weighting is 70 percent, 10/10/10, right, for

the Commercial being 70 percent. So is there an explicit sort of effort to revisit that and figure out what a better weighting scenario might look like, and that's why the PUC is developing this new tool and all that? I mean, maybe you said that at the beginning and I missed it, but I'm kind of like looking for the context of, you know, what's the end goal here? Is it to come up with a different system to replace the one that's there? Or just tweak it?

MR. VELASQUEZ: Not necessarily to -- with the explicit assumption that it needs to be replaced, that is the methodology, we're looking to see how robust and comprehensive this data is by back testing data, at least this is my understanding Black & Veatch is doing this, to see whether or not we could do better in terms of environmental scoring, whether or not the environmental scoring that's currently being used and possibly including the weight, is relevant to the projects and relevant to the process.

COMMISSIONER MCALLISTER: So if you weighted environment more heavily, or in a different way, you might end up with different recommendations and that's useful to know going forward --

MR. VELASQUEZ: Without a doubt.

COMMISSIONER MCALLISTER: Okay, great. Thanks

very much.

COMMISSIONER DOUGLAS: Just a brief comment. I'm not sure if this is a question. But as we continue to develop information in DRECP, my own belief is that the methodology used to score projects is going to have to differ. This is really an interim methodology and we're continuing to get better information, we're continuing to get more ability to create more consistency with what we look at in the desert versus outside of the desert, although not perfect consistency. And so I think that there's going to have to be an interactive dialogue as opposed to an analysis by a contractor that is too fixed on a methodology that has been used, say, this year or last year. That's one comment. I'd love to hear your thoughts.

MR. VELASQUEZ: No, we agree on that, that's why it will be a collaborative effort between us and the CEC and including the stakeholder process that would include everyone who has an interest in this.

COMMISSIONER DOUGLAS: And that second part, I think, is also important because there's a tremendous amount of interest and that's, I think, reflected by the number of people in the room, the number of inquiries that we've gotten, and certainly I've gotten quite a number directly about this process over time, and certainly in

the DRECP effort, we have a lot of partners among the local governments. And so we want to make sure that we have a process that is able to integrate and reflect their interests, as well. So I think there's a lot of work to do and we're at the formative stages of that. So, anyway, thank you. Thanks for being here.

CHAIRMAN WEISENMILLER: My question is the cost numbers. Obviously, the calculator builds off of RETI, which was done 2-'08ish in terms of the data in there. There's been an adjustment to the PV costs to make them more reflective of current realities, but we've always sort of hoped that there would be more of an across the board updating of the costs. Now, having said that, you know, Robert knows, we're dealing with such small margins here in a way that you're not going to see much change with those cost numbers, but presumably better data always helps.

MR. VELASQUEZ: We agree.

MR. STRAUSS: That's one of the things what we're looking into right now is how we could update those cost numbers, separately from the Black & Veatch effort, but the problem is getting good data.

COMMISSIONER MCALLISTER: Anything else? All right, thanks very much.

MS. KOROSEC: We did have -- excuse me -- one

question from one of our WebEx participants, from Karen Norene Mills. She's asking, "Is there data being collected to track impacts from projects to Ag land, particularly solar PV? And is there any coordination going on with the Department of Conservation?"

MR. VELASQUEZ: I would recommend that this person contact Jason Simon whose contact information is at the end of the slide to get this question answered. All right, so the person on the phone, the contact information there is Jasonsimon@cpuc.ca.gov, the phone number is (415) 703-5906.

MS. MILLIRON: Thank you. This is Misa Milliron again. And before we switch modes to the roundtable, there was one question that came in on a blue card to Roger Johnson from Mr. Pushkar Wagle -- I hope I pronounced your name right. I will go ahead and read that question off and then I'll allow you to go ahead and come up to the podium if you'd like to elaborate further, and that will give a chance for the other roundtable participants to join us at the table. The question is whether the environmental scoring methodology of the CEC takes into account environmental impact of transmission triggered by renewable generation projects.

MR. JOHNSON: The short answer is no. It's project specific, it doesn't look at what other impacts

might be associated with the transmission that would be needed to connect that project. And, Chairman Weisenmiller, I have those megawatts for you, it's 36,250 megawatts associated with those 326 projects.

CHAIRMAN WEISENMILLER: Yeah, thank you. No, that was my recollection, is we were well over what we would need for the Renewable Net Short, even not going out of state.

MS. MILLIRON: Okay, so now we're going to shift modes to the roundtable and you can see the participants are on the slide there. In this roundtable, we're going to have each panelist provide about five minutes of prepared remarks addressing any or all of the questions that will be shown on the next slide as they pertain to their organization's experience. And we'll go ahead and follow the order of panelists given on the agenda.

During each five-minute panelist's segment, we'll allow questions from the dais only just to make sure that we get through all of the panelists. Once all the panelists have spoken, there will be about 30 minutes for discussion and questions among the panelists from the dais, the room, the WebEx, and the phone. If we run out of time for questions and comments from outside the dais, questions to the panel could also be posed during the public comment time immediately following the roundtable.

So next I want to give an overview of the questions, I'll just read each one of them for the benefit of those that may not have the attachment with the questions.

So the first one: "Considering the CPUC's current and long term renewable energy data needs related to CPUC scenario input and potential future database improvements, what type of environmental or land use data would be useful for the Energy Commission to continue gathering?" Roger showed you a little bit about the information that we are currently gathering, so you may have some reactions to that.

Secondly, "What enhancements to the data that we are tracking in environmental reporting to the CPUC that we're doing now would be helpful for scenario planning? What sources of out-of-state renewable project data are available for the Energy Commission's use? How can we access this data? And then what are some of the issues with working with various states' data sets and renewable energy-related databases in general that you may have experienced?"

Third, "What type of renewable energy metrics and reports are used and/or are reported by your organization?" Some examples that we've been asked to report on include total megawatts by County, types of

renewable facilities and their status, and we also get questions on the status of Power Purchase Agreements and those types of questions. But there's a great range of things that we report on.

The last question is, "What are important characteristics and data fields for a publicly accessible renewable energy project database that would be useful to agencies and stakeholders?" And we want to gather information on that.

So the goal of these questions is to address current limitations on the databases that we have available for reporting in the scenario development process, to gather ideas on how to fill some important gaps, get feedback on our current environmental scoring and reporting, learn about out-of-state and other sources of planning level environmental data, in-land use data, and get a sense of important elements of a renewable energy project database that would be useful for future reporting and scenario development activities, and useful to stakeholders.

Finally, I'd like to remind all of you of the opportunity to submit written responses and comments after the workshop by using the Docket, and instructions for that will be given at the end of the workshop, and they're also on the Notice.

So with that, I will turn it over to our first panelist, you've already seen him, it's Roger Johnson from the Energy Commission.

MR. JOHNSON: Thank you, Misa. On the draft agenda, I was way down there. So -- but since I've already spoken, I don't mind going first. I am interested, though, in the last discussion as far as the CPUC's long term renewable energy data needs, so I'm very interested in this new effort that they've undertaken to understand what environmental data is being collected. That's something that I'm very interested to know about.

The Energy Commission is using all the information that's been made available to us through the DRECP process; we're working with environmental groups using models that they've developed, or that they are essentially championing for looking at environmental effects; we're looking at data that we've developed through the DRECP, which I mentioned was new mapping information in the desert, looking at corridors and, again, the information that was used to develop the development focus areas as far as the different land uses and how those fit together.

So I'm glad that this is going to be a public proceeding and I get to participate in that, and to understand more about it and to help understand what data

is being used and how it will be used.

What enhancements to Energy Commission Data Tracking and Environmental Reporting to the PUC would be helpful for scenario planning? Well, that just gets down to the database that we're using, how can we improve that? It's really a locational database with points and then, with those points, then we go and use what other information we've developed to provide a score. So any improvement in the environmental -- especially outside of the desert would be much appreciated and would be helpful in that effort. So as I mentioned, I hope we can talk about what other databases might be available in California outside of the desert that could get better information than we have today on essentially endangered species and habitats that would be helpful for scoring projects located outside the desert.

I'm going to pass on the out-of-state question and I'm going to maybe come back to that after I hear from the other panelists about what's going on out-of-state. And I'd like to spend a little bit of time here in the metrics, reports that are used or are reported by your organization.

Here at the Energy Commission we regularly get requests for how many projects, how many megawatts located in my Senate District, in my Assembly District, in the

state, in the desert. And so we're trying to maintain a database that will be able to develop that information and report that out. So primarily the metrics are the project name -- and that's a real challenge there, too, because a lot of projects are known by different names. And then the same project will be purchased by somebody else and they'll change the name, and so sometimes we just can't talk about project names, so it would be nice if we had a universal project number that we could all refer to. The types -- that's important, as well. And here lately the projects have been changing their types of technology, so a project that started out as a thermal solar, now it's going to be a PV project. So it's important, I think, to keep track of that. The status -- we try to keep track of all the status of the projects to know which ones are still in permitting, which ones have finished, which ones could start constructions, which ones are in construction, and then, for these large renewable projects, there's also an issue of phases. Sure, we've permitted a thousand megawatts, but it's four 250-megawatt phases, and so when you start talking about what that means, so can we just count on the first 250? And then the market is going to decide whether or not those later phases get built? Definitely, you'll have to have transmission to accommodate all of it.

And speaking of transmission, that's something that we also try to understand, although it's difficult because the ISO has a database of projects, but it's all confidential, so you have to do a lot of sleuthing to figure out what project actually is located in that database, what substation are they connecting to, and whether or not they have an approved interconnection agreement, or whether they even applied to have application for an interconnection agreement. That's something that these projects can't go forward without those interconnection agreements. So they might be pursuing PPAs, but without the transmission, that project shouldn't be considered as far along as maybe some other projects.

And then finally PPAs. For the PUC, that's pretty easy, they keep a database of the projects that they're looking at. It was nice to understand the difference between executed and approved because that's something that's always confusing to me is they have a Power Purchase Agreement, but that's just between them and the utility, it hasn't been improved by the PUC, which is the final approval they need. And then for the other projects for the publicly-owned utilities like SMUD and LADWP, I'm not sure that we have good information about those PPAs. So what we do is we go to the developers and

we try to get them to fill in the blanks for us, identify whether or not they've got an application for an interconnection study, identify whether or not they've got a PPA or if they're pursuing one, or if they have an executed one, and try to fill out our database with that information, which helps us to understand, again, the completeness of that project and the commercial attributes of that project.

So what's useful? Right now we're only publishing, like I mentioned, the name of the project, the location, the technology, and the size of the project. Beyond that, the data seems to change as far as the permitting process, the permitting status, and that changes weekly, monthly. I think it would be helpful, though, to add another column which would be status. And from that one status column, maybe we could identify whether or not it's in permitting, if it's approved, if it's under construction, or if it's operating. Right now, the project list that we have on the web for folks, again, we're only -- the REAT agencies are interested in tracking projects through permitting to see whether or not we can be of assistance to those projects to obtain their permits. After they get their permits, we drop them down in our database to a section called "Permitted," but we don't track them as far as construction -- Energy

Commission projects, we do, but projects outside of our jurisdiction, we don't track them for construction progress and to see how many phases have come on line. You know, I read the press and I see when projects are ribbon cutting for, and I know all of that, so I'll send that information to the person running the database to essentially update that project, you know, that so many megawatts are now on line. So I think it would be helpful to have a status on the projects.

And then ultimately I'd like to see the State have a database that can be accessed by developers, agencies. Someone needs to maintain that database, but at least there might be a way to submit changes, to someone that could update that database, to essentially just say that that project is no longer going forward, the county calls us and says "we haven't heard from that developer, so we've stopped working on that one," so we could mark that project as being inactive, or in suspension, or something like that and maybe contact the developer and see whether or not it should just come off the list.

The one thing I will say about our database is that I've never dropped a project, I've always just moved it to a different category because someday I'm going to get the request, "Well, where have people proposed projects in the past?" So even if they didn't develop

that project, somebody thought that was a location, so we might have a good database of potential project sites that people would like to start talking about.

MS. MILLIRON: Thank you. I think we have time for a question or two from the dais, and then we'll move to the next panelist. Okay, next up we have Lorraine Gonzalez who is also from the Energy Commission.

MS. GONZALEZ: Good morning. So I'm Lorraine Gonzalez from the California Energy Commission. I work in the Renewable Energy Office and I've been asked here today to go over the types of data that we collect in our office, in the Renewable Energy Office.

We have four types of data that we collect, Verification Data, Certification Data, Power Source Disclosure Program Data, and then one type of data that we'll be expecting in the future would be contract information from the publicly-owned utilities for their RPS Programs.

So with the Verification data, that information is collected, is reported from utilities as part of the RPS Program for RPS compliance, and the data that we collect for verification is a very simple form, it's just the facility name, the fuel type of the facility, the monthly generation from the facility, and then I.D. numbers for each facility, so those I.D. numbers would

include the RPS I.D., the WREGIS I.D., and the EIA I.D., which is information from the Energy Information Administration, I think is what the acronym stands for.

As far as Certification data, this is information that is either reported by the facility, or by the utility on the facility's behalf. The Certification data is part of the Renewables Portfolios Standard, it's a self-certification program where the facility will give information to the Renewable Energy Office for certification for the RPS. And that would be information on the facility name, the location of the facility, the nameplate capacity of the facility, the commercial operation date, the fuel types of the facility, information on the owner, as well as identification numbers -- again, WREGIS identification, the EIA identification, and the FERC identification numbers, and then what balancing authority area the facility is located in.

For a power source disclosure, this is information that gets reported to the Energy Commission, it's reported by every utility in California that serves retail customers, and this information would include the facility name, the fuel type of the facility, the location, whether it's in-state or in California, or outside of California, and then the amount of electricity

procured in the previous calendar year, so that would include all procurement from each utility in California.

And then lastly, the Renewable Energy Office is working on a set of regulations for publicly-owned utilities for RPS compliance under SBX12, and so we've come up with a reporting form for the publicly-owned utilities to report on their RPS status each year. And so we are expecting an annual report to come in from every POU, every year, and it would include information on contracts that the utility -- the POU has either already entered into, or is planning to enter into, and so that would be information on the facility, the fuel type of the facility, and the location of the facility, the facility status, whether it's on line, under construction, planned, existing, new, and the contract execution and start dates, and the contract term, and then the end date if it is known, and the facility on line dates.

So that's basically everything that we collect in the Renewable Energy Office. If there are any questions on any of the information that we're collecting, or how we use it, or anything like that, I'd be happy to answer.

MS. MILLIRON: I just have a quick follow-up which was Roger gave a URL where the siting division usually posts -- well, is going to post quarterly

information. Is there a similar link that would be available for the public for some of this information? Because I know that you do have it in some places, but is there a quick link or somewhere that people can visit?

MS. GONZALEZ: At the moment, well, you know, for the Certification data, I think there is a list of facilities that are certified by the Energy Commission that is available to the public. As far as like the power source disclosure data, we do collect that information and if any member of the public would like to request that information, then they send a Public Records Act Request to us in our office, and then we can distribute the information that we're looking for. We have looked into posting all of those reports online for public access, but I still think that is something being considered at the Energy Commission. And I'm not sure what the plan is for the POU contract data because we have not started collecting it yet. I think we still need to discuss further how that information will be shared with the public.

MS. MILLIRON: Sure. Thank you. Next up is Robert Strauss who we heard from earlier, from the PUC.

MR. STRAUSS: The PUC sort of answered the questions in the presentation, so I don't have a lot to say. I do want to add a couple of things. Commissioner

Weisenmiller, Chairman Weisenmiller, mentioned the failure rate of these projects and one of the reasons projects fail is the inability to get permits, so to the extent that good environmental data is available to developers in the early development process, that would reduce the failure rate as -- of which self-selected projects in areas that are preferred rather than areas that are harmful. So having that information available to developers would be very useful, not directly to us, but to the whole system.

One issue that we've been dealing with, when I started doing this generation planning, we were looking at sort of system-wide resources and now we're looking at the connection of different resources at the busbar level, very precise data, and trying to forecast 10 years forward and saying, okay, where is this energy efficiency project that hasn't been -- the program hasn't been fully developed yet, where are the load reductions going to come from that project 10 years from now so we can anticipate the reliability impacts? You know, and we're trying to do that for all the process, the small PV being one of them, you know. There's no easy solution to this, but we're working on it. You know, to the extent that just the concept of if we're getting information to the busbar level, it's what's really needed for transmission

modeling, and there's no easy solution, we have to do the best using the transmission planner knowledge and expertise to try to forecast that, but better data is always better.

In terms of what data do we need for our actual processes, that's sort of why we hired the consultant is to look into -- we don't really have a strong answer for that yet. That's what we're looking into, saying what's the most useful data.

MS. MILLIRON: Any questions?

COMMISSIONER MCALLISTER: I just have a couple. So Lorraine, most of what you talked about was RPS compliance-related, right? Is there any other -- does the Commission give any other use to that data sort of for just globally speaking? Because pretty much we do it because of statute and compliance? Or is there some other reason that we do that or place we report it?

MR. STRAUSS: Well, some of the environmental data is used for --

COMMISSIONER MCALLISTER: That was actually on Lorraine, back to Lorraine, sorry.

MS. GONZALEZ: That's okay.

MR. STRAUSS: Sorry.

MS. GONZALEZ: No problem.

COMMISSIONER MCALLISTER: I do have a question

for you, though, right after this.

MS. GONZALEZ: So the power source disclosure program data does come from a different program that's not part of the RPS, and that information is used in someone else's at the Energy Commission, as well as public analysis when any member of the public or any advocacy group wants to determine what a utility is doing as far as importing electricity into the state, or what their electricity sources look like, so the power source disclosure program data is used for that purpose. It's also used -- I think it's used in some parts for the Energy Commission's Renewable Net Short, as well as to calculate -- the Energy Commission has a webpage for California's total system power, and so the Power Source Disclosure Programs out-out-state procurement information is used to calculate California's total system power mix. Let's see, I think Certification data is pretty much -- it's collected just to be used as information to determine whether a facility is RPS eligible or not and the Verification data is used to determine whether a utility, the procurement claims from each utility for their RPS status do match up with generation data collected from outside sources, to make sure that procurement does not exceed generation.

COMMISSIONER MCALLISTER: Great. Okay, thank

you. So, Robert, I do want to just -- so I totally agree with you, you know, more data, better data, is better generally in theory, right? You kind of have to be prepared for it when you get it, right? So be careful what you ask for, I guess, in some cases. And also be consistent with what you ask for, so over time you can do the kind of longitudinal understanding to do both backcasting -- accurate backcasting calibration, validation, and all that kind of stuff is going to help you going forward. And I would just point out that we kind of have similar -- we're talking about larger scale transmission level busbar and up, really -- but appreciating what's going on at the customer level and at the distribution level, I think, is increasingly something that we have to figure out how to do better. And on the energy efficiency side, I think there's an equivalent set of problems -- you mentioned it, and that's kind of why I'm bringing it up -- of trying to actually not just sort of sit back and kind of anticipate, "Oh, where is this energy efficiency going to be?" And sort of look into the crystal ball, in a way, but also really target programs going forward so that we can constrain the scenarios to a more narrow band, and then also have the data coming in that allows us to understand the evolution going forward to see if our predictions were right. So I think I'm

really excited to be working with the PUC on this data issue with Peevey's office, with President Peevey's office, and with the Energy Division to really -- I think really much more intentionally and collaboratively figure out what resources we need on the program side, on energy efficiency, to collect the right data, have it accessible to the right people, to be able to have this sort of conversation that we're having about transmission planning today and environmental attributes, about program impacts and program design going forward on the energy efficiency side. So I think this data discussion is, since we have such a much more granular world, I think it's rearing its little head all the time in different scenarios and different context, and I think it's important here and equally in other areas, so just keeping that in mind more broadly.

MS. MILLIRON: I think we'll move on to --

COMMISSIONER MCALLISTER: But there wasn't a question there, sorry.

MS. MILLIRON: -- just again, since I'm the timekeeper, I guess I'll keep moving along to Carlos Velasquez, who we heard from also. I don't know if you have additional comments or -- okay. So next we have Bill Condon with the California Department of Fish and Wildlife, and I invited him to talk about some of the

sources of data that the Department may be able to lend to this effort.

MR. CONDON: Good morning, everybody. It seems to me that here's an opportunity to talk about what sort of data would be ideal to be collected related to projects and it's a general question and I'll try to make it specific to renewable energy projects, but regarding data collection related to projects which in turn collectively can inform decisions about regional planning, in our experience one of the challenges is to collect data in a consistent manner, to apply assurance quality control procedures, to provide sustained support to data collection. It's a common scenario where in a burst of energy people get together within the department and come up with a database to collect, to maintain data on, and then there's a lack of follow-through in the long term which undermines the quality and reliability of the data and its usefulness for various applications. So if one is to embark on data collection, there has to be a sustained commitment to support that effort, otherwise a lot of effort could go to very little good effect.

That aside, specific to the question 1A, what types of environmental end-use data would be useful for the CEC to continue to gather, I think as a lead agency under CEQA, the CEC has an opportunity to encourage

developers to, in conjunction with their project planning, to collect certain types of data in a fashion that is consistent with the department's Natural Diversity Database; that's a database maintained by the department and many of you are familiar with, RareFind is the data query and reporting platform through which CNDDB data is used and accessed. It's to everybody's benefit to fill in information gaps, to share information on locations of sensitive resources, rare occurrences, to help inform decisions about project siting. And the more the maps are filled in with information on rare plants, for example, or nest sites and that sort of thing, the less of a chance for unpleasant surprises in the process of project planning and construction. We want to help ensure that the prospects for that happening are reduced over time.

Also, again, project-related data should be collected in a consistent manner across the board. One of the things we're concerned about, many are concerned about, is tracking loss of habitat, type of habitat that's lost, project-related impacts to species in terms of mortality or even nesting attempts, also, tracking mitigations related to projects. Tracking in a consistent manner, securing of habitat of land and maintenance of those lands is mitigation for impacts related to the permitted project. It's become clear in our experience

with the DRECP that we, as a department, speaking for our department, we haven't been very good in even tracking CESA, California Endangered Species Act-related mitigation, and I expect that's probably true for CEQA lead agencies, as well, it's probably a mixed story there.

So one thing I'd like to make a plug in for and acknowledge this is CEC, in helping to fund the vegetation surveys that were completed for the DRECP, that information covers a large area of the deserts of southeastern California, is proven really useful in helping inform decisions about where to focus or concentrate renewable energy development, and that same information will carry over and be useful to other sectors of the economy. So I expect there are similar gaps in that level of information, national vegetation classification system level vegetation information, down to the alliance levels, and that would be useful in other contexts for planning purposes.

Just to let you know, the department does have a large geographic data branch, a number of tools are available to the public, stakeholders, planners. Besides the California Natural Diversity Database, there's VegCAMP which is the Vegetation Classification Mapping Program, that's the program through which the department carried out the vegetation surveys in the desert, for example.

That information is available to all who are interested. There's also -- we do have the Biogeographic Information and Observation System, that's the online query database that can, again, identify sensitive resources. And there are other tools that are available via the Department's website.

But with all that, these tools have to be applied intelligently, in an informed manner. And I think the best way to help ensure that is the human element. We do encourage developers, planners early on in discussions to contact our staff in the regional offices. They're in the best position. They have the institutional knowledge, so to speak, to help flag resource issues in areas that are under contemplation for development, help interpret, help the developers and planners ask the appropriate questions when using these tools that the department maintains.

In the workshop that many of us participated in last year regarding California Condor and Golden Eagle conservation related to renewable energy, many of the stakeholders identified the need for early participation in the process of informing decisions about transmission location planning. Obviously, where transmission goes, projects will follow and I guess visa versa, it's an iterative process, obviously. So the Department ideally

would like to be more involved in those early discussions; again, we're not a decision maker in this case, but we'd like to be in a position as sort of the State's consultant for biological resources to sister agencies to help inform their decisions.

And finally, in discussions about the environmental scoring process, we think it would be effective if we could participate in those discussions between CPUC and CEC, again, to at least help inform decisions about the part of that scoring process that pertains to resources. So it's mainly I pointed out some resources that the Department maintains and makes available for planners, but I'm putting a plug in for consistently and early conferring with the Department to give them an opportunity to provide input on planning decisions.

I think I've pretty much covered what I wanted to cover regarding these questions.

MS. MILLIRON: Thank you. Any questions? We're running a few minutes behind, but I think we have time for one question, at least.

COMMISSIONER MCALLISTER: Thank you very much, that's very helpful.

MS. MILLIRON: Okay, so I'll turn it over to Mike Sintetos of the Bureau of Land Management, who we

collaborate with on the REAT Database in keeping our projects up to date.

MR. SINTETOS: I'll try to get us back on schedule a little and keep it quick.

MS. MILLIRON: Thank you.

MR. SINTETOS: My name is Mike Sintetos. I'm the Renewable Energy Program Manager for the Bureau of Land Management's California State Office here in Sacramento. I want to talk to you a little bit about the project applications on our lands that we manage and the data that we collect, and I'll just touch briefly on some of the land use information that might be useful in terms of procurement process moving forward.

So we manage $14 million acres of public lands in California, about ten million acres in the California desert. We permit a number of uses on those lands and renewable energy is becoming increasingly one of those uses. Currently, we've got 20 solar applications and nine wind development applications on BLM lands within the State of California, and then we've already approved seven projects, seven solar projects and two wind projects, over the last three or four years.

In terms of the data we collect on those projects, and we've been trying to collaborate with CEC to make sure that they have this information, on our public

website we have a list of all the projects that have applications in on our lands, megawatts, size, acreage, location, as well as we also have a GIS database with the actual project footprints in GIS that's available to the public, and we update that monthly. So we try to keep that pretty current.

In addition, the projects that have actually begun the program process, we have extensive information. As we enter our environmental review process, we of course publish extensive information in terms of the potential environmental impacts of the projects. We generally do have information from the developers in terms of the status of their PPA and Interconnect Agreement, and that kind of thing, but again that's just from conversations with the developers -- and that's all on our website, so at least I can provide you the link to that if that would be useful.

In terms of -- oh, well, I guess I was also going to mention, Roger, you're talking about post-permitting, making sure that we're still keeping track of what's going on with some of these projects. We do track the projects that we've approved and we have construction updates and, you know, online dates and things like that that we can share if that's useful going forward.

In terms of land use information and

environmental information that can be useful in some of these procurement processes that we're talking about, I'm very encouraged to hear that the DRECP is already a big part of that. I was just going to add that, on top of the DRECP, if we're looking at little bit more broadly than the California Desert, the BLM does have a Programmatic Environmental Impact Statement for solar energy specifically that covers the six western states, including California. And so we already have decisions made on public lands that are available, or unavailable for solar energy development across the west. I would say that's not at the level of granularity that we're collecting data for, for the DRECP, which makes the DRECP more valuable, but it is something that can be useful when we're looking west wide in terms of availability of lands.

The one thing that I just wanted to echo on the DRECP that I think several others have already said is that -- I think Roger used the phrase -- it's a snapshot. So the six alternatives that were presented in December were a snapshot at that time, and so when the draft EIS comes out, there will be a preferred alternative identified by the agencies involved, alternatives may have shifted a little bit, so I would just encourage the PUC to continue to pay attention to that process and continue to be involved. All of those development focus areas aren't

necessarily equal and some may have greater environmental impacts than others. So just be aware of how that process is evolving and the potential outcomes. And I'll stop there.

MS. MILLIRON: Thank you. Questions? Okay, again, we're sticking to the agenda order, so we'll kind of move over to this side of the table and pass it over to Paul McCarthy, who is here from Los Angeles County.

MR. MCCARTHY: Yes, thank you. What I think we are alluding to here, but nobody has come out and said it outright, is that we need a two-way street here in which we at the local government, for example in L.A. County we're in communication with Roger on a regular basis, telling him about what projects are being filed, the name of the project, we do have a project number sign because we have the same problem Roger has, we have two projects with the same name in the county, and some, they do change ownerships, and they change names, and so we are always having to update our computer database in that regard. And we're happy to help the State by sharing that information. So we've got the acreage, we've got the megawatts, certainly of course the location, the name of the owner, the name of the application, and if it's in a significant ecological area that would be noted, and that might be a red flag for Fish & Game to take a look at that

case. So we're giving data back to the State in that regard on an ongoing basis.

Just alluding to Commissioner Weisenmiller, just a few totals while you were raising some questions there, we've had a total of 40 projects filed in the unincorporated area of Los Angeles County, so that does not include the Cities of Palmdale and Lancaster. But in the unincorporated area, we had 40 cases filed. We've only had five approved thus far. Ten cases have been withdrawn and two have been denied. We have 23 pending. So that's an approval rate of 13 percent, which is considerably less than the 40 percent that you discussed earlier.

One of the problems that I see is that, of course, we're dealing with an outdated countywide General Plan which was adopted in 1980, long before anybody talked about renewable energy. We have a local plan in the Antelope Valley which was adopted in 1984, long before anyone was talking about renewable energy. And so there's a fair number of people out there, living out there, who have lived their lives and are getting close to retirement that are saying, "This wasn't described to me as a likely development scenario, there was no mention of it at all in the community plans at that time," and they feel there's been a double cross.

COMMISSIONER MCALLISTER: Just to -- one quick question -- so of those 40 projects or so, how many of them -- so are the approved ones the ones in the queue? Or which ones of those are in the database, that 326 that Roger was talking about?

MR. MCCARTHY: Well, Roger has the number of all -- they come to a total of 482 megawatts, 4,177 acres of the five approved ones.

COMMISSIONER MCALLISTER: Well, so when they get approved, then you tell Roger about it, or --

MR. MCCARTHY: Oh, yeah.

COMMISSIONER MCALLISTER: -- but not before that. So he's got five, but he doesn't have the 40.

MR. MCCARTHY: Well, he knows about the cases that have been filed, yes.

COMMISSIONER MCALLISTER: Okay, great.

MR. MCCARTHY: And we update them as this goes on. And we plot them -- we're giving him the GPS coordinates and we plot them on our map, and so we can locate them easily and give the public a sense of what the scope of the situation is.

What I think the public would like, and so now we're trying to play catch-up, where we're very appreciative of the grants that have been given by the Energy Commission through the DRECP, it's going to be

tremendously helpful, and we're trying to play catch-up now with the Antelope Valley General Plan Update, and we're also doing the countywide General Plan update, particularly in the AV plan update to address some of these energy issues, to set some rules of the road, etc. And so, if that had been on the books five years ago, or 10 or 15 years ago, it would have been very helpful, but it's not and we're playing catch-up.

One issue that, again, we were talking about maybe putting up red flags for developers, the industry, consistently the problem across the Antelope Valley and L.A. County is a shortage of water. All of the projects that have been approved and have gone to the construction stage, and we have several that are near completion now, have used much more water than was estimated in the original EIRs, and the area is going through a water adjudication, it's in court being adjudicated, so this is a very very difficult issue to surmount in the EIR. And so, just as Bill mentioned about people need to be advised early on about certain issues that might be of concern to Fish and Wildlife, I think the Public Utilities Commission and the Energy Commission could red flag this and let developers know this is going to be something that's very very difficult for you to deal with.

It was amazing, just last week I was out in the

Little Rock area of the Antelope Valley and the California Department of Water Resources has a pumping station there for the aqueduct, and they want to install 70 acres of photovoltaic on their site; they don't have the water to service that facility, even though they've got this huge aqueduct going right next to it, because that water hasn't been treated properly as yet, the treatment plants are further downstream. So they have to bring the water in on a truck to deal with the project. So when the Department of Water Resources doesn't have enough water, you know we have a problem. So keep that in mind, and if you can red flag that for the future developers.

In terms of also what we would like is -- and I'm glad BLM mentioned about DRECP as being a picture of a moment in time -- what we need are updates; in other words, you begin with X number of acres in the desert terrain, okay, now 5,000 has been consumed for this project, 1,000 with that project, and it's constantly being updated. There are two areas -- I've just alluded to the first one, the general plan, the overview that we deal with in the planning agencies, and then we deal with these issues at the local level, a case-by-case level, I should say, when the Applicant comes in, and there's another EIR at that time, usually. And there are two areas of the EIR in which the kind of data that you could

provide us would be very very helpful, one is with regard to cumulative impacts. Citizens will come in and say, "I'm worried about the Mojave Desert. What's the big picture? How much damage has been done? How much more can the desert accommodate?" So by constantly updating the DRECP data, you would do us and every Applicant an enormous assistance in terms of developing their individual project EIRs. I think it's beyond the scope of what any individual Applicant could handle; the DRECP is unique in that regard, they're the only show in town. And it would be very very useful data.

Also, there are going to be projects in which we have an EIR that concludes there are significant impacts that cannot be mitigated to levels of less than significance, and therefore we have to come up with a statement of overriding considerations. Again, the kind of data that could be provided to us about the need for energy, where are we with regard to our energy demand and our energy supply and what we need, that is what we really need in the statement of overriding considerations. Currently, we do rely heavily on the State wants to have 33 percent renewable by 2020, but I'd like to get a lot more meat in there and a lot more data, and that would be very very helpful.

So the two kinds of data, you've got the DRECP,

maybe bio-related, environmental-related data, and then the nitty gritty about megawatts, how much -- what our capabilities are and what we're going to need in the future. With regard to out-of-state data, we obviously don't communicate with agencies out-of-state on a regular basis. Our main concern that I can see with out-of-state projects would be whether or not they might want to bring additional transmission lines through our jurisdiction and, if that's going to be the case, we'd like to know about it as soon as possible because the transmission lines, of course, have been a major issue.

We have not only the Edison Tehachapi line coming through, but we also have the Barren Ridge from the Department of Water and Power, LADWP. And so we worked with the people, the public out there on each of those. And the Barren Ridge is brand new, there wasn't a whole lot of transmission line there before, but the Tehachapi in some respects is bigger, it's higher, and so on. And so there were changes, a lot of changes in the visual impacts that upset some people, and we had quite a bit of feedback from the public in trying to explain to them we don't approve or deny these projects, and that's not what they wanted to hear.

So again, that gets back to, if we could give the public a sense, I think, when we're working on the AV

update, when we're working on and talking to them about Tehachapi, they want to know how much more of this is there coming, how many more transmission lines are coming? How many more acres of solar do you need here in LA County? And that's, I think, the real challenge for the State is to try to put all this data together and then say, "Well, Kern County, we're probably going to need X number of acres, L.A. County X number of acres," that's really difficult. But it would be enormously helpful because I think we could then possibly reassure some people that, "No, the whole AV will not be photovoltaic from one end to the other." That's what they fear, that's what they see in their mind in many instances. I'd like to be able to tell them there's a finite limit and here's approximately where that finite limit is.

COMMISSIONER DOUGLAS: You know, just a brief comment, that's a really interesting point, Paul. I mean, you raised a number of interesting points, but in terms of the planning assumptions, I think that there is an opportunity to take something like the DRECP and step down planning assumptions, working with local governments so that you're looking with us at the statewide target, but you're saying very specifically, okay, well, so the proportion of that in LA County might be this many megawatts, and let's go about seeing how we can facilitate

areas for, you know, at least as many megawatts and provide for that in the General Plan, the planning documents, understanding of course that, as you all do very well because of the amount of permitting that you do of renewable energy projects, that not every site pans out, and in areas with a high amount of parcelization, for example, you really do need more opportunities rather than fewer for developers to negotiate with land owners and reach agreements on what sites might actually be developed. But even within that context, with that needed flexibility, I think it is helpful to have planning assumptions and targets.

MR. MCCARTHY: Yes.

MS. MILLIRON: Thank you. Our next panelist, we're going to go to the phone, is Byron Woertz from Western Electricity Coordinating Council. So if we can unmute the line? Thank you.

MR. WOERTZ: Great. Thanks very much. I think I'm unmuted. Is everybody hearing me okay?

MS. MILLIRON: Yes, thank you.

MR. WOERTZ: Great. Thanks for letting me join the discussion here. I'd like to give you a brief overview of some of the things that are going on at WECC because there's some very interesting, I think, databases regarding environmental data, as well as some work is

being done with renewable resources that will help inform the discussion.

Let me begin by reminding everybody that WECC does work at the planning level; our goal is to inform and facilitate activities at the siting level. There's no desire to replace any siting level project reviews, that's not what we're trying to do. And our focus is on the Western Interconnection as a whole. Many of our activities do get into state level reviews, but for the most part we are looking at the Western Interconnection as a whole, the Western U.S. plus Alberta, British Columbia, and a quarter of Mexico.

First of all, WECC has developed a set of preferred environmental and cultural data for use in transmission planning. The data is available on the WECC website, it's publicly available data, and it includes Federal, State, Provincial, Native American, and private sources, with over 100 separate data sources. Some examples of where we get the data, we use U.S. Fish and Wildlife Service's Wilderness Area data, International Historic Trail data, Wild and Scenic Riverways, a whole host of individual data sources to inform decisions that are made at the planning level for transmission planning. One of the main uses of this data, in addition to just making it available publicly so that anybody interested in

seeing this can go to the website and get the data, one of the main uses within WECC is to assign risk classification designations for each affected land area within the Western Interconnection.

We contracted a major piece of work a couple of years ago to prepare a report entitled "Environmental Recommendations for Transmission Planning," and one of the main outcomes of this was a four-level, four-tiered risk classification system similar to what one of the previous speakers mentioned, where the lowest numbers assigned to, say, the preferred areas for development, the risk classification one is the lowest risk of encountering an environmental and cultural issues. This is largely existing transmission corridors or rights of way, the thinking being that if there's already something in the ground, there's probably less risk associated with using that same corridor right of way if you're able to do that because the land is already disturbed.

Risk classification 2 is low to moderate risk of environmental or cultural issues. Some mitigation may be required for a project that was to traverse a Category 2 area. Risk Classification 3 is a high risk of environmental and cultural issues, and somebody who tried to place a project here should expect that there's going to be some mitigation required.

Finally, we get to Risk Classification 4, which are exclusionary, as where transmission development would be precluded by legislative and/or regulatory prohibition. For example, you would not try to site transmission going through Yosemite National Park, it just would not work.

The data that we use for informing these decisions, the environmental and cultural databases, it's updated biannually through the TEPPC open season process, you may have heard of TEPPC, one of the committees of WECC, the Transmission Expansion Planning Policy Committee. Every two years it requests, or it allows stakeholders to request studies on the transmission system that we amended the process this last time to also request updates to environmental data. And that could be new data sources, it could be revised data.

This leads up to the WECC 2013 Interconnection-Wide Transmission Plan, which is currently under development, that's the culmination of studies that are completed during the two-year planning cycle, in this case it's the 2011-2012 study cycle. Notably, in this study cycle we're performing 20-year study cases and these are capital expansion reviews of a 20-year planning horizon, where you're trying to answer the question under certain scenarios what transmission expansion would be needed to meet or to connect the generation that would be required

to meet load. We're currently working through those now and, in fact, the set of 20-year study results will be released tomorrow on the WECC website. Each of the 20-year study case reports will include a Generation Plan and a Transmission Plan. The Generation Plan will indicate what mix of generation resources are needed to meet load 20 years out, in this case 2032, as well as the Transmission Plan for the transmission expansion that would be required to meet the needs of that generation portfolio.

In the studies that we do, generation selection is based on the levelized cost of energy, and it also includes Grid costs so that we can accommodate and recognize that two comparable projects that could be needed for the generation mix would have different overall costs if one was located near a load center, and one was remote. All of those factors will be described in the 20-year study case reports.

Another, what I think is kind of an exciting feature of the studies this time around when we're using our new what we refer to as the Long Term Planning Tool, is the ability to bend lines according to environmental contours. When the tool determines what transmission is needed, it produces straight lines to connect one point to another; however, we also have added to the tool the

environmental data that I referred to earlier so that we can create contours showing the more and less preferred environmental areas, and at least figuratively bend the line so that they would conform to the lower environmental risk areas, and we would be able to produce a transmission plan that would be as environmentally friendly as possible.

Some of the current things we're working on, we're developing a methodology for representing cultural resource data, recognizing that that's important, as well as environmental data. We're expanding our Canadian data resources. We're also developing a data door to make current environmental data more accessible and easier to use for any stakeholder who wants to see what this environmental data looks like for a specific geographic area.

And finally, we're continuing to evaluate environmental and mitigation costs, recognizing that those are going to be an important factor in making decisions about transmission expansion. And to the extent that we have reliable data about what mitigation costs might be according to certain land areas, that gives us additional flexibility for optimizing corridors that might be recommended in a given study case.

One of the questions related to renewable energy

being available, I suspect that most people are aware of the publicly available data available through WREGIS, which is now run by WECC, so I won't go into a lot of detail on that. But let me pause at this point and see if there are any questions I can address about any of the topics that I've covered thus far.

MS. MILLIRON: Okay, I'm not getting any questions at this point, so I just want to thank Byron for joining us. We'll go ahead and swiftly move on so we get through everyone. Next up is Carl Zichella and he's also representing WECC, specifically the Environmental Data Task Force.

MR. ZICHELLA: Yes, and I work for the Natural Resources Defense Council, so I am a member, I'm the Chairman of the Environmental Data Task Force. I'm also an environmental stakeholder on the Transmission Expansion Planning and Policy Committee. I'll do my best not to duplicate what Byron said, but I wanted to give you, as was requested, sort of an environmental group's perspective on this work, its importance, what needs to continue.

First of all, thank you for inviting me. What a pleasure to be here at Janea's first meeting, Commissioner Scott, welcome. It's great to have you back, and thank you for the terrific service you gave to your country at

the Department of the Interior, I can't tell you how grateful we are and what a difference you made for California and for the rest of the country, so thank you very much for that. And what a great Board you're joining, very very pleased to see it, and thank you to Governor Brown for appointing you. So let me just get that out of the way to begin with --

COMMISSIONER MCALLISTER: I think that will do, Carl, thanks a lot, we really appreciate the -- [Laughter]

MR. ZICHELLA: Andrew and I are old friends, so I have to lay it on thick, I mean, she's new, you know.

I wanted to just basically say, you know, one of the reasons that this is so important, these data and getting them correct, and the application of them, is that the early use of this environmental and cultural data, as Byron mentioned, using geospatial information helps you prioritize decisions you're making about renewable energy investments and transmission. We need to think about those things together, not separately. They're too siloed and compartmentalized. Good planning means you pick the good resource areas with the low environmental conflicts, and you can then rationalize transmission investments to serve them, to reward people for locating there. If you want to get people to go to these areas, they have to have transmission planned for them, and not just for a limited

scale. The Tehachapi example, I think, is a great example of this kind of planning, building for the future, scaling a transmission to meet not just the needs of that moment, but future needs. And it's been very successful in doing that and getting a lot of wind into our system very quickly.

From NRDC's perspective, the main goals of doing this is of course to reduce CO_2 emissions; we're confronted with climate change and to reduce the cost of renewable generation and integration, and increase reliability while decreasing the footprint of the infrastructure, we need to accomplish that goal, and I think Paul spoke to public concerns about that quite well.

We also want to increase the speed of getting these resources into the system and that includes closing the gap, which we'll talk about this afternoon for generation in transmission, so those are sort of our operating goals on this and the carbon reduction goal, as we've often looked at it, is the IPPC goal of 80 percent reduction in CO_2 emissions by the middle of the century. California is doing a wonderful leadership job. I think maybe our efforts, despite the enhanced coordination we've been hearing about today, is still a little too balkanized, frankly, but I think we've made great strides to improve the way we approach this and I commend

everybody for the work that's gone into that.

With regard to the questions, in terms of types of environmental use data that would be useful, the Environmental Data Task Force work that Byron just described, I think, for out-of-state resources in particular -- and also includes California, by the way -- particularly helpful there. The Risk Classifications and the approach should look pretty familiar, it's very similar to what we did in RETI, and very similar to what's being done in the DRECP.

I think we also have the chance to utilize new information that's coming forward. One of the big problems as we learned in the DRECP with regard to the wildlife data is they're not very consistent, not very helpful, we had to go a lot deeper on that. And one of the things we've learned regionally is that states don't always treat the same resources the same way at the borders of their states, so trying to get some conformity in how wildlife species are managed and what the requirements are in habitat treatments, things like sage grass which occur in California, but also occur in a number of other states in the west, how we're going to deal with the habitat needs of these species. And there's an effort underway at the Western Governors Association called Crucial Habitat Assessment Tool, which is being

done for each of the Western States, which will be done to help bring into conformance some of the assumptions that are being made about wildlife and habitat needs across the region. So there are some data there that would be very useful, I think, to the Energy Commission and to California decision makers as we look at generation that is not just in-state, but is originating elsewhere.

I think the big gaps so far that I've heard this morning has been in the treatment of cultural resources. I will just remind folks that during RETI we did look at cultural resources when we did the environmental rankings of transmission lines, Roger will remember this, we worked with BLM and Native American Tribes. It's very touchy, the data are not consistent across the West, and even in-state, what we had was the ability -- the need, rather -- to keep some of this information confidential, you don't want to make individual locations public, you don't want people going in there and looting them, so just as you don't want to reveal the last unknown occurrence of an endangered species, you don't want to reveal particularly rich cultural sites too explicitly, so we had to adjust for that. We're struggling with that now at WECC and trying to do that across the West, working again with BLM and the Historic Preservation offices, it's not ready yet, it will be ready, as Byron mentioned, and so I just want

to call it out right now as something to be alert to and aware of as an approach that could be really value added for addressing cultural resource issues, especially in the Mojave where we've run into situations where hundreds of millions of dollars in loan guarantees have been put at risk because of conflicts with cultural resources. Very important.

Other information for out-of-state projects that's out there, there is State level information that's been coming together as a result of the chat process that I mentioned earlier, there are data coming in from the Environmental Impact Statements, some of the generation projects such as Chokecherry and Sierra Madre -- I see David Smith from TransWest and those projects is in the room, he may want to comment later -- but those data will really be helpful in people being able to judge these projects on a somewhat level playing field to projects that we're looking at in-state. And a lot of this data is publicly available; that, I think, is a useful thing, in fact, WECC is going out of its way to really make this a user-friendly process, as much as you can when you're dealing with such complex information, to have a data reader available, I think, will be a very helpful and useful tool that the State can access, it won't look that different than the kind of reader that was demonstrated

earlier by Roger using Google Earth, I think.

One of the issues we've come into difficulty with at some of the private sources of information are not at the same resolution and scale that many of the states or the Federal Government utilized. So we've had to adjust the sizes of polygons and adjust some of the data to bring them into conformance. It's a minor thing to people who are really good at this, but it's something that you've got to be really aware of. We've been using NatureServe Wildlife Data while we're waiting for the states to complete the crucial habitat assessment tool information and we are integrating those data into our database as they become available, but as you might imagine, this is a complicated effort, it involves some negotiation between and amongst states, and it will be the best information that we can get, and that's the standard, I think, that we are really trying to uphold in the regional work here, and very similar to what we've committed to do here in California in constantly upgrading the information as it becomes available.

One of the things I wanted to mention, it's an environmental piece of data, but it's not a piece of data in the sense that it's geospatial, and that is -- it is and it isn't -- but what I'm referring to are the load profiles, generation shapes of the resources out-of-state.

One of the things I think we need to consider as we're talking about out-of-state resources and their value to California is the way that they can provide uncorrelated variability into the system and reduce the amount of reserves that are needed, enable us to get more out of our own renewable energy resources with less need for balancing resources, a lot of information has come forward on this recently, University of Wyoming has completed two important studies now, a correlation study with California, wind resources in Colorado, wind resources that just came out the past week, and we'll see others, as well. The National Renewable Energy Laboratory has released a major study called "Renewable Electricity Futures" that posits the value of geographic diversity -- and I will add temporal diversity -- across the region's renewable energy resources. We can make decisions about how much of the desert we choose to develop if we're also using the value of these resources in terms of when they're operating, what the capacity factors they're offering are, and how they match our own resources. They can help us reduce our own footprint and actually help develop some of the better resource areas in North America, quite honestly.

If we get too hung up on 33 percent, we'll never do it. I think we are, as Governor Brown has said, that

should be a floor, not a ceiling, and I think we are proceeding within the environmental community, many of us, to look at ways to make our resources more diverse geographically, temporally, and on the landscape. That does require transmission, it does require the kind of analysis that we're building at WECC that Byron described, to try to do that as sensitively as possible. And very importantly, it mirrors California's priorities as expressed in the Garamendi Principles, but try to utilize the best and the existing infrastructure to the greatest extent possible before you build new rights of way, and then locate the new rights of way that you do need as sensitively as possible.

And I'm really glad to see in my position on TEPPC how much of the new transmission is utilizing existing rights of ways. I realize I'm probably over, there's a lot of information here, but one thing I wanted to say, the updating function that Byron described using an open season, in terms of what might be valuable within a database I would say a column on when the data were last updated would be a useful field, and having a regular function where people can submit new information. I think this is going to be critically important as we continue to see climate change impacts on the landscape. Here in California we are monitoring the changes, we have done

this through the PIER process and other important private entities, the Point Reyes Bird Observatory, for example, has been doing a lot of research on changing behavior in migratory animals. We've been seeing prey species hatching earlier, migratory species having to arrive sooner. It's changing a lot of things on the landscape that we're going to have to pay attention to. It's one of the things that is a genius of the DRECP is that it's considering large-scale conservation at the same time, simultaneously, with the large-scale renewable energy development, and we need to slow climate change. I think that's a trend that we're starting to see.

And finally, mitigation costs are not insignificant. This is maybe more for the PUC colleagues that are here. At WECC, we're looking at how we can estimate these mitigation costs and consider them as part of the capital costs, at least of transmission resources. I traded messages with Terry O'Brien, who used to work for the Energy Commission here as Licensing Director, and Terry has been doing work on estimating mitigation costs for generation projects, as well. These are not insignificant, the mitigation costs for the Sunrise Power Link were more per mile than it usually costs to build transmission outside of California, $1.6 million a mile according to Sempra is what their mitigation tab was. A

lot of that depends on how you define mitigation, which is not a consistent thing, and that's been one of the biggest problems we've had is trying to decide what does everybody call them, where do they put them in their spreadsheets when they're calculating their capital costs? Is it just land acquisition, or is it the management of these areas, the endowments that are being created for these long linear projects, etc.? It's a difficult task, we're wrestling with it right now, but there are very significant costs associated with this as we've seen in both generation and transmission projects here in California. I'll stop there.

There's one last thing I will say is I've written a white paper that I will submit for the record for you all, it's part of an Energy Foundation project to identify policy objectives to meet the NREL 80 Percent Penetration Study by 2050, and it goes to many of the things I've talked about here in much greater detail, so I won't go into the detail now, but I'll let you all see that, it's a pre-publication draft right now, it will be part of like I think a seven or eight chapter paper that includes things like business models and Grid integration and other such issues, too.

MS. MILLIRON: Thank you. We have about 10 minutes left on the panel, so we'll have to keep our last

two panelists, sorry we've kind of pushed you on the time a little bit, but there should be time for five minutes each, and then maybe we can cut into the public comments for a couple of minutes to wrap up any comments on --

COMMISSIONER MCALLISTER: Do we have any public comments that have been submitted already?

MS. MILLIRON: I know of one. So maybe we have some flexibility there.

COMMISSIONER MCALLISTER: Okay, so we need to do the public comment as close to 12:15 as we can just to make sure that we respect the timeframe that they're calling in for.

MS. MILLIRON: Thank you. So Erica Brand, the Nature Conservancy.

MS. BRAND: Good morning. Thank you for having me here. My name is Erica Brand and I'm Project Director of the California Renewable Energy Initiative at the Nature Conservancy. At the Nature Conservancy we believe there's a tremendous opportunity right now. The State has invested significantly in the land use planning and collection of regional environmental data and, similarly, renewable energy developers invest in collecting site-specific and regional data. This information collectively provides a wealth of knowledge that can inform decisions and assumptions for energy planning.

I'll start with some feedback on the Renewable Energy Project Database. Our comments on the data that the CEC should collect are based on our experience in applying scientific analyses and landscape-scale planning to represent using geographic information systems, how to meet multiple goals including conservation and energy development on the ground. We work in all 50 states, so we have geographic information available throughout the west.

Based on our experience, we have several recommendations. I'll cover some examples, but the rest will be submitted in comments after the workshop. So I'm glad to hear from Roger that there is a connection between the geospatial information on the projects in the database. Data that is linked to geospatial context is most valuable for informing a broad suite of decisions and connecting various planning efforts.

We strongly recommend that the project information continue to be applied to geospatial information, which will allow the CEC to have a geospatial interface to its database and allow data to be used by a broad spectrum of decision makers and stakeholders. However, to accomplish this, the Commission needs accurate coordinates or shape files from proposed and existing projects and a process to check the quality of those data.

Of what the CEC already collects, the information that we most frequently use includes project size, capacity and the acreage, both technology and permitting status, and the CEC staff should continue to collect and share this information. I think it would be very valuable if there was a centralized database. It would be helpful to know PPA status, transmission interconnection status, and project commercial operation date consistently across the state. As a stakeholder, there are many databases out there that we go to in order to find information about projects and trying to make sure that there's consistency across them can be a challenge. So I like the comments on a common project number and having this database be accessible to all stakeholders.

We think the environmental permit field should track the status of all wildlife permits, the permit is a critical path to project development, and if not obtained represent a fatal flaw. And then I concur with what Paul bright up, we think there should be fields to capture water source and use related to a project. This data is important to assessing impacts from groundwater use and assessing greenhouse gas reduction. For example, if the water is trekked in for a large distance. And I also think a centralized database will be helpful to tracking and assessing cumulative impacts of projects.

So now I'm going to transition into the CPUC scenario planning, but I want to continue with the idea of using spatial data in the decision support tools for energy planning.

So over the last five years, significant investment has gone into land use planning and renewable energy planning; both the BLM Solar PEIS and the collective progress we've made on DRECP are both examples. I think an important next step is figuring out how we maximize the benefits of these investments and reflect these integrated planning efforts appropriately and with the right weighting systems into renewable energy planning processes statewide.

So we believe that all of the renewable energy and infrastructure planning processes at the CEC, CPUC, and CAISO should include the best available information, which includes environmental data in the decision making. There's a few reasons why this is valuable, and I'll touch on them quickly, the first is to leverage and incentivize the areas that energy and conservation planning have identified as renewable energy zones. As we've heard, one of the strongest incentives for development in zones is investment and transmission infrastructure to these locations, so connecting these planning efforts are really important to delivering results. The second is to make

the most accurate assumptions possible given the current state of knowledge and these assumptions impact planning decisions. And the third is that this information can provide agencies with early disclosure about potential risks, both high and low, that may impact viability of projects or portfolios. So we've already seen the Commission is taking a step towards integrating land use planning and energy planning by putting the DRECP into the CPUC scenarios, and we strongly support this decision. However, the question has been raised outside of the DRECP, what are some possible data sources that could be used, and so I'll speak to that now.

The data that I'm going to cover now are just some high level examples, and we'll put the rest into our comments. And the objectives for incorporating this data are to reflect areas where renewable energy development is precluded by law or policy, or areas where environmental constraints may impact portfolio viability. So, some of the categories are lands with a conservation status, so lands with conservation easements or other protections. I can think of the CESA mitigation falling in this category that Bill brought up earlier. Regulated resource locations, so areas such as designated critical habitat units, core recovery areas, and HCP and CCP reserve designs, both in-state and out-of-state. And then also

areas with indicators of high project risk, their existing peer reviewed scientific analyses that can be used to identify areas that present a high risk to renewable energy development based on unique or exceptional ecological values at certain locations. While these data may not preclude development, they may indicate where projects will be delayed, may face a higher fail rate, or may require significantly more agency staff time to address permitting concerns. So these types of data can be obtained by working with Federal and State agencies, local governments, nonprofit conservation organizations, and universities.

And so my concluding thoughts are related to process improvement -- I'm kind of a process junkie, so I'm really excited about the work that's being done. The methodology for the DRECP score, we have some reservations about a 50 out of 100 score to projects outside of the DRECP and outside of California, so we'd be interested in discussing in a stakeholder forum how we might incorporate other environmental data that's available outside of this region in order to score the projects.

And from there, the DRECP score, we're also interested in discussing how this is integrated into CPUC scenario planning. As I understand now, it seems like the base case is typically a commercial interest portfolio

being chosen, and DRECP fits into the environmental score which is about a 10 percent weight that we saw, if I understand correctly; and I think we need to look at DRECP a little bit differently, it's an area where we have both the energy agencies in the state and the trash resource agencies coming together in preferred areas for development, which will lead to high potential for low risk permitting in those areas. And so I think if we're trying to look for portfolios that represent the most likely path of renewable energy development in the future, a commercial interest portfolio that has a DRECP score with a higher weight might be a better interpretation of a successful path forward for development, so interested in participating in that stakeholder process and glad that that's being discussed.

And to close quickly, thank you for hosting today's workshop. We're really encouraged by the coordination between the CEC, CPUC and CAISO on addressing not only environmental data, but how it's integrated into energy planning. Thanks.

MS. MILLIRON: Thank you.

COMMISSIONER MCALLISTER: Thank you very much, Ms. Brand. Should we stop and see if there's anybody on the WebEx that has -- no questions over there? Okay, great. And then we have how many public comments? One or

two? Three, okay. So all of those are in the room. If they're okay with letting our final speaker go, and then getting to public comment, that would be great just to have the continuity. Is that all right? Great, let's do it that way. Thank you very much.

MS. ROBIN: Thank you very much. Can you hear me? Hello. My name is Renee Robin and I'm the Director of Permitting and the Counsel for Regulatory Affairs at SunPower Corporation. I've been practicing land use, environmental law, and renewable energy law for about 28 years now. I started specializing in renewable energy about 10 years ago and SunPower, as many of you know, is a vertically integrated company, we manufacture our own cells, our own panels, we develop our own projects, we do residential, commercial, rooftop projects, as well as ground mounted projects, and we do large-scale utility solar globally.

I've been involved in the active permitting of about 3,000 megawatts of solar in the last four years, about 1,500 of those are approved and either developed, constructed, or under construction here in California now, and it's been a pretty amazing journey. I would like to just really say I appreciate the privilege of being the one industry person speaking this morning, and I hope I can do a service to my other colleagues in the renewable

energy industry in just letting you know some of the things that we're experiencing in working with the databases and in how we're participating in this process.

And everything that Carl said with respect to Janea, I would also ditto. Commissioner, welcome.

I think that we take very seriously the concept of "Smart from the Start," we don't always do it perfectly, but when we begin that process, there are three main things that we look at, and none of them have to do with environmental factors as far as species protection and so on. What we look at is: what is the solar insulation as a good place for us to generate power? How close is it to transmission with capacity? This is a primary number two factor for us. And the third is, is there an offtaker for this power? And unless we can answer those three questions, then we get to "Smart from the Start" in terms of our siting. And when we look at siting, from SunPower's perspective, we take very seriously our mission statement, and I know many people think it's very cliché, but we want to change the way the world is powered, and we want to do it as sustainably as possible. So we start off by looking for disturbed sites that ideally do not have biological constraints or cultural constraints, if possible. That's a dream statement, it doesn't exist, but we try. And how we go

about assessing that is by using the materials that we've been talking about this morning. The first place is we go is CNDDB, we rely on the California Department of Fish and Game and the U.S. Fish and Wildlife Service so heavily, and we are so appreciative of the information that they have to share with us, it's essential for us. We do not want to build projects that are not in harmony with the environment that they're in. We look at it from our technology side: can we make sure that we're generating power that doesn't have hazardous materials, and doesn't use water, and all kinds of others things, but we also want to make sure that the way that we build it and where we build it is going to be making use of state-of-the-art geospatial information so that we can move forward as quickly as possible with as least cost as possible, and with as many partners as possible.

A lot of the information that we find very important is not -- it's coming together in ways that I think we all should be proud of in this DRECP process because part of the State-Federal partnership, the work with BLM and Department of Fish and Wildlife, but also that we've learned a lot about what we don't know. One of the things that I would say is that things like farmland mapping has become critical for the renewable energy industry in California. We need to make sure that we're

also not harming one constituency at the expense of another. And so this is something that I think that we're starting to learn very quickly when we did the DRECP mapping and we started looking at the different layers of different -- and I would call them constraints or interests -- and was very disturbed at the first meeting when they put up all the layers and said "these are the different conflict layers" because they aren't necessarily in conflict, and we have to balance them and weigh them. But what we didn't have was the same level of specificity for, for example, what is prime farmland, or what is under a Williamson Act contract, or what is part of a certain California economic priority and policy for farmland preservation with species preservation and avoidance, that so many have been working on for several years prior, so we have very detailed layers and information about biological constraints, but we have other interests that are coming up that are very important to the State. So farmland is a big one that we're looking at.

Water supply, water quality, and jurisdictional waters, these kinds of information are not necessarily in the same place where the other biological information is, and sometimes those layers of information are not compatible from a mapping perspective, so I would really encourage us to try and put those things together because,

when we go in to try and get a permit for a project, we're being asked what is the groundwater basin like that you're in, how much water are you going to use, where is it going to come from, is it going to affect adjacent property owners, all of those kinds of things. So water information is something that we haven't touched on as much in our mapping, but I think it's really important, especially if you're moving out of the California desert. And I think that's the other thing that I would say, is that the DRECP process is looking at this 25 million acres from Kern County to the California Border, and we have these DFAs that are now identified, but I guess the question that's being posed to me and I'm responding is, "Is this where industry is going to site solar going forward?" And the answer is not really. I'm looking at where those zones are and I'm looking at where our company is focusing our efforts and where others are, and those are either areas that have already been utilized and are under application, or there is not transmission to those locations at this time, and it's not clear how long it will take to get transmission with capacity to those locations. So we don't want to call them zones to nowhere, we want them to be zones to somewhere, and we want to try and help make that happen. I think that we learned how serious this problem was in the tail months of

the PEIS process and as we moved into the DRECP, and we're getting to the point now where we're ready to try and solve that problem and, lo and behold, we're in a plateau when it comes to the renewable energy industry and the current procurement situation for the state. If we are at 33 percent and we don't know what's going to happen except for adjustments of fall-out, what does this mean about -- even if there was available capacity, is there an available offtaker? Do we have a procurement policy that can help move this forward, those who have invested all this time and money into deciding where we would like to see these projects occur? How do we make this possible? So I guess one of the things I would say is that we need to think outside the box about timing of transmission and who is building it and how we're funding it, and that's a much bigger question than what we're here for this morning, but I would say as we look at our data layers and where we want to put solar in California beyond 33 percent, we need to match it up very quickly where the next capacity is going to be, or there simply won't be economically feasible industry to make it happen. Let me just quickly look at my notes here and see if there's anything I haven't yet touched on.

I guess with the other mapping things that we've learned in the DRECP, the issue of slope and insulation

that was addressed in the Federal PEIS was not something we could correct at the last minute, but we hoped that in the DRECP, we will not have the same kinds of constraints because photovoltaic solar does not have the same insulation and siding limitations that solar thermal does, and we want to make sure that the DFAs accommodate for the flexibility of PV.

The second thing I would say is that 84 percent of the DFAs in the DRECP is on private land, and that's not to minimize how important it is, or what's happening with BLM in our public lands, those may be the ones that go forward first, but with 84 percent on private lands, that means that the jurisdiction is in our counties and that we need to really look at what's in County General Plans, what's in zonings, what's in parcelization. And that's going to be really essential information if we're going to make the DFAs work in the DRECP. I'll stop there and hopefully I can answer any questions. Thanks.

MS. KOROSEC: All right, if there are no questions for the panelists, we will move on to public comment. I have three cards, but other people can speak, you don't have to put in a card. First is David Smith, Power Company of Wyoming.

MR. SMITH: Thank you. Thank you, Commissioners and everyone else. My name is David Smith, representing

Power Company of Wyoming. I appreciate today's two workshops where we're talking about generation in the morning and transmission in the afternoon. And I'll limit my comments to the question about environmental data for planning.

I think one of the major questions that should be considered is at what point is different environmental data important in the planning process. I saw on the CPUC that they looked at both permitting and environmental data. I think that, as one develops a project, that once one has got the permits, it has kind of gone through the evaluation of the environmental piece to the point that you could say that it's de-risked from an environmental or permitting standpoint.

I think that in the CPUC, the planning that they're looking at, it was permit and environmental. When you look at the permits, it's whether an application was filed or not, and that's not really the same as whether a permit has been granted or not. In the case -- my colleague just spoke about the business model applied about taking a look at the right spot and everything else, and de-risking the project commercially through a PPA; I did want to let the Commission know that there's other business models out there where risk is being taken in development, in obtaining permits for projects, and that

the focus on a PPA or de-risking the project commercially is not always the model being used. When we take a look at the CPUC model that they're using, they're looking at a 10 percent piece for the information, or a weighting factor for environmental and for permitting -- and for cost. And they're putting all the weight into the commercial interest, whether the project has been de-risked from a commercial standpoint. From our perspective with our business model, where we're de-risking the projects, we already have a record of decision now for a 3,000-megawatt wind farm in Wyoming, there's other wind farms being developed in Wyoming, it's easy to get that environmental data, those are permitted projects. The BLM has websites about what projects have been permitted, I think there's been 10,000 megawatts of projects permitted under Secretary Salazar's watch, and 3,000 megawatts of those are in Wyoming at this point. So I think getting environmental data to fit into the transmission planning process can be easy if the projects have been going through the permitting process itself.

We've talked about transparency in the process. I think that in the CPUC process, again, cost is not a big factor, environmental is not a big factor, and those come up with different scenarios that then get handed over to the CAISO and they take a look at a least common

denominator. If it's in these three different scenarios, we'll go ahead and plan for transmission for that. I think that's kind of a little bit short-sighted in looking at where should we be building transmission to environmentally low cost, high grade places. So I'll leave comments for transmission planning until this afternoon. Thank you for providing me the opportunity to provide the comments.

MS. KOROSEC: All right, next we have Rachel Gold from the Large Scale Solar Association.

MS. GOLD: Hi, Rachel Gold for the Large Scale Solar Association. Thanks for the opportunity to comment this morning -- or afternoon now. I just had a couple of questions after the presentations this morning and the roundtable discussion, which I very much appreciated. I think the question of accurate data is a very important one and starting to think about how we take another look at what we're currently using and, in particular, the RPS Calculator and its current limitations leaves me with some questions this morning.

I was hoping to hear a little bit more about the perspective from the PUC about what the current data limitations are, and some of the other challenges that I know we have discussed previously with the Calculator and how you're planning to address them. But I'm left with a

particular question about how you plan to determine whether a new environmental screening process is needed and on what basis that determination will be made, and I do look forward to a public process on that, but I feel like that's a really important thing to think about and to be vetted.

And then I'd love to have a more specific response to what are plans to update other parts of the Calculator, or to create a new calculator, it's gotten so complex that I think it's very difficult for stakeholders to kind of parse out what the moving pieces are and what makes an impact in the outcome. And I would echo the comments on updating costs, I think we mentioned this before and I think that's an important step to take.

And then I have another question regarding the scoring of the DRECP projects and I'm really curious to know why projects outside the DRECP seem to have received lower scores. I think it's a problematic scoring mechanism, that just because we have more data about the DRECP to give those projects lower scores outside of that, and so I have some other concerns about how that scoring was developed and we've mentioned those in our comments on the GPP (ph) process and look forward to working more on those items. And I'll stop there and we'll be submitting written comments. Look forward to your feedback. Thank

you.

COMMISSIONER MCALLISTER: Thank you very much. And also to the previous speaker, I would say, you know, it would be great to see written comments where it warrants digging into a little bit more depth. So thanks for that.

MS. KOROSEC: All right, the last speaker is Chris Ellison from Pathfinder Zephyr.

MR. ELLISON: Good morning. I'm speaking this morning on behalf of the Pathfinder 3,000 megawatt Wyoming Wind Project, which is a different wind project than the one that the previous speaker was speaking about, and the Zephyr Transmission Line, which is associated with it, that we bring that power to California specifically to the El Dorado Substation on the ISO system. I'm going to try to be extremely brief. We have comments this afternoon, as well.

First of all, I want to thank the Commission for holding this workshop, I think it's been extremely valuable. I think a lot of what has been said this morning are things that Pathfinder Zephyr would strongly endorse. In particular, I want to endorse what you heard from Carl Zichella. Almost everything that he said were things that we feel very strongly are correct for California.

And the Pathfinder project, in addition to being -- you know, it gives you an idea, the Mojave has been referred to as sort of the Saudi Arabia of solar, Wyoming is the Saudi Arabia of wind; the fact that you heard from two different 3,000 megawatt wind projects gives you some indication of that. But the diversity benefits that Mr. Zichella mentioned and the University of Wyoming Wind Study that he mentioned, in particular, that identifies $100 million per year of potential integration cost savings to California, specifically to California, from developing Wyoming wind is certainly something that we endorse. The idea that the 33 percent is a floor and not a ceiling is certainly something that we endorse.

And lastly, the issue that's been mentioned by several speakers, including Rachel a moment ago, of getting the environmental benefits, or problems, of projects outside the DRECP recognized in some ways is certainly something that we endorse. The Pathfinder project includes a wildlife mitigation bank proposal to set aside more than 700,000 acres of land in Wyoming for sage grass and for other species protection, that's roughly the size of the State of Rhodes Island. Getting that recognized in the California planning process is certainly something that we would like to see happen. Thank you very much.

MS. KOROSEC: All right, anyone else in the room who wishes to make a comment?

MS. KELLY: Good afternoon. Kate Kelly with Defenders of Wildlife. First of all, thank you very much for holding the hearing today, we really appreciate it. Defenders has spent the last two years working on the Central Valley Renewable Energy Project and you've seen our "Smart from the Start" report. As part of that process, we have been tracking projects in the Central and Southern San Joaquin Valley for those two years and it's a handful, 150 projects with moving parts. And so we had a chance to sort of test drive different ways of tracking, and also doing the environmental screening internally. And we strongly support and would like to reiterate the comments made both by Erica with Nature Conservancy and Bill with California Department of Fish and Wildlife, they have some good insight as to some of the issues that are out there as things that we would really encourage you to further consider.

Mapping is essential and accurate mapping is even more essential, and we have seen a variety of, you know, drifts from where the project site is mapped versus where the actual application is for, so I would encourage making sure that the mapping is good and clean.

Bill's comments about tracking mitigation are

extraordinarily important. It's sort of the second step in our societal contract with developing these projects, of running them through the process, but then making sure that they do happen the way that we think they're going to happen. And it also is an opportunity to avoid missteps such as one we currently have with a large project located on an existing Kit fox mitigation easement. There's a breakdown in the public trust there when something is sited on the land that's supposed to be protected for an endangered species.

It's really important to have sort of a centralized and collaborative review process, much as you've heard from several of the speakers, where the different agencies with their technical expertise are brought into the process very early. It's not unlike what you see in other types of land use development where you have pre-application processes for very clearly identifying issues and tracking them early on so that they don't become a problem towards the end.

And finally, we would encourage to have some form of centralized clearinghouse for renewable energy, not just the siting of it, but also the environmental review process, and it may be something that would involve a mix between the Energy Commission, CPUC, California Department of Fish and Wildlife, Fish and Game -- or Fish and

Wildlife Service, and OPR as sort of the CEQA and land use clearinghouse, so that we have a central place where we all could go and get all those levels of information that we've talked about today, that each of us find to be very useful and important, so that we can do meaningful cumulative impact analysis as an example. We've got the data on the acreage and species and resources that are being protected -- or impacted. And with those comments, I'd be happy to answer any questions and we'll be also submitting written comments. Thank you for your time today.

COMMISSIONER MCALLISTER: Thank you very much. I think Commissioner Douglas has a comment and needs to run, so….

COMMISSIONER DOUGLAS: I just have a brief comment and I'm late to a 1:30 meeting. I think my blood sugar is a little too low to ask a lot of questions. I think, Renee, you'll probably be here after lunch and so this might be a chance for us to follow-up, but I was interested by your statement that the DFAs and the DRECP may not correspond to where projects are going. When I've looked at the maps, I actually see a high degree of correlation between the DFAs and projects, and I think we're going to get a presentation later today showing how the transmission build-out for 33 percent is supporting

the DFAs, or many of the DFAs. That doesn't mean there aren't issues and I think this afternoon will be really helpful for us to hear your thoughts on where the risk is, and what is the remaining gap, you know, why isn't it -- what do we need to do therefore based on the starting point to ensure that the promise of really getting the needed transmission into those DFAs in a timely fashion and in the amount that's needed to realize their potential, you know, what that gap is because I really appreciate the expertise that you bring to the table for this discussion, to help us bridge that gap and hopefully walk out today with a strong sense of what we need to do. So I appreciate that. I am now going to run out of the room and I'll be back at 1:30 -- whenever Commissioner McAllister says we need to be back.

MS. KOROSEC: All right, we have no questions on WebEx, but we do need to open the phone lines just to give an opportunity for those for phone only.

COMMISSIONER MCALLISTER: Great, okay. Please do.

MS. KOROSEC: Go ahead and open the lines. All right, the phone lines are open. Does anyone have a comment? All right, hearing none, I think that we've taken care of the public comments.

COMMISSIONER MCALLISTER: Well, I want to thank

everybody for coming, really, and we understand what a sacrifice it is for you to take a chunk out of your day and come and be with us and to travel in many cases. I really enjoyed the roundtable, thank you all for being here, and so many different extremely valid voices around the table helping us not just get all this stuff on the record, but also really do it in person so you can begin to understand everybody's perspective and engagement on this. And I think that collaborative process is really important just in and of itself. So with that, we'll break until the afternoon session. Are we going to go for 1:30, but it to 50 minutes?

MS. KOROSEC: It's noticed, so I think we do need to at least start at 1:30.

COMMISSIONER MCALLISTER: Okay, so we're going to start at 1:30. There are a few nice establishments not too far from here, nearby, so hopefully you can get lunch and be back by 1:30, so thanks very much.

(Thereupon, the Workshop was adjourned at 12:41 p.m.)

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