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STATE OF CALIFORNIA

CALIFORNIA ENERGY COMMISSION

In the matter of:

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_____)

LEAD COMMISSIONER WORKSHOP ON CLEAN ENERGY ALTERNATIVES FOR RELIABILITY

SESSION 2

IN PERSON AND REMOTE VIA ZOOM VIRTUAL MEETING

Warren-Alquist State Energy
Rosenfeld Hearing Room (Hearing Room A)
1516 9th Street,
Sacramento, CA 95814
(Wheelchair Accessible)

FRIDAY, OCTOBER 28, 2022

1:30 P.M.

Reported by:

Martha Nelson

APPEARANCES

CEC Commissioners Present

Siva Gunda, Vice Chair, CEC

Patty Monahan, Commissioner, CEC

Andrew McAllister, Commissioner, CEC

CEC Staff

David Erne, Deputy Director, Energy Assessments Division, CEC

Deana Carrillo, Director, Renewable Energy Division

Chie Hong Yee Yang, CEC

Brian Samuelson, CEC

Erik Lyon, CEC

California Public Utilities Commission (CPUC)

Darcie Houck, Commissioner

Pete Skala, Director Electricity Supply, Planning, and Cost

Public Comment

Kurt Johnson, Climate Center

Tod O'Connor

Michael Day

Julia Levin, Bioenergy Association of California

Bert Wank, InfinRel

APPEARANCES

Public Comment

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Kate Unger, California Solar & Storage Association

Ben Schwartz, Clean Coalition

Dan See

Ryan Pickering

Anne Hoskins, Generac Energy Technology

Dylan McAuliffe, Solar Landscape

Allie Detrio, Microgrid Resources Association

Nick Theisen, Turning Point Energy

Tim Smythe

Heather Hoff, Mothers for Nuclear

Madeline Symm, Cypress Creek Renewables

Hannah Argento McCurdy, Arcadia Power

Derek Chernow, Coalition for Community Solar Access

Rachel Bird, ForeFront Power

Marc Costa, Energy Coalition

Jeff Burke, Bright Canyon Energy

Serg Berelson, Mainspring Energy

Joe Henri, Dimension Renewable Energy

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P R O C E E D I N G S

1:31 p.m.

FRIDAY, OCTOBER 28, 2022

MR. ERNE: Good afternoon, everyone. Welcome back. I am David Erne, the Deputy Director of the Energy Assessments Division, welcoming you back to our second session for this afternoon of our discussion of clean energy alternatives for reliability.

This morning, we had a good conversation about the number of requirements that were established as part of legislation this last summer that relates to clean energy and reliability. And there are, as you know, there are quite a few of those requirements. But there's commonality in terms of the analysis of those clean energy alternatives across those different requirements.

And so this afternoon, we're going to talk about the types of technology we should be considering in our evaluation, and also attributes that we want to talk about in terms of the availability and potential for those technologies to provide value to reliability. And so it's a very preliminary conversation. We have not started our full analysis, so we're basically putting out some ideas and requesting input back from the public.

We'll be including doing an RFI (Request for Information) that should be coming out late next week, with

an opportunity with all the questions you're going to see this afternoon from us, and maybe some more, going into the RFI and looking for your feedback in response to that RFI to give us information that we can utilize in our analysis across many different requirements.

So that's kind of the purpose of the afternoon.

Let me remind everyone that we are recording on Zoom. We're using the Q&A function on Zoom when we get to the Q&A portion. We will start with Q&A in the room and then go to Q&A on Zoom. We are also going to be using the raise-hand feature for the comment period in the afternoon. We'll have a comment period right before the end of the day.

And we have docketed the schedule, the presentation, and we will docket the recording for this event, as well, when it's captured. So all of that will be in our docket and available. That is our 21-ESR-01 docket for -- and that's on the schedule for the event.

So at that point, I think that covers all the administrative topics for this morning.

So I want to turn it over to Vice Chair, who is the Lead Commissioner for this workshop, for dais comments.

VICE CHAIR GUNDA: Thank you, David.

I just want to thank, again, everybody who's in attendance. And I look forward to the continued discussion

again.

I want to thank David and the CEC and CPUC and DWR teams for their presentations this morning.

Just reiterating what David just said, so I think we went through a very dense set of material this morning. And based on the Q&A, and some of the comments we heard, you know, all this information is on record. The presentations will be available, the transcript will be available for those who want to like dig into that again.

But also, given the number of requirements doesn't mean we have to do different types of work. They all boil down to three or four core activities, including improving on analysis and situational awareness, just thinking about what are the different options on the table, you know, alternatives, you know, like some of the options, like Diablo, you know? That was just something we were asked to look into, but also options that were not adequately scaling yet.

So that's something we want to discuss, look at the barriers of those options to be scaled and, finally, all culminate into a recommendation, whether it be policy, investments, and such. So I think those are the buckets of work we will do, no matter what we're doing.

So I look forward to the session. We have Commissioner Houck on the dais here, and we have

Commissioner Monahan joining us via Zoom. And I want to look at them, if they have any comments, before we pass it back to David.

COMMISSIONER HOUCK: Just briefly, just to reiterate, thank you for everyone that presented this morning. It is a lot of information. And I really appreciate this opportunity to hear from Staff the work that they're doing and the coordination that's going on between the different agencies. So just wanted to thank everyone.

And again, as I said this morning, very much looking forward to this afternoon's discussion and talking more about the role of distributed energy resources and our reliability, both.

VICE CHAIR GUNDA: Thank you, Commissioner Houck.

Commissioner Monahan, did you have anything that you wanted to add?

COMMISSIONER MONAHAN: I'm just really looking forward to the discussion. I think we -- our appetites got whetted by the morning and so now we're ready to the main course. So, yes, looking forward to it.

VICE CHAIR GUNDA: Thank you.

David, back to you.

MR. ERNE: Thank you, dais.

So if we can go forward two slides?

I want to reiterate what we're going to cover this afternoon. So we're going to kind of make the clean energy options evaluation a little bit dynamic in the fact that I'll present portions of what we're going to be doing, solicit Q&A, next section Q&A.

And what this slide does not show as a mistake, but it's in the schedule, is we do have an overview of the Distributed Electricity Backup Assets Program (DEBA) between 3:00 and 3:30. So you can shift everything from where it says "Public comments" out a half-an-hour. And Deana Carrillo will be here -- or will be online to provide an overview of the DEBA Program and ask some questions that she wants to incorporate and get feedback on as part of our RFI.

So that's what the afternoon session looks like.

Next slide. I think we skipped a slide. Thank you.

So energy transition is really what we're talking about more broadly. And clearly, as part of our energy transition, we want to make sure that we have a safe, reliable, clean, resilient, equitable and affordable writ (phonetic); right? So many, many factors that we want to be considering. We want to consider those all throughout all of our analyses.

And to a point that Commissioner Monahan made

this morning about equity, you know, it's an important part of everything that we're thinking about and wanting to make sure that we look at opportunities to address equity in every program that we are focusing on within CEC.

There are many, many legislative requirements. I think at the top, we have SB 100, which is our goal for 2045, and now earlier, to meet those requirements, and that's overarching, as well as 846, and all the other ones that we mentioned this afternoon. The commonality of all of these is to be thinking about a suite of clean energy technologies that can support all of these goals and all of these objectives.

And the analysis that we're going to be pursuing within the CEC is meant to address all the legislative requirements that you see on this slide. They all have an element that's looking at clean energy technologies and their application between now and 2045 with differing requirements for each of those programs, so there's slightly different boundaries for each of those programs that were established. And so we're going to be looking at trying to evaluate all technologies and then trying to, I guess, down-select or put boundaries around those that are for particular programs, and we'll get into that in just a little bit.

We can go to the next slide.

Alright, so we have a lot in front of us, a lot of requirements the CEC is focusing on.

First, we need to improve our frameworks and analytics. It's really important for our goal to meet our energy transition that we have good frameworks within the state of how we think about reliability, as well as the analytics to be able to evaluate reliability and plan for reliability.

You can click one more ahead.

We have a number of questions that we need to answer associated with that.

We need to incorporate climate change. We talked this morning about the need to think about climate change in our planning and in our forecasts and how we think about it in all of our operations moving forward and be better and better about incorporating that in all that we do. We're not there yet but we need to make a path towards that.

We need to do things like reassess the planning reserve margin, that was mentioned this morning, and thinking about that for the state.

Make sure that all of our load-serving entities have the sufficient resources in their Resource Adequacy Programs to support reliability.

And generally rethink our assumptions, back to

climate change as an example, and thinking about how we can continually make our analytics better.

The next one is identifying technologies and approaches. That's part of what we're going to be talking about today. We need to identify the best suite of technologies that can provide the state the value that it needs to meet our goals. That happens broadly and is a main function of the Clean Energy Reliability Investment Plan. But we also need to evaluate clean energy technologies and portfolios of them to be able to be evaluate them as effective options to extending Diablo Canyon, so there a number of factors we need to be considering here, those two, specifically, from 846, but they were like they relate to others.

Next one.

We're also being asked to identify barriers and identify solutions, make recommendations for overcoming those barriers for the implementation of those clean energy technologies. So what are the barriers by each technology? And what kind of approaches could overcome those? How do we overcome the supply chain interconnection permitting barriers we've identified before for clean energy technologies? All of those are things that we want to be addressing.

And last, recommending strategies. As I

mentioned, there are multiple reports that request the CEC to identify and recommend planning and policy recommendations for the Governor's Office and legislature. And that's what's going to be incorporated in that last portion.

Next slide.

As was shown this morning, this is the same diagram that Lisa showed in terms of the number of requirements, the specific requirements, bucketed by reliability, Diablo Canyon, and clean energy. There was a fourth area here, which is workshops. There are a number of requirements within the legislation for us to conduct our analysis with public input. And there's a desire for us to have public input on a variety of our projects, whether they are specifically required or not.

So we're going to have a number of workshops. We're going to try to work very hard to consolidate workshops. We know that it's a burden for the public to be participating in every workshop. But we want to make sure that we are vetting our content and getting feedback from the public as much as possible. So we may not have as many as are shown here but we're -- because we're going to try to consolidate, but we may have a number of workshops. And, where we can, we're going to try to make sure that they're aligned and we cover as many similar topics as we

can related to all these legislative requirements into individual workshops.

So as you can see, there's a fair amount of work to happen between now and next December.

Next slide. Keep going. You can go all the way through.

So this is basically what I discussed before, but showing that this afternoon, we're going to focus on these two middle boxes, and that is looking for input on the clean energy technologies that we should be evaluating, and input on the ways to identify parameters of those technologies that can either be barriers or solutions.

Next slide.

As I mentioned, the work that we're embarking upon affects multiple deliverables that CEC has. Under 846, as we mentioned before, we have the Clean Energy Reliability Investment Plan. We have the comparison to Diablo Canyon extension, so looking at clean energy alternatives to Diablo extension, both of those products due next year, as well as our load shift goal that has to be developed by next July. We also have our Reliability Report in January, which will have some discussion of clean energy alternatives and barriers to implementing those.

SB 423, which was actually from 2020 legislation in 2021, requires us to develop a report of clean, firm

energy resources, and provide that report in the IEPR or separately by December of 2023, so this analysis will inform that.

And, of course, the analysis that we do will be important for improving our SB 100 analysis. So we produced our report in early 2021. We have another one due in 2025. In that process, we want to be expanding our portfolios of resources that we look at and evaluate for not only their ability to meet the SB 100 goals, but also their ability to provide reliability.

So the afternoon's discussion is meant to provide a framework that will inform all of these requirements, not just in any individual one.

Saying that, I'll go to the next slide, recognizing that each of the requirements has, from the legislature, has a certain set of boundaries around those programs that we will need to consider as we move forward. So if you think of this broad suite of technologies that we're going to be evaluating, some of them will be appropriate for DEBA, some will be appropriate for the Clean Energy Investment Plan. For example, DEBA is really meant to focus on emergency reduction, emergency load reduction, but also to provide some peak reduction or net-peak reduction, whereas the Clean Energy Reliability Investment Plan is not intended for emergency, but

certainly is intended for permanent load reduction and peak reduction.

So some of the technologies that we evaluated in this broad suite will be applicable to DEBA, some will be applicable to the Clean Energy Reliability Investment Plan. And we'll have to take that into account as we're going through the analysis.

Next slide.

So for the purposes of going through this analysis, what we want to do is try to identify all of the options that we should be evaluating, so a whole suite Of -- a menu of clean energy technologies we should be evaluating, and then a set of attributes that we want to evaluate for each of those technologies so we can adequately compare them. Some of those will be qualitative, some of them will be quantitative, and we're going to talk through our preliminary thinking on that afternoon. We want to organize this as a matrix so that we can more effectively evaluate these technologies against each other and for their individual purposes.

Next slide.

We've created two primary categories, supply and demand. And I'll get into individual technologies in the next slide. But we have certain categories that we've created, which is a rough way of accumulating different

technologies, recognizing that there's not one set of parameters or one set of categories that is perfect. So for example, distributed energy resources can be a supply, they can be a demand, they could fit under both. You'll see in a minute kind of how we separated them out but they can be considered for both purposes.

For the purposes of discussion today, we consider those as being both supply and demand, but we just put them in, and you'll see in a minute how we align them.

There are other resources, like gas resources, that we might consider for purposes, for example, of alternatives to Diablo Canyon. But we wouldn't be considering them for purposes of a fossil gas for purposes of the Clean Energy Investment Plan. So again, what we're going to be laying out is a broad suite of technologies.

Next slide.

So here's our preliminary list. It's a little bit of an eye chart, sorry for that, but it lays out a large set of technologies that we want to take a look at, characterize, and be able to compare for the purposes of these analyses.

So under the supply option, we have a list of DER that could be both supply or demand-type resources. We have a suite of renewables, mostly small scale, but we do include utility-scale, again, for the purposes of maybe

comparison to Diablo Canyon, but maybe not for the Clean Energy Investment Plan, different types of storage, different types of gas-fired generation, and other, which includes, not necessarily -- it could be technology in the case of microgrids, like controls and switching, but may also include things like purchasing imports, again, potentially as an option for Diablo Canyon as opposed to the Clean Energy Investment Plan.

On the demand side, we have more of a list of typical demand options, vehicles-to-grid, vehicle-managed charging, different types of controls for equipment, as well as thermal energy storage, energy efficiency. And then at the bottom we have mechanisms. We could think of different approaches for demand response and demand flexes, as well, time-varying rates. So a number of not just technologies but approaches that could be applied.

And what we're going to be looking for in our RFI is recommendations for technologies that we should be adding to it. Do we have the right categories, different categories, different list of options, that we should be considering this full complement of what we are evaluating?

We can go the -- I'll come back to this in just a second, so go to the next slide.

And the next slide identifies some of our preliminary questions that you'll see in the RFI. Do you

agree or disagree with our distinction between supply and demand options, different categories or ways we should categorize it? How about our resource options? Do we have the full complement of research options? Should we be slicing and dicing them a different way for our analysis? That's preliminarily what we are trying to get forward in the RFI, which will be out next week, and we're looking for feedback on that.

What I want to do right now is I'm going to pause. I'll actually ask to go back one slide. And then with those, that kind of our questions to the public, I'm going to pause here and see if there are questions from the dais on or comments from the dais on our categories or preliminary list of options and see whether there's feedback there. And then from there, we'll look for questions from the public.

So Vice Chair, any questions from the dais on how we're thinking about this right now?

VICE CHAIR GUNDA: Yeah. So I think, David, first, a clarification. I think when you say technologies, you're talking about options; right? Like not technologies but solutions as a whole?

MR. ERNE: Yes. Yeah. It is both technologies and like consider options or other solution, approaches, that could be utilized, like purchase of imports or DR

mechanisms, as an example, that are not necessarily technology specific.

VICE CHAIR GUNDA: Yeah. Thank you. I think I just want to make a comment and see if the consideration is along these ways.

But I think there are options in terms of everything that we can think of in terms of improving reliability in the short and midterm, but also the longer transition. You're looking at all of them here.

But then to the extent that we are going to create programs to provide grants, or others for that, then the guidelines for those programs will be done later?

MR. ERNE: Correct. So this slide just kind of lays out the suite of technologies or options that could be applied between now and 2045. We'll be thinking about whether those are available now or whether they're available in the future. So it doesn't necessarily have to be mature technologies we're considering now, it could be technologies that are under development that we think are going to come out within that timeframe, or other solutions, other options besides our existing DR structure or other structures that we have in the state to deploy clean energy. So we're thinking about all of those and again, over a longer timeframe.

VICE CHAIR GUNDA: So I think then the question

would be, in terms of what we're looking for from the public input, from the stakeholder input, you're looking at technology options, but not necessarily -- I mean, I want to make this distinction for people who are listening because it's important, that once we have the options, you're going to look at bucketing them into different categories. And when you develop funding programs along those lines, you will write the funding guidelines in a way that most of those options could be applicable; is that a correct way of thinking about it?

MR. ERNE: That is correct. And I'll actually go one step higher in the sense that we'll be utilizing this list, not necessarily just for funding options, but for some of our requirements. For example, we are required to take a look at a portfolio of options that could be cost -- and do a cost comparison against those against Diablo Canyon. That requirement asks us to look at these technologies and their availability relative to Diablo Canyon. So we won't necessarily have a program associated with that but we need to analyze these so we can compare them and do that analysis and provide information about other approaches.

In some cases, we will be using these to develop investment programs, like for DEBA or the Clean Energy Investment Plan. And so this information will be -- will

inform the approaches that we might take for incentives in those programs, the approach to utilize that funding, recognizing the boundaries of that program, the legislature has set forth, but then also trying to fill in the gaps. And as I said this morning, we have multiple buckets of money, and making sure that we're coordinating across those different funding resources to be able to have a good diverse portfolio of approaches that do not overlap.

COMMISSIONER HOUCK: So just a couple of questions.

On the supply options, where you're looking at gas-fired generation, are you -- how are you factoring in, or are you, things like biofuels or renewable natural gas or, potentially, some of the hydrogen pilots that are being looked at, or carbon capture on the longer term? And are you looking at all of the supply options as in addition to what we have right now or are you potentially also looking at retirement of some of the older facilities or, you know, particularly, some of the concerns that have been raised over the last couple of years with OTCs?

MR. ERNE: Sure. So we will be looking at different fuel sources for combustion and evaluating those. So, yes, we will be considering that.

And then, in terms of retirement, we'll certainly be thinking about retirement and opportunities for where

these can replace retirements. I don't think the programs are, you know, are directing us to retire or anything, but we'll certainly look at creating a list of solutions that could be available for those to ensure that we are covered for reliability as those retire.

COMMISSIONER HOUCK: And then one more question, and this may be more for the second presentation today, you can let me know, but over the last couple of years, between the extreme weather events, Public Safety Power Shutoffs (PSPS), and other constraints on the system, you know, there's a large number of folks across the state that have invested in backup generation, whether it's fossil gas or propane in particular. And are we looking or considering, in these options, potential investments or ways to try and replace some of those facilities?

MR. ERNE: So just to clarify, are you referring to like private customers buying backup generators for their homes? Are you talking about backup generation for like commercial facilities, larger backup systems --

COMMISSIONER HOUCK: Both --

MR. ERNE: -- or both?

COMMISSIONER HOUCK: -- just considering the cumulative impact --

MR. ERNE: Right.

COMMISSIONER HOUCK: -- that they're all going to

be operating at roughly the same time.

MR. ERNE: So we do want to consider both of those types of resources and finding opportunities to replace those. So DEBA is meant to help replace some of the fossil backup generators, primarily in commercial industrial facilities. And we're looking at energy storage, as an example, for both commercial and residential in terms of opportunities to allow customers not to require fossil backup generation during PSPS or other events.

And we do want to take a look at those locations where you have more predominant outages, whether it's PSPS or other reasons for it, as well as inequity communities. So we're going to be looking at the application of the different technologies and how they overlap with those different areas as a consideration for where we might think about prioritizing investments.

COMMISSIONER HOUCK: No, thank you. And that, I think, answered my last part, was looking at equity, because many disadvantaged communities are facing more outages and longer outages than other areas of the state.

MR. ERNE: Yes, and we also want to look at areas where, you know, there may be air quality impacts from outside of the region that might impact the quality within a region. So, you know, the pollution doesn't necessarily always start in the disadvantaged community, it starts

outside of it, so you may make investments outside of it to improve the air quality within the area.

VICE CHAIR GUNDA: Can I just add one comment?

I think, Commissioner Houck, to your point on -- I think the next couple of slides, we're going to get into this, once we go through the options -- not all these options might be considered, right, at the end, for example, gas. Gas might fit a very specific role in terms of temporary gensets or something for a short term. But like, you know, we're not necessarily looking at these options for the long term. But the idea would be to put everything on the table, judge them through a set of attributes, and get public comment on those.

MR. ERNE: Yeah. So for the Clean Energy Investment Plan, we certainly wouldn't be looking at fossil gas products.

In looking at alternatives to Diablo Canyon, it might be worthwhile looking at that. This does not necessarily mean we would recommend pursuing those but we think we should at least be evaluating against those and decide whether, at that time, whether they're appropriate or not appropriate, given their cleanliness. And so each of these may not be considered for every single program.

But, yes, the intent is to put everything on the table and then start deciding, figuring out, what should or

should not be appropriate for each individual program.

VICE CHAIR GUNDA: Commissioner Monahan, do you have any questions? Oh, yeah, I see you. Yeah.

COMMISSIONER MONAHAN: I do. Thank you.

David, I'm wondering, have you considered, I mean, this category of V2X, it's complicated one, right, because at least the V2G, vehicle-to-grid, side is more in the supply options category. But I think it makes sense not to put it in that since it's not -- it's going to depend a lot on consumer behavior that we don't fully understand right now.

But, eventually, we could almost think of this hybrid third category around these. And maybe energy storage could fall into that category, too, that where there's this aspect of it that, really, it's a supply. It's not -- it doesn't really fit neatly under demand, but it doesn't fit neatly under the supply options that we already have. And just is there any thinking around this kind of hybridization or a new category to capture that?

MR. ERNE: I didn’t mean to cut you off, Commissioner.

COMMISSIONER MONAHAN: No, I'm done. Yeah. Thank you.

MR. ERNE: Yeah, so we actually have been talking about that. And maybe making a third category that is

something that could be considered either supply or demand and having three categories instead of two because is -- there are -- we want to recognize the attributes of those that could be either both -- could be either supply or demand, and so that is something we are considering.

COMMISSIONER MONAHAN: Thank you.

VICE CHAIR GUNDA: Yeah. And I also want to add one other thing, Commissioner Monahan, on there.

I think there's a multitude of kind of cutting these pieces and kind of setting them up. I think there is another framing we need to think through which is, you know, distribution-side options, given that some of the fundings are limited by the distribution side. Again, we have to define what that distribution-side mainly means. At what level, what voltage, are we cutting that off?

So you're right, I think there's a few different ways to really think through to expand this thinking. So, yeah, I look forward to engaging with your office on getting some of those thoughts.

MR. ERNE: Any other questions from the dais?

Alright, we can go to some public questions. We'll spend about ten minutes on public questions, then I'll move on to the evaluation of attributes.

So, Chie, do you want to start?

Oh, we'll start in the room with Kurt first.

MR. JOHNSON: (Off mic.) (Inaudible.) Speaking (indiscernible) to bring up (indiscernible) Rosa, our treatment plant (indiscernible).

(Mic is turned on.)

MR. JOHNSON: Oh, substantially better. Thank you.

It wasn't -- it was a hybrid. It was partly curtailment, it was partly generation, and there are a lot of assets like that that could be developed. You see it with municipal water systems. You see it with wastewater systems. You see it with some of the combination multi-benefit assets that are doing firefighting and local resilience and a number of different attributes out there. And they don't necessarily -- are they storage? Yes. Are they generation? Yes. Is it load modification? Yes, it's sort of all of that.

And so I just want to pass on to keep in mind to try and maybe make the other section something that would be open to something that could perform in both a curtailment, a non sacrifice-base curtailment, which is a critical distinction, but maybe has some additional capital costs to enable that capability. It deploys faster. It typically has an extremely long, useful life. And at the macro scale would allow us to start transitioning some of our infrastructure to match our energy usage with

intermittent renewable production and deliver resilience at the same time.

Thank you.

MR. ERNE: Yes. Thank you. Good point. We've had a number of conversations with water/wastewater utilities about the opportunities there. And there really does seem to be quite a few great synergies in terms of what they can provide from a reliability perspective, but also what they provide from a resilience perspective by being able to operate in emergency situations. So we do have wastewater treatment pumping but, you know, we can make that a broader category. But we have been evaluating that as an option.

And I think it's all in the room. So, Chie, questions from Zoom.

MR. YANG: We have about 21 questions/comments. There's some comments in here, as well, a very popular one, so I'll leave that one for last.

MR. ERNE: Yeah. So, actually, if there are comments, we'll leave them for the comment period at the end.

MR. YANG: Okay.

MR. ERNE: Only read out the ones that are questions at this point.

MR. YANG: Sounds good.

First question is, "Why isn't new nuclear, as well as Diablo Canyon, included in the supply options? It is green and firm, which SB 423 requires."

MR. ERNE: Good question. We should be thinking about that. Thank you.

VICE CHAIR GUNDA: Can I just comment on that one, though?

So just in terms of looking at new nuclear in the state of California, obviously, we have, you know, limitations on, you know, putting new nuclear in California because of the state policy. In terms of extending Diablo, we have, right now, specific requirements of -- I mean, we were planning to retire that. Now that the legislature has given us the go ahead to explore the conditions under which they can be extended through 2030, I think that's the legislative paradigm that we are working under. So we would not be considering nuclear as an option outside of that paradigm, given that, you know, that's the state policy at this point.

Thank you.

MR. ERNE: I apologize for the misspeak.

VICE CHAIR GUNDA: Yeah.

MR. YANG: Next question is from Joe with Dimension Renewable Energy. "How are you categorizing combined technologies, such as grid connected solar-plus-

storage?"

MR. ERNE: We have not gotten to the point of how we're going to evaluate those, but we do want to consider both, you know, solar and storage separate and the combination of both solar and storage.

MR. YANG: Next question from Heather Hoff.

"What checks and balances are in place to ensure that analytics and frameworks aren't unduly and inaccurately influenced by parties with special interests? For example, it just came to light that the original study that basically said we don't need Diablo was funded and commissioned directly by Friends of the Earth, an antinuclear group with direct benefit and interest in trying to shut down the plant."

MR. ERNE: So this is just the first of multiple workshops that we plan to have to discuss our approach and development of this analysis. We intend to have more. And we solicit public feedback on all the analysis for helping to ensure that we are being comprehensive, but also addressing the needs of each of the legislative requirements. So we look forward to public feedback throughout. As I mentioned earlier, we have a number of workshops that we're going to be preparing. And I look forward to people providing feedback during that time.

At this point, that analysis is primarily being

done by CEC, with support from Guidehouse.

VICE CHAIR GUNDA: Yeah, if I may add, just to kind of the spirit of this questions?

So there's a few different ways the analysis attempts to be technology agnostic; right? So we have certain technologies that we all agree on. That needs to be baked into the analytical framework in terms of wind, solar, all the zero-carbon resources that we, you know, went through workshops and we'll continue to refine those.

In terms of nuclear, I think, you know, I just want to make sure, we have a very specific mandate at the CEC to study Diablo's extension as an option for the liability purposes. And I think we're going to do that. Outside of that, given the state's moratorium on nuclear and given, you know, the state policy, that exploration will not be seen as a nuclear option.

But I think in in the previous SB 100 analysis, what the agencies collectively tried to do was to develop scenarios where we talked about a clean or zero-carbon firm option as a generic option or a zero-carbon dispatchable option. So that's the way we would approach analytical framework where we would like to look at technology-neutral, more agnostic options but, you know, continue to fill them with technologies that are both allowed within the state policy but continue to emerge the conversation.

Thank you.

MR. YANG: Next question from Robert Perry, Synergistic Solutions.

"Isn't the relative location of a resource through the utility meter the only point of differentiation between supply and demand resources? For example, distributed solar as part of a microgrid would be operated primarily as a net-load modifier. VGI also crosses" -- wait, it looks like moved over a little bit -- "VGI also crosses between supply and demand."

MR. ERNE: Can you repeat that question again?

MR. YANG: Yeah. "Isn't that relative location of a resource through the utility meter the only point of differentiation between supply and demand resources?"

MR. ERNE: Yes, so that is an important distinction. However, we should be thinking about options where something may be providing demand reduction, for example, like a microgrid can meet demand reduction, but there might be opportunities for having export, which would make it a supply option. And so we want to be thinking about both of those structures and whether there are changes that need to be made to allow both of those to occur.

MR. YANG: Next question from Roger Lin with the

center of Biological Diversity.

"In developing the matrix to compare resource options, is it possible to include an assessment of the resource potential benefits and impacts to DACs? This is in order to compare those resources to one another, in addition to Diablo Canyon."

MR. ERNE: Thank you, Roger. Yes, we are definitely interested in looking at the challenges -- or the opportunities around these technologies and how they can benefit disadvantaged communities and looking at both the social costs and non energy benefits. And we are going to be incorporating that into our next SB 100 analysis, but also trying to incorporate that into all of our work moving forward, so we can consider all of those benefits.

MR. YANG: Next question from Jennifer Lu. "What's the difference between answering the questions through the RFI and submitting written comments?"

MR. ERNE: That's a really good question. And it's more of a reflection of us not getting the RFI out as quickly as we expected, and then realizing that we wanted to have a longer period of comment.

And so you're welcome to provide your comments in either form. We will be accepting those and considering those in the programs in either way. So our apologies on the administrative side of this but there's, from our

perspective, there's no difference. We'll use the information both ways.

MR. YANG: Next question from Jan. "How far do these analyses go? Is it all the way to 2045 or earlier? And, if so, why?"

MR. ERNE: So the majority of the analyses for the work that came from legislation this summer is through 2035, although we want to be able to think about it longer up to 2045, simply because of SB 100 analysis. So we might actually have a -- you know, I see this as a progression in our analysis over time that we intend to build and continue to improve and refine for a variety of purposes. And so, you know, I think initially, we'll be thinking out to 2035, and then expanding it beyond that.

MR. YANG: Next question from Jeff.

"Where do you count for waste to energy ,such as digester and gasification fuel systems, gas-fired, but also renewable and DER, too?"

MR. ERNE: Good question. Something we should be thinking about.

MR. YANG: "How do you see the role of small scale combined heat and power on the supply and demand list? CHP fits include hospitals, apartment buildings, and manufacturing with a thermal need."

VICE CHAIR GUNDA: Yeah, if I may just jump in on

this one?

I think some of the spirit of the questions in terms of specific technologies or solutions and approaches, I think, at this point, at this stage, I think we want to put everything on the table, in general, as an option. Because we're looking at, as David mentioned, a few different elements; right? We're looking at what are the options that can be very quickly dispatched, given the enormous, extraordinary situation, the reliability situation we're in? So some of the technologies, we might not want to pursue in the long term, especially from a standard assets point of view, equity standpoint of view. You know, we might be in a situation that necessitates a hard situation where we might want to entertain a solution for a short term.

So I think what we're asking at this point is, when we look at the reliability problem, and the reliability problem we have as at the top of the presentations today, David mentioned, you know, we have the problem of making sure we are always procuring to the limits that we have to procure to, right, in the planning standards. And to the extent that there are delays in either procurement or delays in deploying or developing to the procurement levels, that is a small sliver we have to continue to think through how best to support.

There is another chunk on the top of that which is that the bigger -- big issue in the short term, which is how do we manage this volatility of 3,000, 4,000, 5,000 megawatts? And those 3,000, 4,000, 5,000 megawatts are needed today and we do not have them.

So some of them, you know, like a number of you noted, the extraordinary actions that we've all collectively taken this summer came both from the demand and the supply side. So we know that the both options could be available, and not all of them were clean, and not all of them were something we would consider for a long-term clean energy transition but might need to rely on them on a very short term basis.

And then the third part is, regardless of what we're doing in the reliability to securing this issue in the short term, we have to, on the long term, ensure the transition and the transformation of the clean energy resources is happening and we put in money where it's needed or policies where it's needed.

So I think what we want to do at this point is let us put all those things on the table, all the other things we can do to both support the long-term transition, but the short-term problem of volatility. Again, when we say short-term problem of volatility, that could be long-term, too, if we don't deal with that with other resources;

right?

So I think what we want to do is put everything on the table, think through what reliability lenses we want to judge them through or analyze them through, and the attributes that we need to really look at them, so all of that we want to do. So for the technology-specific questions, I would just request that, think about it that way, that all the options are on the table for now.

And specific to nuclear and Diablo and given the previous moratorium, and the state policy, we are not, right now, looking at Diablo as an option beyond 2030. The legislature gave us very, very clear direction to look at the option of extending it to 2030 for reliability purposes. And beyond that we do not have a state policy, you know, asking us to even directionally looking at that, because we don't think that's an option at a state level at this point.

MR. YANG: Our next question, "Why is new large hydro not considered in list?" It moved again. "There's at least been plans for large flood control reservoirs." Sorry about that. Lost my place. Oh, there it is.

Again, "Why no new large hydro? There has been at least plans for large flood control reservoirs, which could also have hydropower and possibly add generation to existing large reservoirs."

MR. ERNE: Yeah, so most of the programs are thinking about distributed-type headsets. I had not thought about large hydro for a number of these programs, given the challenges we've had with getting large hydro in place. We'll go back and reassess that.

VICE CHAIR GUNDA: And I just want to reiterate the spirit of what I said, and I think some of these questions came before that.

To the extent that you think that's an option we should consider as a state for near-term reliability or long-term, and you'll see that we are not considering specific pathways for building that, please, we are interested in that information, put it on the table, because we would love to be aware of all the options before we go forward into public stakeholder input and deciding on the final set of options.

MR. YANG: Next question from Sam.

"Can you say more about how you will consider avoided costs, just based on CPUC methods and others, as well as co-benefits, societal, et cetera?"

MR. ERNE: So the costs and benefits, we still need to evaluate our methodology on that. Those are attributes that we want to consider for our analysis. We have a fair amount of work to do on the nonenergy benefits in terms of developing methodologies for that.

And we noted in a couple -- about a little over a month ago that we plan to have a solicitation that we'll be looking for support to help us develop nonenergy benefit methodologies. And so that's something that will not likely be available to us in the near term but is something that we do plan to build out and be able to incorporate in our analysis moving forward.

MR. YANG: Next question from Dan.

"How do you distinguish between solar and storage behind-the-meter and direct-to-grid ahead of the meter? How would it be categorized, supply or demand?"

MR. ERNE: We have listed them here in the supply side. But clearly the -- as we mentioned earlier, we might need to create a new bucket, that the Commission Monahan had noted, about -- that could be for those, separate those that are could be both supply and demand from those that are largely supply. And I think having the three categories might make the most sense.

MR. YANG: Next question from Brian.

"On slide 53, have you considered including standalone transmission as an option, since that can be an effective solution, especially in terms of addressing local reliability?"

MR. ERNE: So the programs that we are being

asked to evaluate and develop for are not allowed to or not -- do not incorporate transmission as an option to be funded, and so we've not incorporated that here as terms of our analysis.

VICE CHAIR GUNDA: Just wanting to add on that one.

I think just reminding everybody in the legislative cycle, we had an Bank (The California Infrastructure and Economic Development Bank) -- I'm short on my words -- but, basically, there is money for specific transmission for Bank to potentially help finance.

So I think there are elements. I mean, first of all, I think it’s a recognition of the transmission issue and opportunities for supporting the development of new transmission. But as David noted, specific to the work that CEC is entrusted with, we do not have opportunities to necessarily invest in infrastructure.

But having said that, if that is something that people feel very strongly, we would love to hear about that so to, at least, develop as a recommendation.

MR. YANG: I believe that's all the questions. The remaining questions are all in similar fashion. Commissioner Gunda, you've addressed most of those in sort of that same bucket. The remaining ones that we can answer through the chat.

MR. ERNE: Great. Any final questions or comments from the dais before we move on?

VICE CHAIR GUNDA: No. I'm seeing a bunch of comments that are -- I think perfectly segue into the next slide, next discussion of the attributes and keeping it agnostic to performance metrics.

Thank you.

MR. SAMUELSON: We do have a couple raised hands.

Do we want to go through those, David?

MR. ERNE: For raised hands, we'll use that -- that function, we're going to use for the comment period, so I'm assuming those folks are providing comments instead of questions.

VICE CHAIR GUNDA: Let's get through those two, just two. Let's get it. Maybe they have a question.

MR. ERNE: Alright.

VICE CHAIR GUNDA: If not, we will -- if it's a public comment that you want to do, please, if you can -- if you're -- yeah.

So Todd has a question. Let’s go with that.

MR. SAMUELSON: Okay. Tod O’Connor, you are allowed to talk.

MR. O'CONNOR: Thank you, I guess I can hear myself in the background.

Very basically, I represent Strobel (phonetic)

Energy, a behind-the-meter thermal energy storage provider and wanted to chat about the attributes.

We believe long-duration energy storage could also be put in the demand side of the equation. And we believe there are behind-the-meter energy storage solutions that could fit in both buckets.

So thank you for the opportunity.

MR. ERNE: Thank you.

Next one.

MR. SAMUELSON: The other hands were lowered.

MR. ERNE: Okay. Great.

Alright, so if we can move forward a couple of slides?

Alright, so in addition to laying out the suite of technologies and approaches that we want to be evaluating, we also need a way to evaluate those approaches and technologies for purposes of doing our comparison for Diablo Canyon, but also considering them for different programs. We have thought about several types of attributes, both qualitative and quantitative, and want to be able to talk about those as our evaluation matrix and get feedback on those. What our intent is, is to be able to try to lay out is a variety of resources and evaluate each of those options versus a certain set of attributes. And some of those, as I mentioned, some of those will be

qualitative and some of those will be quantitative to be able to make sure that we can try to compare them.

Next slide.

So our qualitative attributes are listed here that we've identified so far and I'll walk through each of them on the next two slides. We got to consider the first five of them related to achievability, so it really relates to the way of getting these technologies out and online, versus more inherent characterization of the operation of those technologies or approaches, which are the remaining four, and so evaluating those in slightly different ways but considering ways to think about those.

We'll be looking for feedback on these attributes. And I'll walk through the attributes in a second. But looking forward for perspective on do we have the right set of attributes, other attributes we should be considering for our qualitative attributes?

Next slide.

So as I mentioned, these first five relate to more about the achievability, so the ability to get these things online and in a timely fashion and functioning, so readiness related to its maturity. And we're, again, looking at technologies that may not necessarily be ready right now but could be ready in a few years because we're thinking, at least out to 2035 and for SB 100 and beyond.

Some of the -- the next three relate to challenges that we currently see in getting new resources online. The permitting aspect, often related to CEQA, interconnection challenges, and supply chain challenges. And there are technologies now that we want to get online that have these particular issues. And we want to identify ways to overcome those challenges and address those attributes. So even though something may have a problem right now with permitting (indiscernible) to supply chain, that doesn't mean we wouldn't consider it. We'd identify that those are challenges and look for opportunities to overcome those challenges to make those technologies more available.

And, clearly, customer acceptance, particularly for behind-the-meter solutions, is important. Some have better acceptance than others. And we have to look for ways to address that when we're thinking about options, particularly for situations where we need to get something built in sooner rather than later. And it may not -- it may take something that has great customer acceptance now and work to develop customer acceptance for other approaches or technologies down the road.

Next slide.

This relates more to attributes about particular technology in terms of GHG and criteria pollutants, the

ability to dispatch the resource and, basically, the duration of its availability, the alignment to our overall policy objectives, and its importance in supporting equity in diversity communities. So those are attributes that we want to be able to consider and think about in terms of their ability to address these particular attributes well because they're all important attributes that we are going to consider in our analysis.

You can go to the next slide.

What we envision for our qualitative analysis is maybe a comparison of technologies by looking at their achievability and their -- and kind of qualifying their performance. So this is illustrative, but we're thinking of, you know, achievability in terms of it's available now and available through 2035 with checkmarks. It could be technologies that may not be available in the next couple of years but could be online and successful from '25 and beyond, as an example. So we want to think about how quickly we can get these resources online. That will affect investments in the near term in the long term.

And on the right hand side, using Harvey balls are the equivalent try to characterize the other attributes in a qualitative way so that we can make some comparison against those different attributes. Again, not necessarily a perfect example, but it helps us get information about

where there are challenges and how -- and where we might want to seek solutions to overcome some of those challenges.

Next slide.

We're also going to be looking at quantitative analysis, particularly looking at their ability to be deployed and the amount of megawatts we can get online, and in what years, as well as the levelized cost estimates. So we're looking for information, both on put deployment potential for different technologies year by year, and also the cost and how those costs might vary year by year. Because just because something can be available this year at a certain cost doesn't mean it wouldn't be cheaper down the road with more developments. And so we're looking for feedback on what those cost curves look like and what deployment might look like based on available manufacturing capability or other aspects.

And we also want to be thinking about this, potentially in a low, medium and high range perspectives. And these aren't necessarily perfect and we want to be able to think about the range in which they could be available and the range which they might be cost effective over the long term. We recognize things that, you know, for example, with DOE's efforts to try to get the cost of hydrogen down. And if that's successful, that could make

hydrogen much more successful, much more cost effective down the road than it is right now. And so we want to be able to take those factors into account.

Next slide.

So in our RFI and public feedback, we're interested in, you know, are these the right set of attributes? Are there other attributes we should be considering? We have not put a weighting on any of these attributes. We're looking for feedback on whether any of them should be weighted more than any others. And also looking for data or sources of data that we can utilize to fill in the qualitative attributes so that we can evaluate and compare these, again, near term, midterm and long term as there are opportunities.

So those are the questions we're putting out to the public for feedback. And we're also going to be putting these into the RFI to receive feedback on so that we can inform our analysis and make sure that we're building out our analytical approach, as well as gathering the data necessary to do the comparison.

So we'll pause there and turn it over to the dais to see if there are any questions on our preliminary thinking on our methodology, and then we go to Q&A from public.

VICE CHAIR GUNDA: Yeah. Thank you, David. No,

I think this is a really, really important element of the analysis. And I just wanted to give a shoutout to, you know, Amal (phonetic) and team from Guidehouse, who has been supporting us, on some of this thinking as well.

So I think, yeah, I think I just wanted to lay this out for people who are in the conversation together today. So we want to be able to make sure we're thinking about what we're solving for; right? What are the options we're looking and what are we solving for?

I just want to reiterate, because I think it's important, we'll try to get it on record in the RFI, we're trying to solve for extremely near and midterm issues of reliability and just volatility. That's an important element we're trying to solve for.

We have another thing we're trying to solve for, which is through the 2030 timeframe, you know, are there enough options as we conduct our reliability analysis under a variety of scenarios, are there enough feasible options to let go of Diablo, and it is prudent; right? The Commission has to vote on that. So the analysis that we do collectively, and then all the stakeholder input, has to be robust enough to make that judgment call.

And I think the third element that we're trying to solve for is as we move forward in the SB 100 goals, given the levels of procurement we are trying to do, and as

we adjust for climate change impacts, you know, the volatility might continue to last. And how do we ensure that we are scaling the appropriate clean energy technologies as quickly as we can?

So we're trying to solve for all that; right? And then, so when we try to solve for all that, one of the first things we tried to do, as David mentioned in the previous part of this section, is, you know, just what are the different technology options? How do we frame those options? And how do we bucket them so that we can, to the extent that we are trying to address the barriers and solve and invest in a we have, you know, we a cleaner way of talking about them? Obviously, we can talk about 1000 different solutions but we coalesce around, you know, buckets of solutions. So that's kind of one element.

This element then is, to the extent that we have technologies, you know, for us to be able to vote on an important prudency question of can we deploy options to negate the need for Diablo, we really need to think through the feasibility, how many megawatts are available? You know, are we looking at the right attributes in determining whether a particular technology is something we want to consider as an alternative and so on?

So I think it's important. This section is about, you know, once we have the options, you know, how do

we judge those options through a variety of lenses of interest for us, both in terms of solving all these three layers of problems? And then you know, you know, how do we do it? really quantify it? You know, how do we quantify it? All those are important questions.

So I just wanted to level set. And I really liked the way you're going here, David, and just want to level set that here from my perspective.

COMMISSIONER HOUCK: This is a really good discussion, a lot of good information. And I know, you know, the questions in the comments in the Q&A make some really good observations and I think are going to be really helpful as you're moving forward with this analysis.

VICE CHAIR GUNDA: Sorry. I'm looking for --

MR. ERNE: Is Commissioner Monahan still on?

VICE CHAIR GUNDA: Commissioner Monahan, or Commissioner McAllister joined, as well ,a little while ago. Any questions?

COMMISSIONER MCALLISTER: I did, yeah. Sorry, I may have missed some stuff, so I didn't want to jump in first.

But appreciate, definitely, this sort of taxonomy or this methodology approach. And, you know, I think it's still pretty open architecture, although you've still -- you know, you've got a bunch of stuff flagged that needs to

go into the bucket of considerations. And so I think that's an appropriate place to start.

Obviously, I would really encourage folks to think, submit comments, not just now but just ongoing, as to how we can, I think, you know, sort of have -- check multiple boxes, you know, really could achieve multiple things .

On the demand side, in particular -- that matrix of resources on the supply and demand side I think was compelling and probably can be added to. But on the demand side, you know, Commissioner Monahan, this morning, brought up equity perspective, and I think on the demand side that is probably most acutely important to consider as we look at investments in our buildings and how to broaden access to zero-emission vehicles. Those considerations, I think, need to roll up with reliability in a way that we are transparent about. And, you know, there are all sorts of broad social -- potential social benefits to those investments.

So while on the one hand, yes, we absolutely want reliability, and that's what we're here to talk about today, we also have the opportunity to improve, you know, indoor air quality, access to sort of these transformational technologies, economic growth, and a bunch of other more broad, you know, benefits that will accrue

from all these investments as well.

And so how we weight those different approaches, you know, to David's kind of plea, too, for input, how we how we weight and prioritize the various approaches is going to matter for people on the ground, you know, in the real world out there.

So, really, it's a multifaceted conversation, and I think we're up to having it, and it's a really exciting moment to be approaching this topic, so I appreciate everybody's engagement. But thanks for thanks for the -- it was a very good level, I think, for the tee-up here with the presentation, so thanks, David and team.

COMMISSIONER MONAHAN: Yeah, agree. And I do think this is a really interesting taxonomy. And it will be great to get public input on whether this is the right set of attributes or what else should be added.

And one of the issues, I think, that we need to wrestle with this this time quality around the assessment, that, for example, on achievability, we might be able to say like, well, in the near term, vehicle grid integration technologies are nascent. And so the achievability is low in terms of, you know, near term, but over time, as technologies improve, one would think that the achievability will grow. So this idea that there's a time dimension to these attributes as well.

MR. ERNE: I agree. I think that's very important and why we want to look almost year by year in terms of the deployment of the technology, because we think that, over time, some of these options, like V2G, will increase and could be a much more substantial opportunity than it is right now and we don't want to overlook that. We want to make sure we're considering that and, certainly, continue to identify barriers to making those technologies happen more rapidly.

VICE CHAIR GUNDA: Yeah, just adding to that, I think, Commissioner Monahan and Commissioner McAllister, I absolutely agree with you.

One part of, Commissioner Monahan, what you're mentioning is, in terms of achievability, too, this is where I think we look forward to the stakeholder input on other barriers; right? So we're going to talk about that because I think there is a natural level at which some of these might grow and might not grow. And what are some of those things, even if we're thinking about a specific technology or an option or an approach, on the long term, you know, like, what are some key elements that we need to solve? And if there is, you know, legislative support that we need or, you know, financial support, I think it will be helpful to understand that so we could put that as a recommendation as we move forward.

MR. ERNE: Any other questions from the dais?

VICE CHAIR GUNDA: Back to you.

MR. ERNE: Alright, should we go to -- any questions in the room?

MR. DAY: Hey again. It is on. Michael Day again, responding in a personal capacity. Two things.

One is that I'd encouraged the sort of question, ask if Staff has been paying attention to the PUC proceeding on the Microgrid Incentive Program? There's been a really robust amount of interaction, including from a lot of stakeholders that don't normally participate in these proceedings. And they're specifically getting into the evaluation criteria, because a lot of the back and forth there has been on the scoring criteria. But in that, there's been a really robust discussion about what are the different criteria by which something should be evaluated. And I'd encourage some of that input to be ported over to the extent possible.

The other one, it -- oh, I'm sorry.

MS. DECARLO: Oh, just really quick.

Just when Staff -- I would just appreciate not getting into the substance of that because it could be considered an ex parte communication, so --

MR. DAY: Okay.

And so the second part is, is it -- we use the

phrase disadvantaged communities, and it's used in a lot of different ways. And I'd encourage us to look at an expansive discussion about it. Obviously, CalEnviroScreen is a great tool if you're thinking about placing a thermal plant and you don't want to put it in communities that have been really disadvantaged by how it was placed. But there are other metrics that we should be looking at and I'd encourage a more expansive. So is it economic? Is it -- if you look, for example, at Lake County, that has some severely disadvantaged census tracts, but also gets subjected to regular de-energization events, which has a really much more difficult time for families that are in those areas.

I'd just encouraged that whatever we're going to end up coming up with in terms of the scoring rubrics and methodologies should take into account -- shouldn't just start, you know, assuming that we already have the concept of disadvantaged communities worked out and should look at it in a more wholistic basis.

Thank you.

MR. ERNE: Very good point about the disadvantaged communities. That's actually a really large portion of our IEPR this year, is looking at equity communities and how best to integrate the consideration of equity into all of our programs, and how to create equity

indicators that will be useful for guiding those programs. So definitely agree that DAC is not a perfect definition. I think we all recognize that and we need to think about a different way of categorizing and supporting those communities.

MR. DAY: So apropos the microgrids proceeding, yeah, there's a set of very detailed comments filed and the microgrids proceeding by the Microgrid Equity Coalition, so that's all in the public record. It’s very germane to the conversation.

And specific to this issue of sort of valuing local DERs, I think it would be really important to assign values, you know? I would sort of posit that, you know, 100 pennies is worth more than $1.00. And the value of having the DERs is not adequately sort of represented in the models that I've seen. There's different models that are consideration of PUC. But specifically assigning a value to how we have a more resilient system with thousands of DERs would be an important part of the sort of the scale in evaluating the relative merits. And I have not seen that to date, so I think it would be sort of why as part of this conversation.

Thank you.

MR. ERNE: That’s a very good point. I don't think we'll come to that conclusion within the next couple

months. But we do have an open DER proceeding. And through that proceeding, we're intending to conduct analytics using available AMI data to try to help inform how we can think more clearly about deployment of DER and its value, its benefit, to the customer and to the grid, both.

Any questions online?

MR. YANG: So we have nine questions on Zoom.

First question from Sam. "How are land impacts and local resilience and reliability considered?"

MR. ERNE: So land impacts, we're considering that for SB 100. We're going through a whole process on that to understand the land impacts for large deployment of DER -- or large deployment of renewables. We have not considered that so much for the distributed assets because we haven't considered that as being much of a as much of a challenge as for the large resources.

And local resilience is something we are -- and reliability are something we're thinking about. We don't currently have great models for looking at that but we're looking at ways to improve our ability to understand local reliability and resilience.

MR. YANG: Next question from Jan.

"Does cleanliness include build emissions? I note your solar example says no direct emissions, but

manufacturing, and even transport, does create emissions."

MR. ERNE: Good point, something we should be looking at for our overall cleanliness evaluation.

MR. YANG: Next question from Peg. "Might costs and efficiency be an attribute?"

MR. ERNE: So cost is included into our quantitative analysis. And efficiency, you know, I view efficiency more on the capacity -- on the dispatchability perspective is where that's captured. So I think we've captured those in our existing attributes. If I'm missing something else that you're pointing to, then please provide additional perspective and we'll certainly look forward to evaluating that.

MR. YANG: Next question from Daniel with the Sierra Club.

"How do you plan to use your individual analysis to compare a portfolio of supply and demand options to a singular resource, Diablo Canyon?"

MR. ERNE: It's a really good question. It's challenging. So part of what we're going to be looking at is what we think the variety of funding resources that are out there, what they are intending to support in the near term. So there were a number of programs, Long Duration Energy Storage, our -- the CPUC's SGIP, other programs that

are going to be funding a variety of activities. And so we're going to try to take a look at what those programs might already be doing or expected to be doing to create portfolios and looking at a variety of different parameters that could influence how those portfolios might be deployed. And so we're going to create like a high, medium, low type options, set of options. And we're not quite at that point yet but that's certainly something we have to overcome. And if you have recommendations, we look forward to hearing.

MR. YANG: Robert Perry with Synergistic Solutions.

"Doesn't qualitatively analyzing a single resource, like solar, miss the larger picture of how that resource operates in combination with storage, VGI, and other technologies that provide dispatchability?"

MR. ERNE: We will be looking at resources in combination, like solar and storage, so we will be evaluating those as combinations.

MR. YANG: Question from Sam. "Your previously identified load shift as a major opportunity, how will you use -- how will you evaluate resources towards meeting this result?"

MR. ERNE: We're in the process of looking at some -- conducting some analysis with Guidehouse's support

on load shift and opportunities for load shift. And so we plan, as we develop that analysis out further, feeding that into this analysis, as well as the load shift goal. So we're in the process of developing that methodology out and we'll have that covered in a future workshop.

MR. YANG: "As electronic grid resources and DR SCADA systems are connected to the grid, given the scarcity of U.S. inverter manufacturing, has CEC given consideration to national security risk exposure to cyber attacks?"

MR. ERNE: We have not gotten to that level of detail in our analysis at this point but we will be identifying those as potential challenges for deployment.

MR. YANG: "Will the report include potential policy changes that need to occur to better unlock resource deployment potential? For example, community microgrids have limits on when they can island and where they can be deployed. Front-of-the-meter interconnection timelines and costs could also be addressed."

MR. ERNE: Yeah, the answer is, yes, we will have policy recommendations that will be part of our reports, both on the reliability side and for the program reports that we'll be developing.

MR. YANG: "Have you considered dollars per

megawatt of reliable capacity or costs per ability to serve from 4:00 to 9:00 p.m.?"

MR. ERNE: Those are good factors for some of the programs. They may not be good factors for other programs. But that's really good point that we should be evaluating.

MR. YANG: The second part of that question. "And time to in-service dates to address near-term reliability dates, can attribute weighting change over time?"

MR. ERNE: Good question. We don't currently have any attributes weighted one or the other. So we look for your feedback on how to best structure that analysis. I'm interested in hearing your perspective.

MR. YANG: Last question. "What level of confidence in future SGIP funding is appropriate in this work?"

MR. ERNE: That has yet to be determined. We have set up some conversations with CPUC staff. I don't think -- I won't speak for them but I think we have to have conversations about that and see what their thoughts are. But we're in the early stages of those conversations.

Alright, well, thank you so much for the questions and the feedback on our lists and our attributes.

Oh, Brian, is there another question?

MR. SAMUELSON: Yeah, we have two raised hands.

MR. ERNE: Oh, okay. Let's go the raised hands then.

MR. SAMUELSON: Julia Levin, you are available to talk.

MS. LEVIN: Hi. Thank you. Julia Levin with the Bioenergy Association of California. And I also sort of put this question in the Q&A, but I think I didn't get it in in time.

I apologize, I missed, actually, the presentation because I've been toggling back and forth between this and the Air Board's Scoping Plan workshop today, so I'm reacting more to the slides than the presenters.

But I am concerned that on slide 53, bioenergy is not even mentioned as a distributed energy resource, even though it's required by state law. Under renewables, neither bioenergy nor hydrogen are listed. And then under storage, it doesn't mention renewable gas of any form, even though it can provide long-duration energy storage. So I'm concerned about the complete omission of bioenergy, and then hydrogen in several places as well.

I also wanted to say, in defining cleanliness attributes, I think we do need to talk about the lifecycle impacts of different resources, including where the raw materials come from, for instance, for batteries, and end-of-life disposal issues, which we really have not begun to

address, even though we're going to talk about a massive build out of new resources.

And then finally, under attributes, I would say by far the two most important, from a climate standpoint, it is the reduction of short-lived climate pollutants, which has never been mentioned in the presentation. And from an energy reliability standpoint, I think it's the need for more firm renewables.

So those will be our top two recommendations for attributes that we should be looking for.

Thank you.

MR. ERNE: Thank you, Julia. And just to point out, Commissioner Houck also noted that we had not included the bioenergy and hydrogen in our -- specifically called it out. In our heads it was there but not in the wording, so thank you for additionally pointing that out. And we look forward to your additional input, either in response to the workshop or the RFI.

MR. SAMUELSON: Bert Wank, you're available to talk.

MR. WANK: Yeah. Good afternoon. Bert Wank, CEO of InfiniRel Cooperation from (indiscernible) recipient.

And one part really pops up as a great tool, I would inject, as a quantifiable method for addressing the reliability of any system, which is called FMEA, a failure

method and effects analysis. That's been done by numerous industries that we can draw from. Aerospace, automotive, semiconductor, and telecom, they all have used that process. That would be one easy way to map over and get a quantified point of reliability, which then also impacts availability of any resource that's been considered.

MR. ERNE: Thank you.

Any other questions? That’s it.

Alright, so at this point, we're going to move to a discussion of the distributed electricity backup assets program. And we have Deana Carrillo on Zoom, who will be joining us to give an overview and talk about her program.

Deana?

MS. CARRILLO: Thanks, David.

Good afternoon, everyone. My name is Deana Carrillo and I'm the Director of the Renewable Energy Division. And we are the team here at the Energy Commission that's going to be working with David's team to help stand up DEBA, or as we've been calling it, but it’s the Distributed Electricity Backup Assets Program.

Next slide, please.

So we're just reviewing a few slides today, or a little bit about the DEBA. We've got a broad foundation now of the general overview and the broad perspective that the Energy Commission and sister agencies are taking to

explore these issues. And wanted to give you some insight in how we will be thinking about launching this program and the information that you'll be providing in the RFI and in your public comment and how that can help shape it.

So a little background to begin. You've heard a little bit about this before, but for those who were with us fresh this afternoon, Assembly Bill 205 was a budget trailer bill approved by the legislature and the Governor at the end of June this past year. It created the Strategic Reliability Reserve. And the Distributed Electricity backup Assets Program, informally referred to as DEBA, is a component of those efforts.

The program's budget is $700 million over the next five years. And as it's been mentioned, its purpose is to incentivize the deployment of cleaner and more efficient distributed energy assets that would serve as on- call emergency supply or load reduction with the state's electrical grid during extreme events, like we have this past September.

This program is statewide. And while it supports the installation of new assets, awardees are required to participate as an on-call emergency resource under its sister program, the Demand Side Grid Support, or a similar program, such as Emergency Load Reduction Program in IOU territories. And we're still working on some of those

details as we get those program off the ground.

Awardees for efficiency upgrade projects must also comply with the state's mandatory reporting of GHG emissions and market-based compliance mechanisms.

Next slide, please.

So as I mentioned, the goal of this program is to spur investments in cleaner assets for distributed electricity and support during emergency events. DEBA can fund efficiency upgrades, maintenance, and incremental capacity additions to existing power generators, as well as the deployment of new zero or low-emission technologies, including but not limited to fuel cells, energy storage. These are some of the potential technologies that we have been brainstorming about of what we could be able to support under the program. They're just examples.

Following this workshop, you've heard that we'll be releasing an RFI to obtain information on what type of technologies, automated devices. We do use a few acronyms on this slide. V2G is vehicle-to-grid, for those who might know, and V2B would be vehicle-to-building.

With that, you know, we're really going to be looking for your ideas, your concepts about what type of technologies we should develop this program to accommodate to help get those launched.

Next slide, please.

Okay, so this brings us to the next steps. We're here today at this workshop. And we'll be seeking to get some initial stakeholder input on their requests for information.

After that, we'll be exploring what type of deployment we'll be able to adopt, whether it's a grant funding opportunity, potential guidelines. We have some ability to be flexible and innovative with this approach. And the goal is to develop those instruments for administering the program this winter, get additional public feedback, and to have our first incentive dollars out this spring, ideally, to have new assets available next summer. It's a very quick timetable. It's ambitious. But that's what we're going to shoot for as we look for some early deployment of cleaner backup assets for extreme events.

So that's kind of the 101 on DEBA at the moment. I can open for other questions.

I can also share that as we look at this RFI, some of the questions that we'll be adding to help inform DEBA is a better understanding of where some of the tensions are in the market for some of these technologies, what type of incentive levels would be appropriate to really unlock the space in potential new technologies, and what type of surety folks might need as they're looking at

financial investments, and just their own bottom line, to either perhaps replace backup generators with fuel cells or batteries, and really bring some cleaner technologies to support our energy reliability.

I spoke a little quickly. But we're open for questions and other feedback or questions from the dais.

VICE CHAIR GUNDA: Thank you, Deana. Just wanted to take the opportunity to thank you and Ashley and your entire team for doing an amazing job launching the DSGS Program this summer. And I know it's going to be a lot of work launching this program as well.

So just as a kind of a summary clarification, I mean, I'll just state it and let me know if this aligns with what you're thinking.

So in terms of DEBA, it's like some of the technologies we fund, you know, especially the gadgets that you mentioned, could be enabling to be a participant in DSPs in the long term; right?

MS. CARRILLO: Correct. So if you look at DSGS, or the Demand Side Grid Support Program, that was also a part of the Strategic Reliability Reserve and DEBA, they partner. And the fact that DEBA can help incentivize the purchase or the installation of the actual equipment, DSGS will be there to offset the costs of running or any operating costs to participate in an emergency event.

Complimentary that way.

COMMISSIONER HOUCK: Yeah, thank you, Deana. That's a lot of -- this is really important. Because I think I've said in a number of different times that I think the distributed energy resource work that we do, combined with the load flexibility and grid upgrades, is going to be some of the most important work that we're going to be doing over the next couple of years. And, you know, looking at this program and the funding and the opportunities here, I think we have a lot of opportunities.

But I just wanted to ask, are you also, in developing the program, coordinating, I imagine, with the Commission's DER, OIR? And I know we have high DER grid planning proceeding at the PUC in regards to just interconnection issues, because I know we've been seeing that in different parts of the state. And for things like deployment of electric vehicles, with the V2G and some of the microgrids or other options that may require interconnections, just working with either the IOUs or local governments and making sure that these opportunities are going to be able to be utilized within the short-term timeframes that that we're looking at? So I think that's more of a comment.

And then just looking at whether you'll be targeting disadvantaged communities or tribal communities

in looking at energy storage or microgrids through the program, will -- is that -- do you have specific targets for those communities, or will you be doing specific outreach?

MS. CARRILLO: Yeah, good question. We don't have specific targets established in statute. And so we have some flexibility to have that informed by public comment and, also, our collaboration with both the -- sorry, with the PUC, as well as DWR, on kind of where we focus some of these investments. And so we will want to have some close coordination internally, as you've mentioned, between the sister -- the state agencies, as well as getting that input from public comment.

We are connecting on the staff level. That interconnection references is important, so thank you for that.

And so the answer is, yes, we have a lot of opportunity. That's definitely where we're focused. And we've got some opportunity to shape that now. I think definitely replacing some of the backup generators that are sometimes utilized and extreme events, especially this last September, and they happened to be primarily located in low-income communities, making sure that we can get some clean technologies into those areas will be really important from an equity perspective.

COMMISSIONER HOUCK: Thank you.

MS. CARRILLO: And I think the next slide brings us to Q&A. And we can open up to Q&A from the public, if there isn't any other questions on the dais?

COMMISSIONER MONAHAN: Oh, I just had one, Deana, a comment and a question.

First off, my comment is, if it were anybody else pulling together this program and I was looking at that timeline, I would say that's not achievable, but now we know you could do it even faster, so -- which you did with DSGS, so it's pretty impressive. Still a very aggressive timeline.

I'm wondering if you could just kind of give us a sense for what size resource or what -- sort of what's the -- kind of household engaged in DEBA? Like, what are you thinking in terms of kind of who is this targeted towards?

MS. CARRILLO: Yeah, that's an interesting question. And if I could be so bold to perhaps turn that back to the dais to see what some ideas may be on -- because, one, I think we have some flexibility. Two, it's not utility-scale assets that we're looking at, definitely looking for some flexibility on aggregators and other kind of widespread equipment, perhaps, that might make a big difference.

But I'd be interested in the dais's thoughts, or to those on the dais, either virtual or in-person, on their thoughts of, you know, where that sweet spot would be for this particular investment? Again, the goal is to incentivize the installation of new equipment or technologies to be relied upon during extreme events.

VICE CHAIR GUNDA: Deana, Thank you. I'll just add a couple of things. I think Commissioner Monahan said the first part, I think, you know, just kind of making sure the explicit callouts in the legislation, the explicit call outs are -- there's some supply side explicitly called out, and those include efficiency upgrades at existing power plants. And potentially, to the extent that there is deliverability at existing power plant sites, you know, deploying clean energy solutions, you know, whether it be fuel cells or storage, to increase the capacity. So that's kind of like called out, specifically.

And then from technology options, fuel cells and storage were called out specifically, but then the rest of it is really up to us; right? So I think the supply side is constrained to those buckets.

And on the distribution side, I think that the thinking here is really, as Deana was alluding to, this came out as part of the Strategic Reserve discussion. And the initial ambition was to make sure, you know,

collectively between the $700 million for DEBA and the $300 million, nearly $295 million, for DSGS, CEC will be able to put up at least 500 megawatts, right, five 500 megawatts to 1,000 would be the upper limit of the ambition.

So I think the way we are looking at is, when we look at the distribution side, the initial -- I mean the discussion changed over time. But the preliminary discussion was maybe to just, you know, take into account that a number of these backup generators will be there no matter what; right? Whether the grid is reliable or not, the backup generators are there. And to the extent that we want to rely on them, can we decarbonize them and clean them, and even from a quality perspective, and then unroll them into a DSGS Program for long-term benefit to absorb volatility.

And the thinking has since changed a little bit from, you know, over the discussions. So I think now there is an interest in really thinking through deploying clean options and gadgetry that would enable the deployment of these clean resources. Specific interests have been on the water agency side, I mean, given how much they've supported this, this summer, and the opportunity that exists.

Similarly, on the ag side, it could be, you know, incentives through the DSGS, but paid with some grants to meet potential controls.

So all of that is on the table. And at this point, we're thinking through, how do we summarize them? How do we put those options on the table for public consideration and move that forward?

I don't know if that answers the broad strokes of the conversations we had.

COMMISSIONER MONAHAN: Thanks, Vice Chair. That's really helpful. I mean, it seems like these are good questions for the stakeholder community, too, around should we focus on aggregators versus individuals? Because I just think that there's going to be so much cost associated with individual households, that, really, we want to think about what's the right amount of aggregation that makes sense.

But I could envision, you know, we have some projects with school buses, V2G, certain classes of vehicles or segments that we would want to just cultivate from an early stage to see what could be achieved over the long run, so sort of almost like test cases for where we see a possible big amount in the future but maybe not so much the summer.

MS. CARRILLO: Yeah. I appreciate those comments if we could go to the -- oh, and I'm sorry, Commissioner McAllister, it looks like you've got your hand raised.

COMMISSIONER MCALLISTER: Yeah. I guess I wanted

to say that I think this is a really great approach. I mean, I think, you know, we're at the front end of this and are -- have kind of a preliminary structure for our thinking, and we definitely want feedback on that.

I guess I will add, I have a comment and a question.

You know, when we talk about aggregators, to some extent, their success, and therefore what we would kind of pay for really, in terms of, you know, capacity kind of depends on the details really matter. And one of those details is how do we -- you know, what requirements do we impose on these investments? What conditionality do we impose that ensures that we're measuring properly and that we're showing what turned up, you know, well?

And so to this, you know, we're going to work through aggregators, there needs to be a very well established protocol, right, for how -- you know, what -- are we paying for equipment? Are we paying for capacity? And if it’s the latter, certainly, how are we measuring that and how do we do that in a way that kind of jives with the marketplace in a fair way?

So I kind of wanted to just put those issues on the table, because I agree with some of the commenters, obviously. I mean, this is something, you know, I and many others have been working on for many years. How do we

unlock the demand side flexibility? And Commissioner Houck is a wonderful partner, and others at the PUC, on these discussions to put these new solutions in place.

So, you know, this is a great opportunity to kind of prove some of that out and begin to grow that marketplace in a substantive way.

So, I guess, how much thinking have you gotten about sort of what those sorts of resources would look like in terms of a procurement?

MS. CARRILLO: Yeah, good question. So I think the power of that, of aggregation, you know, came to the forefront when we were developing the Demand Side Grid Response Program or Grid Support Program over the summer, very quickly. And so -- and part of the complexity around aggregation and planning at the local utility level rose at that time, and so the initial thought was, due to that complexity with the different market actors, that we needed some more time to explore that.

So that's what we're doing now, both with the Demand Side Grid Response Program -- Grid Support Program where that program offers payments for load reduction during extreme events. And we'll be pulling that through and continuing to grapple that through DEBA.

So I guess that the short answer is we've started working on it. The timeline has been pretty quick. And so

we'll really be seeking some feedback from folks, not only during this workshop, but I think this workshop will help inform the requests for information that we're putting out and refine some of our questions to dig a little deeper through the process as we get responses in November.

And, you know, it did speak really quickly. Maybe if we could look at that timetable again?

And, Commissioner Monahan, you did raise the issue that this is ambitious. And I want to acknowledge that, that this is a goal that we are -- you know, we know that we're going to have additional extreme events in our future. And we want to be able to invest, you know, make investments, so that we have assets to call upon next summer. But this is just getting the program rolled out.

And one of the other elements that we want to do is be able to provide stability for the market on these incentives so that they can make both short term, midterm, and some longer term investments and really count on it. So balancing those, it's going to be a balance, and that balance isn't always easy, so I look forward to those comments.

VICE CHAIR GUNDA: Deana, I just want to make sure I asked for this clarification. And, you know, this is an opportunity to, for us to have this conversation, which we're doing because of the big issues.

The DEBA is kind of like limited to the -- limited to actual material investments; right? I mean, just want to make sure that we're on the same page on that, that it's like either, you know, providing incentives for actual equipment or controls and such, and then the DSGS will then marry the DEBA investments under an agreement to bring them into, potentially, an energy payment as needed for participation in grid support? So just wanted to make sure of that.

MR. ERNE: Yeah. Yeah.

VICE CHAIR GUNDA: Okay. And I wanted to ask that to Deana, too.

So, Deana, am I missing that? We're good? I mean, that is actual equipment; right?

MS. CARRILLO: Correct.

VICE CHAIR GUNDA: Yeah. Linda is shaking her head, yeah. Okay.

COMMISSIONER MCALLISTER: I mean, I guess the reason I ask the question is just, you know, there are -- we don't want to be out there subsidizing equipment that then doesn't actually serve our needs; right? So we -- there's -- I mean, yeah. So, you know, when we put in place, you know, these parallel programs that are complementary, we need to sort of build that in, that they actually are complementary in practice.

VICE CHAIR GUNDA: Yeah. Commissioner, I think the idea would be whatever we invest, and correct me if I'm wrong, Deana, whatever we invest in DEBA would have some sort of an agreement to be a part of --

COMMISSIONER MCALLISTER: Yeah.

VICE CHAIR GUNDA: -- the emergency --

MS. CARRILLO: Yeah. So there will be -- there's a statutory requirement that any assets, equipment, investments that we make for DEBA, that they are required to show up for the demand response moments, or the extreme heat event moments. You know, I think we will put legal provisions in there to make sure that there's both, at the end, that there's a carrot and a stick in that, using that colloquial language, in that when we make the investment, that there is a requirement to be there when we call upon folks.

COMMISSIONER MCALLISTER: Okay. Great. Thanks for that.

MS. CARRILLO: But that language isn't drafted yet. And I'm sure we'll get lots of feedback.

COMMISSIONER MCALLISTER: And, you know, we want to avoid contested ground, I guess, is what I'm saying, you know, like people -- yeah, we need to be just very clear, and then help people those expectations --

MS. CARRILLO: Yeah.

COMMISSIONER MCALLISTER: -- beyond that. Thanks.

MS. CARRILLO: Thank you.

VICE CHAIR GUNDA: And, Commission McAllister, just another thing, if you have thoughts on this, I think the DSGS Program, you know, we kind of pursued two types of incentives this year, that kind of is a sister program to this, basically kind of providing an energy payment outright for, you know, energy savings, and including a second pathway, we provided a standby, as a way to make sure we make people whole.

But Erik Lyon in our office has been taking point on constructing kind of a third track of market integration and making it easier for participation. So I think you made this point several times, which is, you know, we want to make these investments in a way to not get into emergency rather than responding in an emergency, so I think that's actively being thought, but any thoughts you might have on that would be helpful.

COMMISSIONER MCALLISTER: Great. For sure, yeah. Yeah, much more to talk about here, but that was a great start.

MS. CARRILLO: Great. Then I think we can open up to Q&A, or questions and comments from the public on our initial thoughts.

MR. ERNE: And, Deana, we have several within the room. They're getting ready to tee up. Go ahead.

MR. DAY: Hello. My name is Michael Day and I'm speaking in a personal capacity. Two points to bring up.

One is for DEBA, in a lot of deployments here, local support is going to be really important. But it's interesting because you're going to end up having two ends of the spectrum there. At one end, you could have it's required to have a local government apply for the funds. That's great, but it actually brings up another problem. And the other problem is, is that because they're typically going to be partnering with a commercial company to do that, you end up needing an agreement between the local government and the commercial company that can be difficult to put together, particularly on a fast timeframe.

So that, a true public-private partnership for an energy installation, can take a while, and so it may end up precluding some local communities from participating, particularly those that are relatively under resourced.

At the other end, you could have a commercial company saying, oh, we've got all these great assets, and they've got no participation with a local government, they've got no local buy-in, yet they're saying that they're going to operate a microgrid that benefits the community. They may not be in alignment.

I think one of the things that could really help DEBA be good is if it did have some mechanism for either requiring or giving an advantage to those -- to projects that are proposed that can demonstrate local government support, but maybe not all the way to be needing to be a financial partner, and have local government already have that public-private partnership in place. So at some point, in between the extremes of the spectrum, could be helpful.

The second part is in terms of being there, when required, absolutely, that's where everybody wants to be. That's where you think it's going to be. But just keep in mind that there are going to be a lot of situations where the distribution system operator is going to, particularly when you get to microgrids, the DSO is going to have control over the dispatch and the scheduling.

And so if the DSO says, we have this many megawatt hours or this many kilowatt hours, and they're dispatching it at a certain time that doesn't coincide, and the equipment responds and they've done what they were ordered to do by the DSO, that can't be held against the parties that are participating in DSGS or in DEBA.

Thank you.

MS. CARRILLO: Great. I appreciate your comment and in your question.

One clarification is that there's no local government requirements for this program. It's open to all entities, but always encouraged.

Other questions or comments in the room, David?

MR. JOHNSON: Hi. Kurt from the Climate Center, just following up on Mike's comments.

Yeah, I mean, if these programs are going to succeed, they're going to necessarily need to have local government buy-in. And one of the huge missing gaps currently in the California State Energy Policy is systematic support to local governments, community-based organizations, in planning what the DER buildout looks like in their community, questions like: Well, where could the funds from that come from?

Well, you know, there was lots of different buckets. As a matter of any project development, there's typically sort of a project administration/soft cost element of any total project costs. That must go to local communities, local CBOs, to help plan these things for buildout. So that seems like a no brainer decision for all the DER Programs.

Following up on Commissioner Houck's comment about like what should the disadvantaged community carveout be? Well, there's benchmarks. We have state law that, you know, previously was 25 percent, but the Biden

Administration came up with Justice40. The recent allocation of $900 million for new SGIP money, I think the legislature said that 70 percent of those funds, of new SGIP funds, including storage, should go to low-income communities. So if the legislature has just said, we think 70 percent of this should go to disadvantaged communities, it'd be sort of shocking if that PUC came up with anything less than that.

So thank you.

MR. ERNE: Thank you. So that was the last questions in the room, so Deana will move to questions from Zoom.

Chie?

MR. YANG: We have two questions on Zoom.

First one, "Can programmable thermostats be included as DEBA resources?"

MS. CARRILLO: They're definitely potentially eligible. I think the program design, we're still exploring. As you look to what types of technology technologies should be eligible, we'd love to get those comments.

MR. YANG: Second question. "Can fossil fuel generators participate in any way, such as in connection with batteries or as part of a microgrid?"

MS. CARRILLO: Yeah, good question. One of the

statutory requirements for DEBA is that it is zero emission or low emission. We're anticipating the low-emission technologies to include perhaps, fuel cells. So natural gas, so we will see, but I think it's precluded from statute, is my off-the-cuff response.

We're actually hoping that DEBA does the opposite and helps you replace some of those backup generators with zero-emission technologies. Another option could be to replace those backup -- just the fuel from those backup generators to perhaps run off renewable diesel. Just an idea that I've been pushing around a little.

MR. ERNE: Those are all the questions.

Is there anybody who has their hand raised, Brian?

MR. SAMUELSON: Robert Perry, you're able to talk?

MR. PERRY: Yeah. Hi. Can you hear me?

MS. CARRILLO: We can.

MR. SAMUELSON: Yes.

MR. PERRY: Okay. Great. Thanks for the discussion. These are all very important topics. I've been, you know, attending a panoply of proceedings and workshops, all having important discussions.

The one thing that always sticks in the back of my head are all these really ambitious goals that have been

placed, most recently in July, on July 22nd. Governor Newsom is targeting 3 million climate-ready and climate-friendly homes by 2030, 7 million of those homes by 2035. This is incredibly ambitious. And given that housing really intersect with a wide variety of state goals, such as equity, environment, transportation, and energy, I think we need to be mindful of, you know, and have a sense of urgency of implementing these distributed technologies as these new construction developments start happening. Because new construction is the optimal paradigm. It's got the least amount of incremental costs associated with deployment of distributed resources.

So I would urge everyone to think of what we're doing and, you know, continually ask ourselves, is this really moving us to the goal, and can we pick the low fruit, like new construction and demand flexibility, to satisfy our immediate needs in a manner that is not wasteful, you know, and that that doesn't risk stranding of assets and such?

So, again, we have extremely ambitious goals. And we really -- the train -- the housing train is leaving the station. I mean, they're throwing up, you know, hundreds of units all over the state and we really should be trying to develop policies so that those newly constructed assets don't have deferred maintenance already

cooked into it because they're going to have to come back and retrofit and rewire.

Thank you.

MS. CARRILLO: Thank you for your comment.

MR. SAMUELSON: Cal SSA, who are able to talk?

MR. HEBNER: Hello. Good afternoon. It's Brian Hebner with the California Solar and Storage Association. Thanks for this discussion.

I'm following up on the discussion about performance requirements. We agree that there should be very strong performance requirements that are verifiable and enforced. But we're concerned that it sometimes gets intertwined with CAISO market integration, which is not the same thing and has been a huge barrier for storage in being able to export, for behind-the-meter storage exporting. And it's just so limiting to have to predict customer load and holding back what you can do with the battery.

And we can do so much more if we're allowed to export. And that's just been a barrier with CAISO market integration. We'll continue to work with CAISO on that, but it could take some more time before that happens. And in the meantime, we have to build a lot of resources.

So it can be market following. It's not hard to figure out the trigger, it could be an economic trigger,

following the market, that that is sort of isolated, or it could be emergency dispatcher, or a combination of the two. And it even without RA in the current year, it shapes RA needs in future years, such as cost savings, and reduces real-time energy purchases, not to mention, you know, helps avoid blackouts. So if we don't do this, then we, you know, we continue to have RA that's higher, RA needs that are higher than they need to be year after year. And so we can build these resources without being market integrated.

The verification is, you know, is a challenge, just in terms of integrating dataflow. So we shouldn't underestimate that, that just getting the metering and the data analysis integrated will be something that we're going to have to spend time doing, but it's not unsurmountable. And the trigger, again, also, is very solvable.

So I think it would be a huge mistake to just have the programs to be capacity payments only. There needs to be capacity and energy payments. And we're happy to work with the Commission on getting the numbers right. We have a great opportunity right now with new CEC-led programs that are funded to do a dispatch program that has both capacity and energy payments.

Thank you.

MS. CARRILLO: Appreciate your comment.

VICE CHAIR GUNDA: Thank you so much.

Oh, go ahead. Go ahead, Deana.

MS. CARRILLO: Go ahead, Commissioner.

VICE CHAIR GUNDA: No. I was going to just welcome you or Erik, Erik is in the room, to see if there's any comment from you both, so thank you.

MS. CARRILLO: Yeah. I just wanted to say thank you for your comment. You know, one of the opportunities we're providing with this Request for Information is the requests for stakeholders to articulate those barriers and challenges to broader adoption growth. So whether that be issues with CAISO or other market barriers, you know, we're not just looking for the right sweet spot on a financial incentive, but rather within the whole perspective and the whole ecosystem, where are those challenges? Because just because we have a hammer doesn't mean everything's a nail. Not everything is a question about money but, really, it's removing challenges and removing barriers.

And so that Request for Information is really asking stakeholders and industry experts to identify where those challenges are, because it might not be -- as you say, it's not always a financial response. You know, there could be other ways that we could coordinate.

And then, David, I'm not sure if you have anything to add to that?

MR. ERNE: No, I think I'll let Erik respond.

MR. LYONS: Okay. Can you hear me now?

MR. ERNE: Yeah.

MR. LYONS: Yeah. I just wanted to say, this is Erik Lyons from Vice Chair Gunda's Office.

I just wanted to say, we're absolutely thinking about that. We recognize market integration is a challenge. We want resources that the CAISO feels that they can depend on. And so I really am going to be looking for feedback and input from our friends and colleagues at ISO.

But just to let you know that this is a concern that has been raised and we're thinking very closely about, and we want to make sure that it does get addressed.

MR. ERNE: Any other raised hands?

MR. SAMUELSON: Kate Unger, you're able to talk.

MS. UNGER: Hi. This is Kate Unger with the California Solar and Storage Association. And I am really interested in everything that you all are doing. It's a big chunk of work to chew on. And I appreciate all the efforts.

For this part of the workshop, you're focused on DEBA. I think we were all recognizing that the legislature expressly provided for DEBA and DSGS to work hand in hand, so I'm thinking about both. And also wanted to speak to comments from the dais during this workshop.

First, I did want to note, a great way to leverage DEBA funding is to take advantage of the potential for deploying behind-the-meter batteries to store and dispatch clean energy from the already existing 13 gigawatts of rooftop solar installed in California. It makes a lot of sense to center storage because it can help address the duck curve by shifting that existing solar production.

I also wanted to say, it's really crucial to keep in mind that battery storage is not just one way to do demand response. There are substantial differences. And programs for storage should be designed for those differences in mind. And this sort of a refrain you're hearing from us now, the recognition that battery technology allows for exported energy to be included. And going back to things that Brad Hebner has said, but also I think came from the dais, the DSGS guidelines allow specifically for exported energy to be compensated. But that option three pathway with the capacity payment and market integration cuts off that ability to get compensation for the exported energy, so it works at cross purposes by requiring market integration.

And then, finally, I'm interested to hear you say that some resources incentivized through DEBA can participate in programs other than DSGS, such as ELRP. As

I read Public Resources Code section 25792(c)) in DSGS, it seems pretty clear that DSGS participation is required. And I'm curious if you interpret that provision as not applying to all resources incentivized through DEBA? And if so, how you do interpret it and what flexibility is enabled there?

Thank you very much.

MS. CARRILLO: Thank you, Kate. And I may have gotten ahead of myself there. There's still some exploring to do related to DEBA and DSGS and whether, if a technology is in an IOU territory, and how that ELRP and DSGS Programs complementing each other. We're trying to complement but not develop unintentional redundancies, so thank you for catching that. I think if I was probably in the room, my legal counsel might have kicked me under the table, so we we'll get back to you on that clarification.

VICE CHAIR GUNDA: Yeah, they're all nodding and smiling. There's plenty of work to do. Thanks, Deana, for kind of commenting on that.

I think to the extent that there is some unforeseen pathway to collaborate with ELRP and leverage, I think we would want to keep that on the table. I think that's the spirit of what Deana was trying to say.

But you're right, Kate, on what you noted. Thank you.

MR. SAMUELSON: Ben Schwartz, you're able to talk.

MR. SCHWARTZ: Yes. Can everyone hear me?

MR. SAMUELSON: Yes.

MR. SCHWARTZ: Okay. Great. Thanks. My name is Ben Schwartz. I'm the Policy Manager with the Clean Coalition. And I just would like to make a short comment that's following up with what Robert Perry said about low-hanging fruits, and you know, maximizing the value of solutions, community solutions, I suppose.

And just that schools provide a great location for clean solar and storage resources, including microgrids. The Clean Coalition helped facilitate solar and storage and microgrids at the Santa Barbara Unified School District. And our partner for that project, NG (phonetic), also more recently helped equip the Chula Vista School District with solar and solar-plus-storage. And I think that's a great dovetail between local governments and potential dispatchable clean energy for the People program.

Thank you.

VICE CHAIR GUNDA: Ben, thank you for raising that. I think I just want to comment on that one.

I think, yeah, there is a lot of comments we've received, and just kind of over the last two to three months, is to just the support for the local government

facilities, state government facilities, but also the water agencies and such. I think there is a -- I would love to get this in comments. And we should probably follow up on meetings. You know, the comments that were made here, in terms of, you know, let's assume we put a large battery pack or some other resource that can, you know, both provide energy back to the grid or just, you know, a load follow or be a load modifier, right, it really depends on what time do we need, if it's a 4:00 to 9:00 p.m., and if we do not put the energy back on the system, and if it’s a certain facility, there is no load to really load follow or load shed during the time, it becomes complicated; right? So it becomes an asset that's not really being helpful during the grid emergency.

So we need to think through how do we look at different sites, you know, the energy usage patterns, especially the 4:00 to 9:00, and whether load following itself can solve the problem, and the market following itself can solve the problem, or if a certain investment would require us to put the energy back on the grid to really get support from the grid?

So I just wanted to put that out for discussion amongst ourselves and, you know, love to hear comments on that.

This goes to, you know, funding former loads, as

well, right, and former generation, as well, like a fuel cell that might not be able to really go up and down in terms of ramping. You know, certain technologies can, certain technologies can't within fuel cells. How do we think about that in terms of investments would be really helpful?

Thank you.

MR. SAMUELSON: Dan See, you are able to talk.

MR. SEE: Hello. Can you hear me?

MR. SAMUELSON: Yes.

MR. SEE: Hi. I worked in energy for seven years, up until a few years ago, and it really opened my eyes to the needs of the state and/or, you know, globally in the fight against climate change.

I've heard very little concern. I know there is a focus on clean energy in these talks. But every time a nuclear plant is shut down, gas emissions rise. That can be seen at numerous times throughout both the country and globally. California last year got 50.2 percent of its energy in state from natural gas. I have heard nothing in these talks -- I've heard about reliability, which is obviously a concern providing reliable electricity, but I've heard nothing ensuring or done any sensitivity analysis to ensure that we are in a better place in 2030, or 2035, or 2040, than we are today or were last year.

It's very concerning to know that, you know, we're faced with the shutdown of the Diablo Canyon when the IPCC shows an expansion of nuclear in all of its climate modeling scenario, that California is going the other way, you know, attempting to go the other way, to shut down a nuclear plant, a safe, clean, reliable, cheap nuclear power plant. The International Energy Agency shows long-term operation of nuclear as the very cheapest energy source there, is the very cheapest.

So keeping Diablo online is guaranteed, for as long as it's possible, as long as it's safe, is guaranteed to be a cheaper option for reliability than cobbling together whatever we can manage with and get through permitting, get through -- create all these new policies, et cetera. Diablo Canyon, keeping it online as long as possible, is going to be our best path forward.

You guys at the Energy Commission are not policymakers. You don't pass laws. But you are the ones that inform the people that do. So you can't take your hands off and say, well, it's the legislators that's --

VICE CHAIR GUNDA: Dan, you accidentally muted yourself.

MR. SEE: At what point?

MR. ERNE: When you're saying CEC doesn't make the policy but we work with legislators, and then it cut

out.

MR. SEE: Okay. Sorry about that.

Yeah, the CEC doesn't make the policy, necessarily, but you are heavily influencing it. And you know, per everything on your website, that's your role; right? You are the ones that are guiding policy in this realm. The legislatures, legislative people, they don't have the background in this to really know, to really know, what's going on. You guys do and you should. So they need to be informed by somebody in the know. And hopefully they'll listen to you.

VICE CHAIR GUNDA: Yeah.

MR. JOHNSON: Thank you.

VICE CHAIR GUNDA: And thank you. Thank you for those comments. I think, you know, you probably followed the workshop that CEC held on Diablo a few months ago. We had been asked by the Governor's Office to do so. And as you note, we have, in those presentations, showed that, you know, having Diablo could have multiple benefits, including reduction in gas, you know, gas usage; right?

So I think we recognize the value of a clean firm resource, like Diablo, on the basis of both reliability, but also, you know, the zero-carbon nature and the emission standpoint. But I think as you know, there are multiple considerations for the state, including, you know, safety,

you know, local agreements that have been made over time, whatever that might be.

So I think to the extent that, you know, CEC is going to do analysis, we always consider them. And as we mentioned earlier, both in the analysis that we've put out earlier this year, and then continue to do so, we will do those analyses. But I think, you know, to the extent that the policy of specifically nuclear is beyond just the clean nature of it, but also safety and many other considerations that the state has, including the ocean impacts and all, I think it's a conversation beyond just a CEC.

So, yeah, we would continue to do our analytical part, but I think that's where the cutoff is. This is a much broader conversation for the state.

MR. SEE: Am I still on?

MR. SAMUELSON: Yes.

MR. SEE: Okay. Yeah. So I mean, Diablo was supposed to shut in 2024 and 2025. And the turnaround has been largely because of you, I assume. I work with a number of people at a grassroots level, raising awareness of energy and Diablo and the importance of it. Ultimately, I assume it probably came from you and other, you know, like 3CE (phonetic), I think it is, if I've got the name, right. But analysts that sort of put this, you know, put this before the Governor and got things turned around to

extend it at least the five years. But there's no way that in five extra years that we're going to be, with pushing gas out of homes for electrification, to reduce emissions that way, and to reduce emissions in transport by, you know, hydrogen and fuel cell vehicles and electric vehicles.

We're going to increase the electric demand and, thus, ensure the continued use of gas because it's cheap and it's easy and the infrastructure is already in place. We don't have to expand the grid to do it.

So what assurances and what -- you know, I think all the options need to be on the table, including an even further extension of Diablo as an option. It needs to be looked at. It needs to be considered early, as early as possible.

Thank you.

VICE CHAIR GUNDA: Yeah, thank you, Dan. Thanks for your comments. Noted. We please request you to put them in kind of our docket, too. Thank you.

MR. SAMUELSON: Ryan Pickering, you are able to talk.

MR. PICKERING: Thank you, everyone.

I want to echo the last caller in the urgency of Diablo Canyon, you know, and the importance for clarity moving forward.

I wanted to pose to the group, it has been established by the Governor's Office that the coastline that the nuclear power plant sits on is the ancestral homeland of Yak Tityu Tityu Yak Tilini, known locally as YTT. They have written open letters to the Governor, and I've talked with the local newspapers, and I am wondering if the CEC has asked for their input about what should happen at the future of Diablo Canyon powerplant?

Thank you.

VICE CHAIR GUNDA: I'm going to just respond to that, Ryan. Thank you. I know the letters were docketed. You know, we have been able to get feedback from the tribe. Thank you for that. And similar to my comments on the previous -- or on Dan’s comments, you know, noted. Thank you for your information and input there. Thank you.

MR. PICKERING: You're welcome. And thank you for centering indigenous voices. It is part of the CEC's mandate for equity.

And I will remind the group that, in 1985, there was a plan to build six reactors at Diablo Canyon. And there is no physical reason why an action like that cannot happen in the future of California. And I will docket my comments. And, of course, it would be up to the broader voting public of California. But it is important in this climate crisis to keep all of our clean energy resources on

the table.

Thank you.

VICE CHAIR GUNDA: Thank you, Ryan.

MR. SAMUELSON: Anne Hoskins, you are able to talk.

MS. HOSKINS: Hi. Yes. Hello, everybody. It's Anne Hoskins from Generac Energy Technology. And we also now also, now also Ecobee.

So I wanted to talk a little bit about thermostats and, specifically, the opportunity that I think was opened up by the legislature at the end of the session to make it easier for customers to use their thermostats to participate in emergency response programs. Prior to that, you had to have been signed up. If you were in a utility territory, you had to be signed up for utility ELRP Program, and that really greatly restricted the use of those resources, you know, whenever, September 6th, or the date that we keep referring to.

And so I just wanted to know what the plan is for getting it clarified that customer -- or residents who have thermostats will be able to share their resources and participate in demand response programs outside of the utility program, and when the CEC believes we'll get that change in place so we can all plan and educate our customers to participate? So that's question number one.

And the other point I just, I want to make is, I think in response to Commissioner Monahan. You know, I have a history prior to coming to Generac. I've been working on distributed resources for a number of years. And I just think we have such an untapped potential to really use those batteries that have been implemented, to encourage batteries, and to use third-party aggregators. Generac does have a grid services business, formerly Embala (phonetic). And you know, it's -- I just want to clarify, it sounds like technologies like that will be eligible for DEBA, but if that can be confirmed, that would be very helpful.

But I think, you know, finding a way for us all to encourage use and aggregation of those storage and solar assets is really significant and largely untapped.

Thank you.

VICE CHAIR GUNDA: Thank you, Anne. Just in a way of responding quickly to this, I think there's a DEBA workshop that's going to be, look forward to engaging with you there. And also, for the DSGS portion, there is ongoing work and public process to enhance the existing programs, so look forward to engaging you there as well.

MR. SAMUELSON: Dylan McAuliffe, you are available to talk.

MR. MCAULIFFE: Thank you very much. My name is

Dylan McAuliffe. I'm Director of Policy in New Markets for Solar Landscape. We're a rooftop installer and developer of community solar projects, so the low- to moderate-income communities, and have put 30 megawatts online, serving currently in the community solar programs around the country. Thanks very much for the opportunity to speak.

I'm here to speak about the funding being allocated towards community solar paired with storage. I think technology available can enhance the local and systemwide reliability issues. And it's consistent with the priorities of equity and environmental justice for low-income residents and disadvantaged communities. The state's, you know, existing programs and the future programs that are being planned all, you know, sort of support that and have elements to deserve in that capacity as well.

I want to speak specifically as a developer/installer who is currently -- we're currently installing about 50 megawatts. They're in various stages, permitting, procurement, and installation, in multiple states. So I just, I wanted to speak to, basically, the ability to deploy solar with storage, you know, in a time efficient manner to meet the goals of this funding.

I can say that, you know, with all those projects that we can -- we're handling issues as they relate to

change and inflation issue. And that shouldn't keep us in the way of deploying. I think if, you know, some of this funding can be used to implement programs that can be, you know, deployed community solar and storage technology, we would we, you know, and other developers would probably be able to get a product online in '24, from a timeframe perspective. We have, you know, sites located in disadvantaged communities with partners where we can host products.

So you know, in terms of, you know, being able to deploy where it needs to be deployed and deploy it and, you know, the value of having storage in reliability in those areas (indiscernible) of other technologies, you know, they would be able to answer to that. And then we think we could that, like I said, in a desirable timeframe.

I just wanted to share that information and I appreciate if you can consider it. Thanks a lot.

MR. SAMUELSON: Allie Detrio, you are able to talk.

MS. DETRIO: Hi. Can you --

VICE CHAIR GUNDA: Before the next person -- Allie, before you jump in, can I just ask, if the rest of the hands raised are comments, we could probably move into the comment period. Unless anybody has specific questions, I would like to move into the comment period. It looks

like a lot of these are comments.

Allie, do you a question or a comment?

MS. DETRIO: It was going to be a comment. Thank you, Commissioner. Yes, we thought we were at the comment section already.

VICE CHAIR GUNDA: Okay. Yeah, I think we slowly merge that path here.

So if everybody's okay, I'm going to move towards comment, and then we'll just take the last few comments here.

MR. MCAULIFFE: Yeah, excuse me for that. You can file mine under the comment section, so thanks again.

VICE CHAIR GUNDA: No problem, Dylan. Thank you.

So if we can move the slides to comment period and we can just go into them? Thanks.

MR. SAMUELSON: So, Allie, you can go ahead and go to comment.

MS. DETRIO: Great. Thank you. Hi. Allie Detrio, Senior Advisor to the Microgrid Resources Coalition. We're the original nonprofit association representing the microgrid community with developers, customers, communities, investors, and others interested in the deployment of microgrids and policies and regulations that can help support their rapid scaling and deployment.

One, I just wanted to thank the Commission for

their -- this program and allocating so much funding to it. Microgrids look to be clearly eligible for the programs, we're really grateful for that, and the opportunity to show that microgrids can provide the flexible capacity, reliability, and resilience benefits to the states, in line with our climate and emissions goals.

I did just want to reemphasize some of the points that were made earlier about the need for a robust market signal so that these resources, and microgrids in particular, can provide the capacity and/or the demand management or other services that are needed during these 60 or so hours a year when we really have these reliability challenges, but also that we're maximizing the value of these investments by ensuring that the market signal is there and that these resources can provide grid services and other benefits in both blue sky and black sky conditions. And that will allow us to scale these technologies much more broadly and ensure that they are, you know, really being utilized to the maximum benefit of ratepayers and taxpayers in the state.

So to the comments about CSSA suggesting that these resources have a market following signal, but not necessarily need to interconnect through CAISO, I think it's crucially important. And that will allow us to go through the interconnection process much faster and get

these resources deployed in a much more expeditious manner.

So just really wanted to reemphasize the need for the robust market signal to make sure that these resources are maximizing their value and reaching their full potential.

And, again, thank you to the Commission for standing up this program. We look forward to being involved.

MR. ERNE: Thank you, Allie.

We have one in person before we go to the next ones in line on Zoom.

MR. THEISEN: Good afternoon, Commissioners. Thank you, first and foremost, for hosting this discussion and for setting this all up. I think it's a really, really important program that we're talking about. And we definitely believe that this funding is going to be well utilized.

My name is Nick Theisen. I represent Turning Point Energy. We're a leading national community renewables developer. And we're really excited about the potential for community solar-plus-storage to make a substantial contribution here in California to a number of the goals of this program that have been mentioned today.

Among those, first and foremost, bringing capacity online quickly, cost effectively delivering that

energy in the hours when it's needed most, and ensuring that the benefits of that clean energy are flowing equitably to low-income communities and disadvantaged communities around the state, as recent legislation has ensured that any program would.

To the first point about bringing capacity online quickly, I'll make a comment that, from our experience, some of the supply constraints that have been discussed here have already begun to ease. And based on the national policy environment that's improved substantially, we expect that to improve considerably over the coming years.

One comment about the ease of permitting a project that's, you know, 5 megawatts on 20 to 40 acres versus, you know, a utility-scale project that might be thousands of acres, you know, I think one of the big advantages of community renewables is that from an interconnection standpoint, as well as from a permitting standpoint, we're able to get through those processes substantially more quickly as we're interconnecting to the distribution grid and we're able to utilize smaller pieces of land, you know, potentially brownfields or industrial sites, it's much more flexible. So we're able to utilize land that that might be, you know, potentially more favorable for permitting.

And in terms of being able to scale that then

having 20 community solar developers, each with 10 5-megawatt projects, that's 1 gigawatt, you're going to get to a gigawatt a lot more quickly than trying to rely on one massive -- you know, one person or one company developing one larger, single project.

So we believe that we can get meaningful capacity online, potentially in 2024. And I think, funding that could go to support that could, you know, increasingly help us, you know, be able to scale that number even larger and ensure that the benefits from these projects are going towards those lowest low=income and disadvantaged communities.

Thank you very much.

MR. JOHNSON: Kurt Johnson with the Climate Center.

It looks like, based on the ballpark numbers, you can easily get to a couple gigawatts without breaking a sweat. I mean, if we've got 13 gigawatts of rooftop solar, if we’re about to spend, you know, $900 million through SGIP, another $700 million through DEBA, like just say you threw that all at storage and then paired it with existing, you know, solar rooftops, you’ve got, what, 2,800 schools in California that have, I think, getting close to a gigawatt of solar, you're easily going to get your 2 gigawatts based on the investments that have already been

made.

And then you start thinking about, oh, how do we scale up, you know, thermostat, you know, connections? Oh, yeah, well, if we just threw some at that, we'd get from 200 megawatts to a gigawatt.

Talking about vehicle-to-grid, well, like we talked about earlier, if, in fact, we're going to have 5 million EVs on the road, there's, you know, 50 gigawatts of capacity. So it doesn't look like it's that hard. I think with some leadership from the Commission, that could be a reality.

Thanks.

MR. SAMUELSON: Tim Smythe, you're able to talk.

MR. SMYTHE: Yes. Tim Smythe here.

Something I wanted to comment on. It was, I think, after, I think it was Dan See's comment, there was some questions about the Commission's ability to advise in terms of nuclear and state policy. Something I want to point out in terms of safety issues, that there was concern in the legislature about the safety of nuclear power as a zero-carbon energy.

So something I want to point out is back in the 1980s, I think it was 1983, the Commission was -- there was actually litigation against the Commission on this issue. And while the Commission, overall -- and its case actually

involved PG&E -- the US Supreme Court ruled for the Commission. The US Supreme Court, in its ruling, also pretty firmly said that the Commission and, in fact, the state legislature, and the (indiscernible) of the state government as a whole, do not have authority to consider safety of atomic energy under the Atomic Energy Act of 1954.

So the state and the Commission could consider emissions profile, environmental impacts on things like the oceans, you know, cost and efficiency, cost effectiveness. The US Supreme Court ruled that the Commission did not have authority over safety. Now, I know there's probably some people in the legislature that disagree with that ruling but that is what the US Supreme Court said back in 1983. So I just wanted to put that on for the record.

And I also just want to throw out, in terms of numbers, and this goes way beyond Diablo Canyon, I mean, there's other very large states in the US that build. You know, Illinois built almost 12 or 13 gigawatts of nuclear power within a 20-year time frame back in the 1960s and 1970s and 1980s.

So if we, you know, if we're talking even multi-gigawatt numbers, there is a consideration where I think nuclear has a role to play. Admittedly, anything beyond Diablo Canyon, in terms of other nuclear sites, obviously,

would require legislation or the federal government or certification that the federal government has come up with a solution to spent fuel to storage, which I think should be emphasized.

The construction-ban legislation has an opening within it where the Commission it's supposed to determine where the federal government stands on a waste disposal mechanism and then -- and make a determination on that. And I assume that's kind of like rolling process. And I to be honest, I don't expect much on that, much on the federal government's responsibilities for waste disposal, I don't expect much to happen, but you never know. And I think it's an open possibility. And even under existing legislation, I think the possibility of some change at the federal level where the federal government actually, whether through things like consent-based siting, is able to make progress on that front, I think has to at least be opened as a possibility in a menu of options that maybe should be put forward going forward.

So I thank you for your time.

MR. SAMUELSON: Heather Hoff, you are able to talk.

MS. HOFF: Hi. My name is Heather. I am Cofounder of Mothers for Nuclear. Our mission is building a global community of support for clean energy. And I'm

struggling a little bit here in talks of attempts to replace Diablo Canyon, which is existing firm, clean energy that powers almost ten percent of our state, which is now the largest -- the fourth largest economy in the world, and we are still powered with 50 percent natural gas and 30 percent imports.

So with my mission in mind of clean energy, I would just like to emphasize that, please, bring all of these new resources, potential new construction, to bear to bear to replace fossil fuels. Multiple studies have already shown that preserving existing nuclear is absolutely the most cost effective clean energy that we can have. So I assume that if you study that, you're going to find the same thing.

The world is shifting in terms of perceptions about nuclear. You know, at Mother for Nuclear, we try and help make it safe for you to change your mind. We're moms and we support nuclear. We're environmentalists. We care about climate. And, you know, if it's the right thing, I think we should keep pushing for it, no matter how hard it is.

Please don't limit yourself based on existing state policy. A whole bunch of other states are repealing their nuclear moratoriums, which, you know, Tim Smythe mentioned ways to, you know, address the more moratorium in

his previous comment or, you know, we could consider just getting rid of it.

So I've been advocating for Diablo Canyon for the last six years. A lot of people told me that it was impossible. And I would just like to say, like here we are and it's not impossible, we can do these hard things. And I hope we do the hard work to do the right things, including Diablo Canyon, new nuclear first for out state, and all of these other clean energy options that we have, hydrogen, desalination, everything, so thank you for your time.

MR. SAMUELSON: Madeline Symm, you are able to talk.

MS. SYMM: Hi. Can you hear me okay?

MR. SAMUELSON: Yes.

MS. SYMM: Great. Thank you so much. My name is Maddie Symm, S-Y-M-M, on behalf of Cypress Creek Renewables. We are a California-based developer, owner and operator of community and utility-scale solar and storage projects. Really appreciate the opportunity to provide input in this process.

I just wanted to say quickly that, in our view, community solar and storage are going to be essential for the state's near-term and long-term reliability strategy. We think this is an important opportunity to provide

meaningful incentives to promote ownership and the development of community solar and storage projects in underserved communities.

We really appreciate the leadership of the Commission, the legislature, and particularly Senator Laird on this, and just look forward to working with the Commission and the legislature on funding and a plan for how we leverage federal dollars.

Thank you.

MR. SAMUELSON: Hanna Argento McCurdy, you are able to talk.

MS. ARGENTO MCCURDY: Hello. My name is Hannah Argento McCurdy. I'm here on behalf of Arcadia Power.

Until recently, one of the biggest challenges facing the solar industry was the fact that a large swath of the population cannot install solar panels on their rooftop. Two-thirds of Americans were left out of the clean energy economy because they rent their homes, lease their office space, live in large buildings, do not have roofs that are receptive to solar panels, or can't afford the upfront cost of the panels. In California, 45 percent of residents do not own their own home and thereby can't install solar.

But now, community solar programs are helping to overcome this challenge. The IRA will help community solar

reach a broader population by extending the investment tax credit for community and rooftop solar for the next ten years. The IRA adds specific new incentives for smaller-scale solar projects, like community solar, that are placed in low-income communities or that benefit low-income households. Right now the only thing limiting the benefits of community solar for low-income families is a lack of effective investment in community solar programs.

California has the opportunity to devote resources to extend the tremendous economic and environmental benefits communities can provide for all families, and especially in low-income families.

Thank you.

MR. SAMUELSON: Derek Chernow, you are able to talk.

MR. CHERNOW: Thank you very much. Derek Chernow on behalf of the Coalition for Community Solar Access, the California Environmental Justice Alliance, and the Asian Pacific Environmental Network.

Thank you so much to Vice Chair Gunda and the CEC staff for their important work in this area. It's been a great discussion today and really appreciate the opportunity to address some of the attributes that were mentioned earlier this afternoon.

Obviously, community-scale renewables and

storage, specifically community solar and storage, can play a terrific part of these -- meeting these attributes, and also meeting the state's goals for reliability, for GHG reduction, and for the advancement of our environmental goals and clean energy goals. And just as important, community solar and storage should also meet our equity goals as outlined in AB 2316 in the requirements therein.

While we believe that it's state budget allocation under the Clean Energy Reliability and Investment Plan will help projects build in order hard-to-develop areas of the state, which will support local and system wide reliability, any investment from the state will also support the goals under AB 2316, which require that no less than 51 percent of the community renewable energy project's capacity would serve low-income households.

So I wanted to thank you for the opportunity to speak and share with you those thoughts today. Thank you so much.

MR. SAMUELSON: Bert Wank, you are able to talk.

MR. WANK: Thank you, Commission. Bert Wank, founder and CEO of InfiniRel Corporation. We have a role to make renewable energy infinitely reliable and we'll be a part of the solution going forward.

I'd like to commend Allie Detrio's comment early on community microgrids, which also have been echoed later

on. I think, if I'm not wrong, Allie actually started writing policy in California for microgrids. So please take note: She is a great supporter.

Now I'm supporting the community microgrid efforts out of four big topics. We operate today on cell phones, not landlines. Microgrids are the cell phones of the energy community in the future. That's the shift, I think, it goes. Now, we need to accelerate that. The reason it can't accelerate today is because of a topic that has been left out here, which is okay, the transmission constraints.

But we need to consider one fact. As an example, Texas spent seven years and $4 billion in their competitive renewable energy zone deployment of a transmission line. We're working with Invenergy, here locally of Chicago, who's doing a lot of transmission work. It just takes too long. On top of that, we've got all the supply chain issues.

Microgrids can agile deploy much faster and providing the benefits, while it is actually optimized for renewable, fuel cell, local, including the biogas discussion we had before.

And lastly, there's one additional issue with what is the food basket, California, every solar. We cannot compromise, as is done, for example, in Virginia,

that fertile land is sold off for large-scale utility over tariffs while compromising the other value that we have to live, which is food and water. And all this points out to the community microgrids will have an instrumental force.

Now what you get pushback from is the utilities, which is exactly what happened in the last couple of weeks was a Sonoma (phonetic) proposal. Utilities, you know, are still the backbone for now, and they like to get the poles and wires return on the investments.

Now if you look at Tempra (phonetic) Electric model, they have started investing into community microgrids. So it is a great use case to model after and actually negotiate with utilities how they are supporting the community microgrid effort and still are not compromised over the revenue stream. So this could help in balancing the Act in the transition from large-scale utility to community microgrids.

And I'd be super stoked to participate in our technology. We predict failures on electronics, like the invertors, which is the mega trend. We're very excited to be plugged into some pilots in the near future and I look forward to working with all of you.

MR. SAMUELSON: Rachel Bird, you are able to talk.

MS. BIRD: Hi there. This is Rachel Bird on

behalf of ForeFront Power, a California-based behind-the-meter and community solar and storage developer and owner/operator. Thank you to the Vice Chair and to staff for today's really excellent discussion.

I wanted to just echo some of the prior commenters' support for the forthcoming Community Solar Program. California has a really unique opportunity to tailor investment in community renewable energy to provide meaningful incentives to low income and disadvantaged communities. Community solar projects will be able to scale quickly, if the rules are implemented expediently by the Public Utilities Commission and could begin contributing meaningful solar-plus-storage capacity in the next few years.

Thank you for your consideration.

MR. SAMUELSON: Marc Costa, you are able to talk.

MR. COSTA: Hi everyone. Happy Friday afternoon. This is Marc Costa, Director of Policy at the Energy Coalition. But in addition to that, I wear the hats of the Board Chair of the local government Sustainable Energy Coalition, and also hold the membership in the Department of Energy's GridWise Architecture Council, as well as the International Energy Agency's Global Observatory on Peer-to-Peer Energy.

Today has been a great workshop and a lot of good

ideas. I just wanted to highlight the role of local governments as we consider to the path forward. There's a lot of additional tools that are disposable -- at our disposal to advance some of the systematic barriers that we're discussing. When it comes to the building performance standards and the fabric of our next generation of new and existing buildings, the ability to engage in REACH Codes, build electric vehicle infrastructure, but also harnessing the power of data, which today, we don't all have a crystal ball, but it sounds like we're on that path of really using the technologies and analytics and firms, both within the Commission and outside the Commission, that are possible.

Permitting trends could be very critical in this to understand where the loads are, to a better extent than typical buildings and that kind of information that we have. And I would encourage both the Commissions, CAISO an and CARB, to really look at curating an ongoing, evolving dataset that really leads us to something closer to a crystal ball, if possible.

If we look at things like the Los Angeles 100 Plan, which was built out of a planning effort, but if you also look at the Puerto Rico 100 Study, which was done out of an emergency necessity, for real resilience in real emergencies, there's a lot to learn from that. And

hopefully, California can do something similar. Those were both done with a bottom-up demand-side analysis that was also married with the grid analysis to look at hosting capacity, and look at the high DER future, which there's three or more proceedings going on currently, two at the CPUC and one at the Energy Commission.

So, you know, this would really harness the information coming from the routine studies the potential and goals EE studies, the potential and goal demand response studies done by Berkeley Lab, as well as the ongoing high DER study with the CPUC and, I believe, one of their contracted firms.

So treading the path to 2045 as an emergency may be worth considering. The activities that we do between now and 2030 for SP 350 may look very different than the activities that we engage in between 2030 and 2045. So with the volume of activity from the IIJA and the Inflation Reduction Act, it may be the last luxury that we have to really put all hands on deck and implement all the no-regret strategies that we have, at one point, articulated in the AB 758 Action Plan, but extend that concept to our 2045 pathway.

You know, at the same time, that volume of funding is the safety net that we really need to ensure equity customers are at the front of that transition and

have the first mover advantage.

So in closing, I would really encourage the Commissions to think about how to seize the moment and really keep 2045 as the target today and use the urgency that we have with the issue in front of us to really build momentum to get us to the ultimate target of decarbonizing the state.

Thanks.

MR. SAMUELSON: Jeff Burke, the last hand raised, you are available to speak.

MR. BURKE: Hi there. Can you hear me?

MR. SAMUELSON: Yes, we can hear you.

MR. BURKE: Oh, thank you. My name is Jeff Burke and I am with Bright Canyon Energy. And I did want to just, you know, thank everybody for all the time you spent today on background information and walking us through this process. This has been extremely helpful.

Bryce Canyon works with a number of military bases across California on mission-critical resiliency projects. And the way we do that is through microgrid development. And I just wanted to talk about some of the dual benefits that having the military in California, and developing microgrids that can serve California, and keep our military up and running, would have.

We have existing sites that we are ready to

deploy and that can be online rapidly. And I heard a lot of great information today about, you know, approaches on microgrids and things. And since they are, essentially, built in building blocks, they can be sized and accelerated to deploy rapidly.

The one thing that I wanted to put a little bit of support for was I would like to see an approach that includes all renewable fuels, whether it's biorenewable, gas, renewable diesel. I think the wider that we cast our net, the more rapidly we're going to be able to meet the needs from a reliability and a clean perspective. And I think that is going to be a quick way to approach how we meet this resource challenge and keep the grid reliable and resilient.

So, again, I just wanted to thank you all and I look forward to working with all of you. And I think everything that you guys are doing and have told us today is on the correct path and look forward to participating as we go forward.

MR. SAMUELSON: More hands raised.

Serg Berelson, you are able to talk.

MR. BERELSON: Yeah. Hi. This is Serg Berelson with Mainspring Energy standing between everyone and their weekend, so I'll try and make this quick.

So Mainspring makes a new type of clean power

generator called a linear generator. It's the first ever to be able to switch between multiple fuel types, including 100 percent clean fuels, like green hydrogen and ammonia, compare with solar compare with, you know, other renewables delivering clean, firm power at low costs that can be cited in front of or behind-the-meter, really valuable.

And I guess, you know, hearing a lot of really thoughtful discussion today, I want to thank the Commissioners, everyone who is attending, and all the participants.

But I think one thing I really appreciate that I heard today was the value of flexibility. And I encouraged the Commission, in thinking through these incentives and whatever programs come out of this, including DEBA and others, to invest in, you know, technologies and resources that can move along the curve as we decarbonize, that are flexible and able to be used in a variety of ways, because that really maximizes the value of, you know, ratepayer and taxpayer dollars.

So really just a fantastic discussion today. And with that, I will, I will end my comment. Thanks so much.

MR. SAMUELSON: Joe Henri, you are able to talk.

MR. HENRI: Good afternoon. This is Joe Henri and I lead the Policy Team for Dimension Renewable Energy. We're a community solar developer. Thank you very much,

Commissioners and CEC staff. It's been a really interesting day, both the morning session and the afternoon session. Thank you for all your hard work here.

I wanted to just wrap some of the community solar comments here and note that you've heard from Solar Landscape, from ForeFront Power, you've heard from Turning Point Energy, you heard from Cypress Creek Renewables, and you've heard from the Coalition for Community Solar Access, about community solar. And I think the reason so many of us are interested in this proceeding and in the work that you're doing here is because we believe, very strongly, that community solar brings you speed, it brings you scale, it brings you environmental justice benefits, and no regrets. It's a technology that can be deployed quickly and effectively to help meet the kinds of goals that the Commission has been laying out here.

Derek Chernow mentioned AB 2316, a brand new piece of legislation, but it's already in the regulatory implementation process at the Public Utilities Commission where we're going to be deploying grid-connected community solar projects that serve low- and moderate-income communities across the state. So this is a program that will deliver the scale that you need. It is inherently an environmental justice program. And it will happen quickly using private capital.

I think this is also a really important point about community solar, that you don't have to pay for all of it. But what you can do is take your billion dollars of potential funding here and leverage it, you know, a portion of it, in a way that puts community solar projects, coupled with storage, in the places where they're most needed to enhance grid reliability. I think this is a tremendous opportunity for California. It can be done in a way that is not expensive and that meets all the goals that we all together are trying to achieve.

Obviously, there are more solutions required than just community solar. But community solar, I think, can play a very, very large role and very helpful role. And we look forward to working with you.

Thank you so much for your time.

VICE CHAIR GUNDA: Thank you. I just want to say, you know, how appreciative we are for everybody who's taken time to both attend, but also provide comments, really, really helpful comments, to advance the conversation, and recognizing the goals here, and really look forward to your written comments.

Just wanted to just reiterate one element of the comments. It would be really, really helpful, I think, you know, a few of you spoke to attributes, you know, flexibility, ability to really, you know, get the resources

online quickly, and the scale of them, and other attributes like, you know, no delays in terms of permitting. All those are extremely helpful for us to consider as we move forward. I look forward to hearing those in your, you know, docketed comments and such, but also what you've said today.

One other elements is just thinking through, you know, as we, you know, spend this money, you know, we have the $700 million from DEBA, and then the $1 billion, which we are going to try and recommend an investment plan for the legislature, to the extent that DEBA, specifically the $700 million, is tied to the goals of reliability in the short term ,in the very near term, you know, we have to, as a Commission, be very careful about bucketing money that ultimately will not result -- ultimately might not result in the megawatts we need in the timeframe we're looking at.

So to the extent that you can really kind of talk about the -- not just the maturity of the solution, but the scale at which you can deploy, would be really helpful for the Commission to consider, and how to bucket these different dollar amounts.

So, again, thank you so much. A big thanks to everybody who's been in attendance and the comments, but also to the CEC, CPUC, CAISO, as well as the DWR teams who both presented today but have been working behind the

scenes to make this happen, a big thanks.

I want to pass it to Commissioner Houck if she has anything.

COMMISSIONER HOUCK: Yeah. Thank you, everyone, for the presentations today ,and for all of the public comments and participation, a lot of really good observations and questions. And I'm looking forward to following the process and coordinating with my fellow Commissioners at the Energy Commission. So thank you again, everyone.

VICE CHAIR GUNDA: Thank you.

Back to you, David.

MR. ERNE: Great. Well, with that we will close out this workshop.

And as I mentioned, we'll get the RFI out, hopefully by next Friday. For additional comment, you can comment in the docket for this workshop, or you can respond to the RFI. And we will be having more workshops on this as we further develop our methodology and our approaches, so look forward to more of those workshops. And if you haven't already, sign up for the docket at CEC's website so you'll be notified of future workshops.

With that, I think we can conclude this workshop. We thank everyone for their support and for their input.

Have a good weekend.

(Off the record at 4:28 p.m.)

CERTIFICATE OF REPORTER

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

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 8th day of November, 2022.

MARTHA L. NELSON, CERT**367

CERTIFICATE OF TRANSCRIBER

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

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.

November 8,2022

MARTHA L. NELSON, CERT**367