DOCKETED	
Docket Number:	21-IEPR-04
Project Title:	Energy Reliability
TN #:	240857
Document Title:	Transcript of 7-9-21 for Joint Agency Workshop on Summer 2021 Electric and Natural Gas Reliability - Session 4
Description:	JOINT AGENCY WORKSHOP ON SUMMER 2021 ELECTRIC AND NATURAL GAS RELIABILITY, Session 4: Aliso Canyon Reliability Impacts
Filer:	Raquel Kravitz
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	12/6/2021 6:56:33 PM
Docketed Date:	12/7/2021

IEPR JOINT AGENCY WORSHOP

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:	)	
	)	
2021 INTEGRATED ENERGY POLICY REPORT (2021 IEPR)	)	Docket No. 21-IEPR-04
	)	RE: Reliability

JOINT AGENCY WORKSHOP ON

SUMMER 2021 ELECTRIC AND NATURAL GAS RELIABILITY

REMOTE ACCESS WITH ZOOM

FRIDAY, JULY 09, 2021

2:00 P.M.

Session 4: Aliso Canyon Reliability Impacts

Reported by:
M. Nelson

APPEARANCES

Workshop Leadership

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I N D E X

P R O C E E D I N G S

JULY 9, 2021 2:00 p. m.

MS. RAITT: So good afternoon, everybody. Welcome to this Joint Agency workshop on Summer 2021 Electric and Natural Gas Reliability. I'm Heather Raitt, the program manager for an Integrated Energy Policy Report. This workshop is being held remotely, consistent with Executive Order N-08-21 to continue to help California respond to, recover from, and mitigate the impacts of the Covid-19 pandemic. The public can participate in the workshop consistent with the direction in the executive order. This is the fourth session his two-day workshop. And to follow along with the discussion, the workshop schedule and presentations are available on the CEC's website. Our workshops are recorded, our IEPR workshops are recorded, and both a recording and written transcript will be linked on the Energy Commission's website within a couple of days. Attendees have the opportunity to participate today by asking questions or uploading questions submitted by others through the Zoom Q&A feature, or you can make comments during the public comment period at the end of the afternoon. Or, of course, you made submit written comments, are always welcome and information for how to do that is in the meeting Notice and written comments are due on July 23rd. So with that,

I'll pass it over to Commissioner Gunda.

COMMISSIONER GUNDA: Thank you, Heather. And thanks again for everything you and your team does for these workshops. And I think we have Commissioner McAllister on, myself from CEC, and we have a Commissioner Rechtschaffen and Commissioner Guzman Aceves from CPUC at this point. More leadership may join as we go and just want to welcome everybody for this afternoon session. Thank you to all the staff, the participants, the panelists and the stakeholders for joining this important part of our discussion today. I want to just thank Commissioner Martha Guzman Aceves for here leadership in thinking through this particular panel and then this segment of our workshop. So without any more delay, I'll just hand it over to her to set up the context for this and help facilitate for the rest of the afternoon. Thanks.

COMMISSIONER GUZMAN ACEVES: Thank you, Commissioner Gunda. And I know we keep reiterating, but I really do appreciate all of our staff, both the CEC and the PUC staff, and putting these, all of this data before us to really contemplate these tough transitions that we're in. And just to kind of frame a little bit, this afternoon's session, we'll have two panels. And in talking about all the different reliability issues that we're facing, this interplay of the gas and the electric systems and really looking at the particular challenges of the LA Basin. And I

want to thank again Commissioner Gunda for giving us this space and all the expertise that is here today to help us think through these challenging dynamics, especially as we all know, we're in a transition to deal with this climate changing so dramatically but keeping all of the reliability on for the safety of our -- of our citizens. I, as you know, the Commission PUC was directed many years ago to open a proceeding on Aliso Canyon. And we have received various important letters from to the Governor Newsom and also previously the Chair of the Energy Commission Chair Weisenmiller. So this is a challenge we've been dealing with, with very clear direction. And our first panelist, or our first speaker, Eileen Hlavka from our team, will get into more details of that proceeding.

But essentially the challenge is how do we transition off of this resource that we've heard so much today and yesterday of its vitality to our reliability and our economic hedging. And so that is the challenge. We'll have a panel really talking about in the first panel, what is that need? Let's talk about the different scenarios that have been done so far to really determine what is the, not just the BTU need, but the electric generation need. And we've heard a couple of folks mention this morning and maybe yesterday as well this term, Minimum Local Generation. And it kind of goes to what Elliott was talking about that, you

know, our 1-in-35 scenario doesn't really have that full coverage for the noncore and particularly the generation. So there's been this development of this Minimum Local Generation and it needs more attention. You know, there's not agreement there. And so that's one thing that that first panel will be talking about as well as what is that local that, so let's say, take that concept of minimum local that what is it, how is it derived, is it in the basin, does it require new transmission, etcetera? So having that need well defined is a big part of our challenge, as well as the second panel which we'll get into. And that will be more of a roundtable discussion. And I encourage all of us to really engage in that discussion and talking about what are those alternatives. And I know we've -- I've certainly been focused about talking about resource alternatives, generation alternatives, local generation alternatives, but as we got into the last panel as well, some of these strategies may also look at, you know, what are other hedging approaches that we can do, contracting alternatives, perhaps, or even other ideas that we haven't yet talked about.

And finally, I just want to recognize that what we're talking about this afternoon is not a new issue, including the alternatives, even when the blow out occurred, we'll -- many of you will remember that there was direction from the legislature to procure electric storage in order to

deal with this issue of less dependency on Aliso. So the strategies and the alternatives are not necessarily new ones, it's much like we've talked about in our overall reliability situation that we're a little behind in terms of these investments. We're significantly behind if, from my perspective. So there has been much, you know, not overwhelming amount, but I think less than 100 megawatts of procurement for sure that's come -- that's been directed to deal with the Aliso dependency for electric storage. But that is just -- it's just the beginning. And I think what we're looking for in that second panel is also what are some more of these strategies that are no regrets strategies. So I think with that, I'll turn it back over so we can get started. Thank you.

MS. RAITT: Thank you, Commissioner. This is Heather. I'll go ahead and introduce our first presenter. So we're going to have a series of four presentations. And first is Eileen Hlavka. I am so sorry, Eileen. I tripped over my tongue. But Eileen is a senior energy analyst on gas policy and reliability at the CPUC. Go ahead.

MS. HLAVKA: Thank you, Heather and good afternoon, everyone. I will be introducing how we're assessing Aliso Canyon Natural Gas Storage Facility Closure Options Within the CPUCs Proceeding I.17-02-002, which is the proceeding that the Commissioner was discussing. As you can see, Aliso

Canyon is not the largest storage facility in the state of California, but it is the largest of the four gas storage facilities that are located in Southern California. Next slide.

I will cover the proceeding in which the CPUC will decide whether and how to close Aliso, a little about that. And a lot of this is the analysis of the science of the need and the ways to fill it, and then I'll end with a little about our current status. Next slide.

As Commissioner Guzman Aceves discussed, the Proceeding's purpose, as [indiscernible] as one of the discussion topics today, is to analyze the potential and the options for closing the Aliso Canyon Facility. The current point we're at is analyzing those replacement options, not meaning that the other point has passed, and our contractor, FTI, Inc. is doing that analysis. We've held the first two of four workshops and they're currently in the process of doing lots of analysis and working on their report. Next slide.

So what approach is FTI taking to this analysis? The first piece is to identify the need. That is to say the shortfall to the energy system if Aliso is closed if no action is taken to fill it, to fill that need, what is the amount of gas demand which would be curtailed on a peak day, which is a once-in-10 years cold winter day, which is the

planning standard, which Melissa and Jean mentioned this morning, which is the point of standard for the gas system. And that's because gas demand is still expected to be winter peaking. Their analysis also includes pipelines and other gas storage facility assumptions that are set, more or less, based on their current capabilities.

The next step is to identify options if Aliso were to be closed, as in sets of energy services to fill that shortfall. These are referred to as portfolios. And for each of those, FTI is analyzing them for 20 years out, that is modeling the gas and electric and system costs. This analysis takes into account all of WECC, so the shortfall is system-wide, and this is consistent with the level of detail that the CPUC uses in its process of evaluating electric utility Integrated Resource Plans, or IRP. And also uses, FTI also uses inputs which are inputs that are used in the IRP process. These reflect seasonal and daily variation, and they are using a similar software. You may note that in the usual IRP process and for ordering generation, locations considerations are generally considered subsequent to that process. Next slide.

FTI's preliminary estimates are the gas, for the size of that shortfall, re the gas equivalent of around 4,500 megawatts in 2027, and just over half of that in 2035. The difference between those years is because demand is going

down a bit over time. And these two numbers for gas or electricity, these are alternatives. They're -- and they're not additive. It's the same thing in different units. I would emphasize these numbers are very preliminary. They will be updated with both what we feel are more realistic lower levels of how much gas is assumed to still be remaining in the other storage fields on that peak day and with additional renewable energy that's reflected in the latest transmission planning process, amounts. And also looking at the impact of the recent Mid-term Reliability Procurement Order that the CPUC ordered a few weeks ago. So these numbers could go up, they could go down. Please don't hang your hat on them just yet. Next slide.

And so what are the five options to provide those services that FTI is looking at? These portfolios are firstly, Gas Infrastructure, upgrading or repairing the gas infrastructure along its current pathways. It's kind of a baseline for comparison. Nextly, a Demand Reduction Portfolio. This will include building electrification, energy efficiency, and potentially gas demand response, as you'll see these items on the next slide as well. And a portfolio that is called IRP Mix. This is the generation portfolio, but it's not just generation, of course, that's renewable generation, and storage, and electric demand response. The fourth portfolio is Reflecting the Concept of

New Electric Transmission, and the fifth portfolio will be designed to combine whatever is deemed best from the first five. Sorry, first four. Next slide.

If one of these portfolios is adopted, then what would be the next steps that the Commission could take in order to try and implement it? That depends very much on the option. I'm not going to walk through all of those on this slide but do note that Demand-Side Gas contains different pieces. That's why it's in different rows. That's all one portfolio, which is named Demand Reduction in the previous slide. Apologies for the inconsistent naming. The two here, which focus on electricity, are ones where you see some highlighted items that have to do with local reliability. If the one, or parts of both of these were adopted, likely a process for implementing them would be to take those ideas and put them as inputs into the CPUC's Integrated Resource Plan, their IRP process, which is where CPUC analyses and orders procurement, and sends portfolios for analysis to CAISO regarding Transmission Resource Adequacy of the CPUC and Transmission Planning at CAISO would then look at the local reliability in further detail. Next slide.

So where we are now is FTI will finish up this analysis this year and then it will be up to the Commission to determine what sorry, the California Public Utilities Commission within this Proceeding, to determine what the next

steps will be. You may have seen that a Revised Scoping Memo about this was just issued hours ago and it added some detail to these next step questions and the scope of the Proceeding. In general, it centers still around whether to close Aliso and if so, by what process, which portfolio will be used to tee up resources to replace it, or will some other approach be taken. And a question I think we'll hear lots more about today is what other analysis do we want to have in order to inform these decisions or their implementation?

I am happy to answer questions, and with that, I will turn it back over to Heather.

MS. RAITT: Thank you, Eileen. So next is Neil Millar, and he is the vice president of Infrastructure and Operation Planning at the California ISO. Go ahead, Neil.

MR. MILLAR: Thank you very much. And thank you for the opportunity to speak today on these issues. If I could move to the next slide, please.

What I was wanting to do is focus today primarily on the local capacity requirements and the local issues that affect our need for this generation, that could also spill over into implications for Aliso Canyon, whereas Eileen was also touching at a higher level on more system issues, and I see that's also being addressed later in today's presentations.

So first, I just wanted to reiterate that there are

probably three major areas where we are conducting transmission related studies that affect our consideration of local capacity needs. First, each year we prepare annual local capacity studies that are focusing on the next year's needs, as well as a projection five years out. And then every second year as part of our annual transition planning process, we also include a 10-year projection. Another piece of information that we started to include as a standard product in that work is an assessment of the potential for batteries to replace generating resources, recognizing that batteries also have unique requirement for the charging capability. So it's not only their discharge capability that needs to be considered, but the opportunities for charging. And I'll touch on that in a bit more detail later. And transmission alternatives have also been assessed in a number of Annual Transmission Planning Processes, looking at potential for transmission upgrades into the LA Basin area, particular to reduce the reliance on gas-fired generation.

We consider those needs from a reliability policy and economic perspective, but we also recognize that the need for the generation has to be considered both from a local and system need as there's little economic benefit in reducing gas-fired generation capacity requirements for local reasons if the generation is also needed for system capacity. We have also conducted additional studies specifically focused

on supporting the CPUC's efforts in the Aliso Canyon proceeding, and I'll touch on that in a different detail as well. Next slide, please.

So the LA Basin area is one of the more complex in the system to study as there are multiple transmission constraints that result in overlapping needs. Primarily though, when it comes to the Aliso Canyon issues, the focus is primarily on the Western LA Basin boundary as well as the overall LA Basin. There is an interplay that we do have to take into account to some extent, with the San Diego Imperial Valley area as well. But the primary focus is on the Western LA Basin area. Next slide, please.

On this graph, this slide I've set out an example out of the 2022 Annual Local Capacity Study showing the potential for the Western LA Basin subarea and the overall LA Basin area needs to be met with incremental storage. This work already takes into account storage projects that are either built or already approved. But we assess the ability for additional storage opportunities to replace gas-fired generation. The work not only has to consider the low profiles and the capability for a typical 4-hour storage product to meet local needs, but also has to take into account the charging requirements, which could be met either importing energy from outside of the area or from other in Basin gas-fired generation in the off-peak hours. So there

is still a potential there for the use of gas-fired generation for charging if there are transmission constraints that prevent the charging from being done by imported energy.

And we provide in this outwork typically two sets of values, the maximum potential, assuming the storage duration is longer than a typical 4-hour product, but then also the capability of a 4-hour product, which for the Western LA Basin in this work was 580 megawatts, and for the overall LA Basin area, it was an opportunity for 1,000 megawatts or 1,020. Next slide, please.

I won't go through all these different alternatives, but this was a sampling of over the last two years or two -- last two Transmission Planning Cycles over the last two years, we have studied a number of transmission alternatives that were also, some of them were a combination of transmission and storage, recognizing that an additional transmission upgrade can help meet shared on-peak capability that can also supplement the off peak charging capability. So that interaction needs to be considered. And these are some of the projects that we've studied over the last few years. But as I mentioned, the economic advantage of replacing the local capacity was considered minimal because the resources were still being required for system purposes based on the portfolios that are developed, working with the Public Utilities Commission and the Energy Commission. Next

slide, please.

So I also mentioned the other studies that have been conducted to support the Aliso Canyon Proceeding. In particular, this is the flow of information that we would prepare power flow studies assessing the generation needs, considering contingency conditions on the transmission system. From that work, we would develop specific gas-fired generating unit dispatch assumptions that were then fed into the Public Utilities Commission's production cost modeling exercise to get daily flow requirements. And that information then in turn fed into the broader hydraulic modeling. So to support this work we had looked at, this was done in 2019. We looked at different seasons, both summer and winter, and for the three specific years to support that effort and the results fed through into the modeling exercise.

This really highlights one of the important points for us is that we can study the electrical needs and paint a picture of the generation requirements, but at the end of the day, we really need to work on a comprehensive study and comprehensive effort that assesses the overall gas supply needs that reach beyond merely the ISO gas-fired generation requirements. So we can help paint part of the picture, but we need the coordination with the overall gas supply picture to understand potential implications. And we believe that

works moving forward very well, but that's a critical component. So with that, I'll actually wrap up my presentation today and I'll look forward to questions. Thank you.

MS. RAITT: Thank you, Neil. Next, we have Jason Rondou, Director of Resource Planning, Development and Programs at the Los Angeles Department of Water and Power. Go ahead, Jason.

MR. RONDOU: Great. Thank you and thank you to the Commissioners and staff for the continued phenomenal engagement with LADWP. We want to just recognize that because that is something that we had asked for, you know, related to this and other ongoing SB100 reliability efforts. And we feel like that request has been met and then some. So we just want to acknowledge that.

I do want to talk about LADWP's LA100 effort, our 100% Renewable Study that we recently completed with the National Renewable Lab, and then talk about that in the context of Aliso Canyon.

So on the next slide, there's background on this study and I think many folks are familiar with this. But for those who are not several years back, our city council directed us to not just set a goal for 100% renewable energy and 100% clean energy, but to determine what the major investments that are required to get to 100% renewable

energy. So what is -- what are the transmission investments that we need to make, what are the, you know, distribution and supply investments that we need to make, but also what is the impact on costs? What is the impact on environmental justice? And what is that going to mean for the local economy and jobs as well? And so we kind of looked at this on the next slide in four major categories, four major paths towards 100%.

The first was really just, you know, what if we complied with the existing law as we, you know, understand it and as we know it today, SB100. This gave quite a bit more flexibility in the resources and the timing. But what if we said we wanted to do something a little bit more aggressive? So what if we wanted to reach 100% by 2035 and we don't want to use things like biofuels or natural gas with renewable offsets. And that's represented by the top right scenario called Early and No Biofuels.

Then we looked at scenarios and we said, well what if we could build new transmission, you know, recognizing that it's very difficult to do? What if we could build new transmission and bring into the city more renewable resources to help the, you know, to facilitate the transition. And then the final scenario was, well what if we recognize that that was a very difficult thing to do and we limited the amount of transmission. Now there would be upgrades and all

of that, but there wouldn't be, you know, significant new transmission corridors. And what that meant is really maxing out local resources. And on the next slide, you'll see the range of costs for these various scenarios.

So you'll see that these costs range from, actually first, we'll talk about the capacity change, and then in a moment we'll talk about the costs. The capacity really doubles under all of the scenarios. So today we have about 10 gigawatts of capacity on our system right now. So the investments that we need to make over the next 25 means that we will double that. So all of the wind, all of the solar, all of the, you know, storage and all of that will double under any path that we take to get to 100% renewable energy. And on the next slide, you'll see the cost range from about 57 to 87 billion dollars. And this is 87 -- 57 to 87 billion new dollars. So on top of all the investments that the City of Los Angeles, LADWP have made, on top of all the debt obligations that we have and all of the planned investments that we have, this is incremental to that. And I'll mention in a moment why electrification means so much to how those rates translate, how those dollars translate in the cost. But before we do that on the next slide, you'll see what that means for greenhouse gas emissions, not just for the electric sector, for the power sector, but also the choices and the investments that we make on the electric grid also can mean

dramatic reduction in greenhouse gases for transportation and for buildings. And you can see over the next 25 years, under all four of these scenarios, a really dramatic reduction of life-cycle greenhouse gases. No matter how we get to 100%, no matter when we get there, you see a dramatic reduction. But what you'll see, and this is relevant to our discussion today on the next slide, you'll see our gas usage.

So I'd like to draw your attention to the lower chart. That represents the High Load Scenario. And the reason I want to draw your attention to that is high load is really critical to our ability to do this successfully. So this means what if we saw the electric vehicle and the building electrification that we hope to see, that we all hope to see? And so you could see that we have just under 40,000 GBtu of gas usage today and 2020. Now, if you look at the next in the 2025, I want to draw your attention to the blue stacked chart, which shows a dramatic reduction to about 20,000. And the reason I draw your attention to that is the path that we're going towards is likely going to be on the 2035 timeline. And then if you go to the set of bar charts that represent -- are represented by 2030, you see that has now dropped even below 5,000. So you see a really dramatic reduction in gas consumption under the 2035 Scenario.

Now I want everyone to kind of remember that because on the next slide you'll see that while our gas consumption drops,

the capacity is really, really important.

So before we get to that, all of the scenarios that we studied as part of LA100 had common elements, which means we don't necessarily need to wait to adopt a certain scenario to actually start to make significant investments. All of the scenarios show that we need a lot more flexible load, a lot more customer rooftop solar. We already have the most solar of any city in the country, but that needs to grow significantly. Obviously, renewable energy and storage, but not just utility scale storage, but also storage within the city. So a lot of customer side storage, very likely storage sited in or near our generating stations.

And then the last two are very interesting, the transmission piece, no matter what scenario we go forward with, even if it's a scenario where we limit the amount of new transmission, there still is a significant amount of new transmission that's required over the next 10 years. And then finally, every scenario of the LA100 studies showed the need for renewable fuels capacity within the City of LA, a minimum of 2,600 megawatts, which is actually just under the amount of capacity that we have today within the City, about roughly 3,400. And that's at the lowest and the highest end of the study showed growth in capacity. So what this means is not the continuation of using gas as we use it today. It's the dramatic reduction in the amount of gas that we use,

however, especially in the short term, our peak demand will continue to be there. And then ultimately when it's decarbonize and we're making very serious investments in hydrogen, but whether it's hydrogen or biofuels, when it's eventually decarbonized, the peak usage will still be there. But the volume is going to drop significantly.

So on the next slide, since the conclusion of that study, the mayor announced a new ambitious goal of reaching 100% carbon free by 2035, with a very aggressive interim goal of 80% renewable and 97% carbon free by 2030. So less than 10 years away. And then he also made reference to significant investments in hydrogen technology that I'll talk about on the next slide.

So I want to first touch on our investments in hydrogen at the Intermountain Power Facility out in Utah. That location is about as good as you can get for investments in hydrogen. There's a significant amount of space. There's the existing transmission that can bring that power into the City of LA. There are salt caverns that can be used for storage, and there's access to many types of rural powers, wind and, wind and solar, and so on. But we need to do that locally within the City as well. And the degree of difficulty is going to grow dramatically. So on the next slide, I want to talk about the considerations for planning around Aliso Canyon's closure.

So I mentioned the transmission, especially over the next 10 years, it's going to be critically important because while the winter peak for the gas system does not coincide with electricity peak, it does coincide with all of the maintenance and upgrade outages that we will have to do. And I mentioned that we have an unprecedented amount of transmission work that needs to be done over the next 10 years. We also have the very significant decarbonization effort within the City for decarbonization generation -- for in-basin generation. The difficulty of that is going to be very high and the investments are starting now for that. And on the next slide, we have the consideration for electricity demand within the City.

And I want to mention something that's very important before we end on -- in a moment. While the cost range from 57 to 87 billion dollars, translating that into rates and affordability is absolutely dependent on electrification. So if we see the electrification that we hope to see, the rates will roughly track inflation. If we don't see the electrification, the rates will grow significantly. So that's an oversimplification, but that's one major takeaway from the LA100 Study that we need to understand, and that gets back to the reliability of the grid and the recognition that demand is going to be growing.

We also, in 2028, have the Los Angeles Olympics,

where we'll have 2 million more people in the city of LA, in the middle of the summer as well. We also have a history of low frequency, high impact events where all of our transmission import capability was compromised. There were three wildfires over the last little over 10 years, and then the Northridge earthquake did the same thing. So in the last slide, I'll just wrap up here with a couple of really quick points.

And I'll skip over the complexity of the grid, because I think we all understand that, and I alluded to a lot of that throughout the presentation, but I want to emphasize the need for sub hourly modeling, and annual ongoing revisiting of this as things change, as policy changes, as technology changes it, it's going to impact our approach to this. And then on my last point, on the approach to resiliency. So for those low frequency, high impact events are very important. And I'll end by thanking everyone again for the continued engagement with LADWP. It's definitely sincerely appreciated. So I'll end there. I look forward to questions.

MS. RAITT: Thank you so much, Jason. So our last presenters are Michele Kito who's a supervisor for Resource Adequacy at the CPUC, and Nathan, excuse me, Nathan Barcic, who's a supervisor for the Integrated Resource Planning at the CPUC. And so Nathan's going to go first. So go ahead,

Nathan.

MR. BARCIC: Thanks very much. And you did get it right. And thanks for having me. So we can move maybe two slides ahead in the name of time. I think that I can assume some level of knowledge in the audience of the CPUC's IRP process, but I'll give a very quick overview before moving on.

IRP is CPUC's Electricity Resource Planning process. It was established about five years ago and its purpose, but if I could sum it up very quickly, is to meet state goals in the electric sector such as GHG targets, reliability targets, and do so at these cost. There's a list of kind of applicable legislation here that you can use for reference, but I think on the next slide is where we can start getting into the question of, well how do we do this planning?

We do kind of a mix of qualitative and quantitative analysis to do the planning that happens in the IRP process. On the quantitative side, we leverage two models. One model type is capacity expansion modeling, which, if I can oversimplify, tries to answer the question of what are the new things that you need to meet your goals. The RESOLVE that, or the model that we use for that is called RESOLVE, which a lot of people associate with the IRP process. But there is a second model that does production cost modeling.

It's called SERVM. And its main purpose here is to validate the portfolios that we're studying, usually the ones that come out of RESOLVE, particularly for reliability, for operations, and for emissions, to make darn sure that we're actually moving on with the best and most actionable information possible.

On the next slide, we can start digging into kind of the difference between system level analysis and local analysis, that a couple of the speakers have already touched on, with kind of a general statement that, for the most part, our models in IRP are configured to look at things from a system level. So RESOLVE is mostly system level analysis. It sees plant classes, not individual plants. And it has a relatively simplified characterization of local area dynamics, which I'll get into in a second.

SERVM does the individual generators, but it doesn't produce new portfolios of resources like RESOLVE does. So the models act very well as a tandem, basically as complements. But neither one on its own, I think is going to be the sole, you know, place for analysis that could support decision making like what we're contemplating here. On the next slide, we'll go a little bit further into our capacity expansion models, characterization of local dynamics.

For the most part, they're based on CAISO'S local capacity study, which I think Neil started to go into, but

I'll reiterate a little bit. It's used to set, at least from a RESOLVE perspective, a local generation requirement that RESOLVE uses that's reflected by a minimum amount of gas generation that must be retained in all local areas identified. RESOLVE has a gas retention functionality that we instituted a couple of years ago and it, where it can choose to not retain any of the other gas generation seen by the model. So not that which has been tagged as needed for local for CAISO rate payers.

So basically, if it sees some modeling year out in the future and there's resource needs that dictate that, hey, it might not be most economical for CAISO ratepayers to retain a gas resource that is, you know, maybe better replaced by something else, the model actually has the option to not retain that resource. But again, that function currently does not apply to gas resources tagged as needed for local needs. This input also contains an assumption that maybe should be poked at, that the generation to support local needs must be new -- or must be gas. And that's something that maybe with future analysis we can examine.

On the next slide we did a quick summary of the things that, or actually, if you can go back one side. The things that IRP has kind of already either done or is already in flight to facilitate large amounts of clean energy procurement, potentially overlapping with some of the stuff

we're talking about here for Aliso. So there have been two large procurement orders that emanated from this cycle of IRP. They're both listed here. One of them was already referenced. It was adopted a few weeks ago. It's for 11.5 gigawatts of net qualifying capacity for the years 2023 through 2026.

In producing an analysis for the need determination of that 11.5 gigawatts, we had to make a series of assumptions. One of them, about 800 megawatts of qualifying capacity was an assumption around that many megawatts not being available in mid-decade because of what we called unidentified retirements. So basically things that we didn't see coming that conceivably could be related to, say reduced access to storage or gas storage at Aliso. So we did solicit party comments specifically on the possible relationship between this procurement and Aliso itself. Neither of the orders listed here contain geographic specificity of where the resources needed to show up. But in prior iterations of the predecessor proceeding to IRP, which was called LTPP, there is a precedent for ordering at a geographic level where needed. IRP, as Eileen mentioned, has also provided electric sector information to FTI's Aliso study.

On the last slide we can start getting into what else could be done to support analysis for Aliso Canyon decision making. At a high level, you'd want to start with

really simple questions, like is it a modeling analysis or is it a qualitative analysis that you want to do? And if it's modeling, is that some sort of optimization like you, one would do with a tool like RESOLVE? Is it a reliability study like one might do with Plexus or SERVM. Is it some sort of enhanced resource stack of resources needed for local reliability? Is it something else? After that you'd want to look at, you know, if and how one could capture system level impacts and local level impacts at the same time? Because right now, generally speaking, they tend to be done separately.

And then we'd also have to look at roles and responsibilities. So that's not just intra agency, but across agencies and planning bodies because I have a feeling this is going to be a large cooperative effort. Energy Division stuff has already started to think about how FTI studied, that Eileen discussed, could be supplemented with further analysis. And it could again involve some combination of quantitative and qualitative study, plus maybe more kind of look at transmission's role, if any, in solving the problem. But right now, again there's no one tool, to my knowledge, that can do all this, you know, in one place, like a one stop shop. A lot of coordination is going to be needed and we look forward to doing so. I look forward to answering questions and I think now I should pass things off to

Michele.

MS. RAITT: Michele.

MS. KITO: Hi there. I think I was -- my apologies. So in the interest of time, I'll skip over a summary of the CPUC's Adequacy Program, assuming that most people know and understand it. I'll just talk a little bit about local system reliability and finally discuss gas prices, electricity prices, and the stability of the electricity market.

So let's start my video as well. Sorry about that. So let's see, in terms of the Local Study that Neil just discussed, the basic idea is you're meant to determine the resources that are necessary to serve load on a high, hot day, so a 1-in-10 day with two large elements out of service. So that might be two transmission lines, n-1-1. So in terms of what that means, I just wanted to put a little context around this. The 1-in-10 peak load for the LA Basin is 18,930 megawatts. The local requirement is 6,127 megawatts. And these are all for 2021. The total generation in the LA Basin, the picture that Neil showed was, is about 9,664 megawatts, pretty much most of which is gas. By my estimate, 8,600 megawatts of the 96 available are gas-fired resources and 6,127 are needed.

So just in terms of local and system reliability, you just want to think about winter and summer. In winter,

gas demand from core customers is high, but electric usage is low. But you still need to ensure that there's sufficient gas to meet the in-basin resources that are needed for local reliability. So and you need those to serve load in case two transmission lines go down. That would be the local reliability portion of it.

In the summer, gas demand for core customers is lower, but of course, demand for electric generation is higher and needed on peak days to run pretty much every gas-fired electric generator on the entire CAISO system. So a bunch of folks have discussed this in more detail. But the question we're obviously trying to answer is how much gas we need to serve both electric and gas customers.

And finally, I just want to mention something that Jean Spencer discussed earlier, it's not just about reliability, literally keeping the lights on, but it's doing so at an affordable price. So we have experienced gas price spikes over the last several years, which have led to electricity price spikes. And these high gas prices can have significant effects on the electricity market price and that's because the marginal unit sets the price for the entire -- the entire market, which Jean spoke about. And so it goes without saying, but I'll say it anyway, these price spikes can adversely affect customers and have a destabilizing effect on the electricity market. Customers

can pay significantly higher bills, entities can go bankrupt and ultimately, it could set us back in terms of our ultimate greenhouse gas reduction goals. And that's all I have for the RA portion. Thank you.

MS. RAITT: All right. Thank you, Michele, and Nathan, and Jason, and Neil, and Eileen. And so if you all wanted to just go ahead and put your videos on and you can take questions from the dais.

COMMISSIONER GUNDA: Commissioner Guzman Aceves, please go ahead and start with you.

COMMISSIONER GUZMAN ACEVES: Okay. Well, I see Commissioner Rechtschaffen is eager, so I'll let him go first.

COMMISSIONER RECHTSCHAFFEN: I'm not that eager to that I know how to turn my mute off. I had a question for Jason. There's a line in your slide that says you need -- we need an approach to resilience in Aliso modeling, and it was -- you were saying that in the context of these low frequency, high impact events, but what specifically do you mean? Could you elaborate on what specifically you mean? What do we need?

MR. RONDOU: Yeah. So I can talk about the approach to those types of events that we've taken in our modeling from the power sector side. I wouldn't know, I wouldn't be able to give an educated feedback on how best to

do that for the gas system. But maybe our perspective on electricity modeling can shed some light. So for the LA100 Study, the approach was to take major assets out of service for a period of time, whether that was months or years, and then determine what additional capacity would need to be built out. So if we took that, took out a critical transmission line, four-years' time, then the model would build out additional resources needed to make up for that.

The other perspective that we've looked at this for is when we run different scenarios, should certain events happen. The, I'll use that the Saddle Ridge fire in 2019 where we lost all three of our transmission lines that come into the City of LA. So we lost nearly all of our import capability and we had to rely on local resources. In that scenario, we were 135 megawatts away from curtailing customers. Luckily, at the time, we had 400 megawatts of solar so that helped out a little bit and then we have, you know, 3,400 megawatts of gas capacity in the city. So between that, we were able to make sure that there was no interruption of power, but we were very close.

So what we do when we look at different model scenarios is we identify, should an event like that happen again, how many customers would potentially be curtailed under various scenarios that we're modeling now? I don't know if that sheds light onto, you know, as to how that's

being done for the gas system. You know, maybe that's already being done. But I think there needs to be some kind of recognition that these events happen. They happen more frequently. And when they do happen, it's often quite a bit longer than, you know, four hours. In many cases, it can be half a day to multiple days.

In one case, [indiscernible] caught fire in 2016, I believe it was. We had assets out for, I believe over a week. So then of course, if there's an earthquake or something more severe, it can be quite a bit longer. So I know that may not be helpful from a very specific standpoint, but I think conceptually we need to just be mindful that looking at, you know, just peaks is really helpful. But it's not the full story.

COMMISSIONER GUNDA: Thank you, Jason. Commissioner Rechtschaffen, do you have a follow-up question, or we could go to Commissioner Guzman Aceves.

COMMISSIONER RECHTSCHAFFEN: No follow-up question. Thank you. Thank you, Jason.

MR. RONDOU: You're very welcome. Thank you.

COMMISSIONER GUZMAN ACEVES: Thank you, Commissioner Gunda. I see Commissioner McAllister, too, so I'll just keep it a little short. But I do really want to just echo what Jean said earlier and what Michele did on the role of Aliso in hedging some of the gas price spikes that

have happened. And they really, the impact we saw in 2018 that led to nearly a billion dollar in electricity costs that were unanticipated. I think it was maybe around 700 million just for the IOU customers. And I'm looking at the ISO's presentation. Thank you, Neil. I'm looking at the transmission costs and some of those are in that range. You know, when we look at the opportunity costs of foregoing something like that, there's of course, the resource of Aliso and then there's these new transmission assets that could be developed. And I'm assuming that when you're -- when you're finding that some of these transmission resources don't make economic sense because as you're noting here, some of the local requirements aren't reduced, necessarily. But do you ever look at some of these opportunity costs in these economic analyses to say, because it is really something that you wouldn't typically look at, I would assume.

MR. MILLAR: So thanks for the question. In a number of cases, in different areas, we have looked at these more extreme events about what's the potential cost? Most of the focus to this point, though, had been largely on what was the impact for loss load for these low probability events, as opposed to also looking at the financial cost. Because it's, putting it bluntly, it's very hard to get any sort of consensus around these high impact but low probability events.

So we've had more success at buildings cases, and I'll pick on the Greater Bay Area, the San Francisco Peninsula, in particular, where we did move on transmission reinforcements there to address the physical loss of supply. But when it comes to the economics, that's something we need to start looking at because the -- we haven't to this point, but that's something we want to explore. But I should mention, we see the need for reinforcing system to hedge for both the financial risk, but also the physical risk. We're counting on an existing and somewhat aging gas fleet for a lasting very long into the future. So even setting aside Aliso Canyon impacts, we're concerned about a game plan that's putting us so dependent on a gas-fired fleet surviving many years into the future. And we're literally planning to be on the edge of the planning criteria over that entire period.

And you know traditionally, I'll say in the old days, which wasn't that long ago, when we built the transmission facility, it tended to give us a step change of capacity that took, that gave us some cushion or margin. And then over time, load growth would catch up and you'd get close to the criteria again and then you'd build something else. Now with different types of resources being included as part of the mix, we tend to live right on the edge and there's very little cushion if something goes wrong at any

point through the whole period.

So we need to start taking into account to moving more aggressively, both on the financial risk that you've outlined and also the physical risk of loss of supply for something that goes beyond the planning criteria for these were extreme events. And I do think that ties, not only to the electric system, but also concern around the gas supply system because, as Jason pointed out, we are counting on the gas-fired fleet to perform much more differently than in the past. I instead of being a relatively consistent provider of megawatt hours, we're calling for the gas fleet and also the gas supply system to provide much sharper peaking capability when there is a critical transmission contingency, we need everyone, and we need them all at full output, like very quickly ramping. So that's a lot of additional burden we're putting on these systems and that's a real concern to us.

And sorry I went off from the financial question. That's part of it, but it's only part of it and we need to push these other arguments as well.

COMMISSIONER GUZMAN ACEVES: Okay. And I just have another tangent question, if I could, for you Neil. Which is and I'm not fully understanding your slide, your graph on, I forget what page this is, but showing the max potential for storage in-Basin. And you're finding for the Greater Basin, there's just above a 1,000 megawatts. And that's, you know,

in the Basin, so maybe I missed some of what you were talking about, but is the main constraint on that the charging capacity? Is that the main constraint?

MR. MILLAR: The -- it's both. The 1,000 megawatt number was focusing on a conventional 4-hour product. And to go beyond the 1,000, you would need longer than a 4-hour product. And traditionally, what we're seeing being purchased are 4-hour duration storage because that's what qualifies for System Resource Adequacy. But so that's partly limited by the load shape itself. A 4-hour product will only give you so much window before you need to move to a longer duration product. And then as you move to longer duration products, then you run into the charging constraints. So that's another limit that we also have to consider.

So it's -- in each area, it's different as to what you hit first you. You run out of 4-hour capability or charging capability for what sets the limit. So each one of these is an area specific study. So what's the specific load shape as well as the projection of what that load shape looks like as we move into the future?

The good news, though, is that with behind the meter solar being so common, that actually sharpens our peak demand window in the post solar window, and it increases the opportunity for storage to be a major player to play a role in helping with local capacity. So this isn't all drifting,

I'll say to the bad news side, there's also the good news about the effect of behind the meter solar sharpening the load profile and creating more opportunity for a 4-hour product.

COMMISSIONER GUZMAN ACEVES: Okay. Andrew, you want to go?

COMMISSIONER GUNDA: Double muted.

COMMISSIONER MCALLISTER: Double muted again. Sorry about that. Neil, you last comment kind of -- kind of foreshadowed this -- my question. It's really to Jason, though. You know, I really appreciate LADWP's sort of, you know, souping up kind of ability to do integrative planning. Right. You know in all the infrastructure, and I think we've seen that, and throughout the couple days without LADWP's perspective here. But I wanted to -- so you had made a statement that, you know, if we see all the building electrification that we hope to see.

And so I guess I'm kind of wanting to explore that a little bit with you. How can we make sure that happens? How can we decrease that uncertainty? How can we sort of approach that as an integrated, as a part of the Integrated Resource Planning and find the resources as it, you know, sort of in an analogous fashion, to procurement itself to make those investments and ensure that we get that electrification to sort of decrease the uncertainty band and

therefore it's got to be, you know, more intentional and direct about the broad investment in managing this transition. Right. So [indiscernible] to maintain and enhance reliability, both on the gas and electric side.

You know, on the IOU side we've got build and [indiscernible], you know, that we're implementing to, jointly with the PUC, to both new and existing buildings, you know, increase the market for heat pumps. And it's a tiny amount of money that's meant to kind of start to transform the market. But really what you highlighted is that we're talking in the tens of billions of dollars overall, and that's the kind of scale we need for our buildings get there as well. And so I guess maybe you could describe how the -- how the demand side, you know, Elliott, yesterday brought that up early on. I think in his opening comments even, that we have to focus also on the demand side as an integral part of this discussion.

MR. RONDOU: Mm-hmm.

COMMISSIONER MCALLISTER: And it seems like that's the place where you're already thinking about and I kind of wanted to explore your, the -- get your thoughts about how to -- how to integrate the demand side in a much more sort of structural way to give it more predictability.

MR. RONDOU: Yes. So I was rushing through just to make sure I kept on time. That concept, and I'm glad that

folks caught it, but if anybody didn't, just to reiterate, the electrification of transportation in buildings is critical to the affordability of the transformation. If we don't see that, the investment that we make in our distribution system and broadly for this decarbonization effort, can provide power to homes, but also to vehicles and to electrified, you know, buildings. So it allows us to spread out those investments over more units sold and then it makes it more affordable. So I want to make sure that concept is emphasized.

But then, to your question about how can we make sure that happens, there's obvious answers like ensuring that the investments in our distribution systems, not just us but everybody's, is advanced, that that continues, and that's, you know, we're prepared from a, you know, infrastructure standpoint to charge those vehicles that we are staying on track to, with state projections, state goals, local goals for electrification, be that through rebates or mandates on the, you know, transportation and building side. But then there's a concept that's going to be significantly harder to quantify, which is adequately addressing reliability and resilience. There are likely folks that are far more qualified to answer the question of how do questions about reliability and resiliency of the electric grid influence, you know, the adoption of electric vehicles? I don't know

that answer. I would imagine that it's non-trivial. I would imagine that should there be an increase in, you know, events that, you know, threaten the reliability of the electric grid, that could be downward pressure on the adoption of electric vehicles and in the move towards building electrification. So I wanted to just emphasize the linkage between the reliability of the system and the affordability of our transformation and the decarbonization of other sectors. They're all linked and then linked in a significant and important way. So I hope that I answer your question.

COMMISSIONER MCALLISTER: It did, and I guess I'll just add so you completely get the, you know, the more kilowatt hours spread the infrastructure over, the more it manages the cost to the consumer. And I guess, you know, in LA it's what, 35 or so percent? 40% of people don't have a whole lot of disposable income to make that investment in end use electrification or decarbonization. And, you know, we, the Energy Commission is in the final throes of tying up finishing up the AB3232 Report, which is telling the legislature how we might get to building decarbonization by 3030, 40% below 1990 3030, by 2030. And you know, it shows that we really need to aggressively electrify our existing building heating loads, you know, water and space. And so that's going to capital. And I guess I'm wanting to kind of begin to merge the topic of how that gets paid for or

financed or whatever and coordinate it tightly with this planning discussion that we're talking about, as in trying to reduce the risk and ensure that that does happen to help manage costs, as you're saying. So I think it's a -- it's a work in progress, but we need a lot of resources to do that. And the question is where they're going to come from.

So thanks anyway. Back to you, Martha. That's all I wanted to ask. Thank you.

COMMISSIONER GUNDA: Sorry. Commissioner Guzman Aceves I have a couple of just high level, I think comment and also kind of a question, and I think in the spirit of what we're trying to achieve here. So I think the first one I think from a comment standpoint, Jason, thank you again for being here. I think, you know, the LA100 is kind of a nice, best case, you know, in a bubble that one could learn from, you know, for the broader state. So thank you for LADWPs leadership on this, but also kind of your willingness to continue to engage and to share information and kind of tie your thoughts on this.

So a couple of clarifying questions really at a very high level. So in the presentation that you just made, you talked about the new, basically fuel dispatched turbines, about 26 megawatts, 2,600 megawatts, and that's in-basin. Just wanted to get through that question a little bit here. I'm kind of looking at two slides. So I have the

slide number 7 and slide number 8 that you presented.

So the slide, number eight, under the natural gas usage, under high load, you know, leaving the early, our No Bio kind of scenario, which is the blue one that kind of completely goes to zero in 2035. The rest of them all sustain a certain amount of usage. Right? So I just want to establish that, that I'm reading this accurately. And two, I believe you mentioned, you know, that kind of a dispatch rates and the need for ramping up the usage will increase, you know, as we -- as we move towards more electrification and decarbonizing the grid.

So I just want to get this clarity on this one. So if we are looking at 2,600 megawatts of in-basin, that is, you know, RNG, our biobased dispatch turbines. Is that still going to be I mean, are, is LADWP envisioning that to happen with the existing system? And if yes, you know, what kind of storage are you anticipating acquiring for that to happen?

MR. RONDOU: So the chart you referring to showed continued gas consumption under scenarios go out to 2045. There was only one scenario that showed gas consumption in 2045. And that was the scenario with the most flexibility that I believe assumes that, you know, renewable portfolio is part of sales, not generation, and that renewable energy credits could offset that. So that was one out of the four scenarios. The rest of the four scenarios fully eliminate

gas, natural gas. There are biofuels and then hydrogen, you know, that stands. I think everyone's aware of that. I just want to make sure that that's clear.

COMMISSIONER GUNDA: Yeah. Thank you.

MR. RONDOU: The capacity within the City of LA, the LA100 Study called out capacities by the different existing generating stations, as well as potentially outside of the Basin as well. So the Intermountain Power Project. So there is hydrogen capacity at that location as well. So the likelihood is that it would need to be in or near the existing stations because the transmission infrastructure has been built around that. So if you start to cite some of this significantly far away from the existing stations that we have, then you introduce the need for more infrastructure that would need to be built. Now, that doesn't mean that everything would go where it exactly is. There's going to be very likely a series of, you know, decommissionings, starting with the ocean cooled units that we have along the coast. Those will be decommissioned. A number of our units we will look at to see can we retrofit and get to very high levels of hydrogen? Can they theoretically be eventually fully retrofitted or do those need to be replaced with hydrogen capable infrastructure?

So the very next step for us is to identify where we would need that capacity most. We know at our Scattergood

generating station near the airport, that happens to be our most immediate and critical need, in part due to electrification in that area, in part due to transmission constraints in that area. But we're also going to advertise, or request for information, for all of our in-Basin generating stations so that the industry can propose to us how we do that. Do we -- are there opportunities on site? Some of our facilities are very large. Could we do storage or electrolysis on site? Are there existing, you know, is there existing infrastructure that could, you know, provide that hydrogen to a green hydrogen to us? I emphasize green hydrogen because again, that's the -- that's the purpose of the small decarbonization, not blue or green hydrogen. I think I answered your question. If I didn't, you know, just let me know.

COMMISSIONER GUNDA: Yeah, Jason. I think you got to most of it. I think I'm just kind of thinking through and again, you know the, and I'm trying to get the big picture here as to the best thing through all the options. Right. And how do we thoughtfully move forward here? So specifically for LA, you know, if we're -- if we're kind of thinking about that much megawatts of in-Basin potential generation, you know that, and some sort of a thermal fleet that potentially may come from hydrogen and elsewhere. Do we, I mean like what is the anticipated infrastructure to be

able to provide the fuel? You know, is it on site generation? I mean, the Intermountain you mentioned, it's a very unique situation. We have the Salt Cavern there. So just kind of, I mean maybe it's a work in progress and I don't want to put you on spot on here, but just wanted to get a little bit more of your thoughts, if you have some.

MR. RONDOU: Yeah, it's the most important question when it comes to maintaining our, you know, ability to maintain the reliability of the grid, the resilience grid in 2035, but we just don't know the full answer to that. We know we have a lot of land at some of the stations. We know that in the Scattergood, and the Harbor and Haynes area, there might be areas nearby that could potentially produce or transport in, so there might be opportunities. The immediate next step is the request for information so that we can try to solicit some proposals that may lead to pilots, whether the pilots are doing onsite electrolysis or potentially constructing or retrofitting pipelines to bring it into the locations.

I hate to say that we don't know. What we do know is we need the capacity. We know that from the study. What we don't know is what's the best way to get the supply there or will that be to produce it on site? I think we're open to, you know, different methods and it may -- it may vary by site. You know we have locations that are along the coast

that have limited footprint. We have a location in the north west San Fernando Valley. So for those of you that are familiar with the area, it's inland and it's a community that has long advocated for the elimination of the gas usage on site, and so we'll have to work with that community to understand, you know, is that something -- is hydrogen something that they'll be very excited about or will they have questions. So there's going to a lot of outreach for that into that [indiscernible]. So I say that because it's not going to be a one size fits all approach to each of these generating stations. Some of them, you know, may have, actually all of them will need, you know, other forms of storage as well. So whether it's in or near those generating stations will likely need lithium ion or other types of storage technologies to further eliminate the shorter term, you know, need for that capacity, be it gas in the near term or eventually hydrogen in the long term.

COMMISSIONER GUNDA: So Jason, I have one quick follow-up and I'll pass it on to Commissioner Rechtschaffen who also raised his hand.

Just, sort of making sure, the need for the 2,600 megawatts, I'm kind of just looking at SB100, the analysis we've done. We've looked at that idea of different scenarios, when we say that that 2,600 megawatts of hydrogen or other biofuel based thermal generation is required, what

is -- what is triggering that? Is that based on cost, land use issues? I mean, because, you know at the SB100 we haven't been able to do this level of local analysis. Right. It's just a system level analysis. So I really would like to get your feedback and thoughts on this. Like what's driving that?

MR. RONDOU: Yeah. It's actually not just 26. That's the lowest end of it. It actually, under the scenarios where you use gas with a renewable credits for biofuels, it actually goes to, in some cases, up to about 5,500. And what drives that big growth is that the cost -- that cost assumptions for hydrogen are very high. So it only, the Capacity Expansion Model, only builds out and only proposes hydrogen when it's absolutely needed. And a lot of that is going to be driven by the approach to taking out certain assets for long periods of time and ensuring that the peaking capability to serve loads under those scenarios is there. So that means, again, the usage of it is extraordinarily low, but the value, you know, the importance of it is very high. Yeah, hopefully that answers the question.

COMMISSIONER GUNDA: Yes. I think, you know, I would love to follow up on this. I mean, I'm just kind of thinking as substitute, right. I mean like, you know, could we conceive of storage. I mean like why wouldn't, I mean

like storage is cheaper based on the SB100 modelling that we've done, why does this resource become important here? It's just basically that kind of question.

MR. RONDOU: Yeah. And again –

COMMISISONER GUNDA: Go through the options.

MR. RONDOU: Yeah, and just I'll really quickly address that. The answer is absolutely storage gets built out first because that's going to be the low, you know when I say storage, I mean lithium ion, the, like the lowest cost available short term storage. That will get built out first. But what doesn't, what that won't do is we won't build that out for you know, 36 hours if there's, you know, one period in 8,760 hours of the year where we need that really long duration. The model very likely is not going to build out a bunch of lithium ion that gets used once every 10 years or once, you know, once a year because it's -- that's not -- that usage is not the lowest cost approach to solving that problem. That's where something like biofuels or hydrogen would solve that problem more cost effectively.

COMMISSIONER GUNDA: Great. Thank you. I think that really hits that point. Thank you so much.

MR. RONDOU: You're very welcome.

COMMISSIONER GUNDA: I don't know if Commissioner, yeah, Rechtschaffen, you raised your hand. I don't know if you wanted to ask something.

COMMISSIONER RECHTSCHAFFEN: Jason answered in part what I was going to ask. I'm interested in the timing of these conversions of the in-Basin plants, especially as it relates to the Aliso Study that we're doing, and the options of how long Aliso's maintained and what -- and what configuration. What I think I heard you say is Scattergood is the most immediate priority. And then for the other plants, there is going to be a variety of pilots consideration of retrofitting and there's uncertainty about when those -- the retrofitting will occur, and what will occur at those facilities. So you really probably can't say much more in terms of dates other than Scattergood, if at all. Is that fair?

MR. RONDOU: Yes, with the exception that the LA100 Study does call out in five year increments when that capacity is needed. The only thing that I'll say is that that presents scenarios, not an adopted plan by LADWP. We're going through that process now of saying, you know, LA100 looked at four scenarios, we're going to model, based on what we learned, we may model more scenarios beyond that or a variance of those scenarios, either to drive down cost or to, you know, improve environmental outcomes. And then we will adopt a scenario and that will give us a much clearer picture of what that, you know, build-out year by year will need to be for all resources via local solar, local storage, or

hydrogen capacity.

COMMISSIONER RECHTSCHAFFEN: Thank you.

MR. RONDOU: You're welcome.

COMMISSIONER GUNDA: Thank you. Looks like we're right on time so we could pass it back to Heather.

MS. RAITT: Thank you, Commissioner. Actually, this is when we were going to take attendee Q&A, but there are no questions. So if you didn't have any more burning questions, then we can move on to the next segment, which is the Roundtable Discussion.

COMMISSIONER GUNDA: Yeah. I think before we close this off then, I just want to say one more sincere thanks to the panelists. That was really, really helpful discussion, specifically team from CPUC, and Jason, and Neil, thank you so much for your time on this. So I think the next panel, really is Commissioner Guzman Aceves, so I'm going to just, Commissioner, please take it up.

COMMISSIONER GUZMAN ACEVES: Okay, great. Thank you, Commissioner Gunda. And thank you also for all of our previous panelists. As I mentioned at the beginning, this is more of a roundtable discussion, so I do invite you to keep your cameras on and jump in. I'm going to really have just a couple of questions and do maybe a rapid round of responses from each of our panelists and then allow just open discussion, as I said. So we have folks that have been here

already in the morning discussions, and we also have a few additional panelists who have joined us who have been involved in this general discussion through most the Proceedings, but also overall in our larger discussions around transitioning and reliability.

So I'm going to maybe allow a couple of introductions for the folks who have not yet. And I'm thinking, Jason and Neil, you guys, Eileen, have already -- trying to find the correct list of the panelists. Excuse me. So we have someone, Neil, I think you're staying on from the CAISO.

MR. MILLAR: Yes.

COMMISSIONER GUZMAN ACEVES: And Jason. I think we also have someone from Edison joining. Is that correct? I apologize for not having this in front of me.

MS. RAITT: We have Robert Grimm.

MR. GRIMM: Robert Grimm.

COMMISSIONER GUZMAN ACEVES: Okay. Great. Thank you, Robert.

MS. RAITT: Commissioner.

COMMISSIONER GUZMAN ACEVES: Go ahead.

MS. RAITT: I was just wondering, do you want me to let you know who we have for the Roundtable?

COMMISSIONER GUZMAN ACEVES: Please. Thank you.

MS. RAITT: Sure. So we also -- we have Robert

Grimm. He's our project specialist with Edison. And we have Michael Colvin, who is the director of Regulatory and Legislative Affairs for the California Energy Program at the Environmental Defense Fund. And we have Jin Noh, who is, or excuse me, Jin Noh, who is the policy director at the California Energy Storage Alliance. And then, of course, as you mentioned, Neil Millar and Jason Rondou are joining us from their presentations earlier. So thanks.

COMMISSIONER GUZMAN ACEVES: Thank you, Heather. Okay. So the first question I have for you, obviously we've heard so much of these different dynamics around the future, what the future would look like if we did not have Aliso, and if you could put out just maybe the top two or three most compelling solutions, or alternatives, or strategies that you could recommend that provide us with local reliability or other needs that could be met. What are those solutions and alternatives? And again, it could be, as has been mentioned, not just with the -- with the supply, but the economic hedging as well. And why don't we start with some of our new panelists. Looking at Michael here.

MR. COLVIN: Well, thank you so much, Commissioner, for one, just having me on the panel today. And I really enjoyed all the presentations on the previous panel.

So in the future without Aliso, I think there are -- the way I think about this is that there's sort of two

pathways that the decision makers need to think about alternatives. The first one is displacing the gas use, and then the second one is displacing the economic benefit.

So displacing the gas use. EDF put out a report last quarter saying here are strategies to help get to a completely decarbonized electric grid by 2045. And I'm tying that back to the Aliso issue because one of the options that was sort of presented in that paper, knowing that natural gas use is one of the largest end uses of gas in the, and where Aliso is out there, and this entire gas generators that rely on Aliso for it, if we're not going to have Aliso around, then we also pretty much, by definition, take electric generation with carbon capture and storage off the table. If we're saying we're not going to use gas, then we're not going to date that gas from CCS option.

So if that's the case, if we know that we're not going to be using natural gas-fired electric generators in the same way because Aliso has gone offline, then we're going to have to make other types of investments. And that could be into importing nuclear from out of state. It could be from doing more in state use of cleaner biofuels, such as hydrogen. It could be using expanded use of geothermal. There are other options that are out there, but we are going to need some sort of clean and firm option that is out there to help firm and shape all of the intermittent renewables and

short duration batteries that we're going to have. I can go into a lot more detail on that study, but I'll just sort of note that it's out there.

And then going back to some of the things that Michelle was talking about in her presentation, and I think Jean mentioned this morning, was that Aliso does provide an economic benefit to customers. But if you're not going to have that asset around, you have to think out, well what are the other ways to help keep the energy burden or the energy bill for customers smoothed out? And so that's going to need to be a very targeted electrification push and a targeted rollout of alternative fuels for when electrification can occur. And so one of the strategies that I think that would need to occur is how do we not just get the technologies out there, but how do we get them out there in the places where we are helping the most vulnerable customers first? And we are looking at the intrinsic book value of the gas assets that would be fed off of that Aliso system. So that way we are not stranding huge costs that would have to be picked by our most vulnerable customers. And so doing targeted electrification and targeted deployment of cleaner, non-gas based fuels that wouldn't be stored in Aliso facility is going to be really critical. And we've talked a lot about that in the Building Decarbonization Proceeding, and so we can, you know, point back to that for some other examples.

The last thing, since I have to mic, that I'll just mention. Sorry, I went on mute there for a second. without [indiscernible] in service, there is going to need to be new investments into the system. We know that, but there's going to need to be new investments into the gas system as well because we're still going to have a gas demand around. But the gas, large gas users, whether they're the noncore customers of the electric generators, have to figure out, well how do we pay for those investments are in a way that is equitable and smoothed out.

So updating our gas tariffs to accommodate the shutdown of Aliso, and also recognizing that new investments to make the system work, the gas utility still is going to have an obligation to serve. That cost allocation is going to be really important to figure out. So that's sort of another thing that I think the Commission is going to want to have on its radar. With that, I think those first two minutes. So I'll yield back over to others.

COMMISSIONER GUZMAN ACEVES: Thanks, Michael. Why don't we head over to Robert?

MR. GRIMM: Okay. I think that the first thing, I agree that we have to reduce the gas demand. I think it's, looking at the FTI Study, there were a lot of challenges with that study and a lot of assumptions that were made for simplifying assumptions that in the end, I don't know if it

would have -- would result in a really reliable gas system. So it seems that reducing the gas load is an important thing to do if you're going to have -- not have Aliso Canyon.

The second issue, I would say is, and this is more, this isn't at the same level that you are talking about, but it's more of a structural issue that has to change. I think it -- we also have to look at how we would deal with shortages of gas. As it currently stands now, you all may or may not know this, but the electric generation sort of provides a buffer for everybody else. So to the extent that we run short on gas, electric generators get curtailed. And we get curtailed regardless of whose gas doesn't show up. It doesn't -- so one of the questions that Commissioner Guzman Aceves had asked us to talk about is our hedging strategies and specifically what we do in order to have reliable gas supplies. And the truth is we can have as most reliable gas supplies available through the -- into Southern California. And it doesn't matter, our gas, we still wouldn't get to burn it. Others would get to burn it. So to the extent that we start winding down power generation, and to the extent that we don't have this big buffer at the top of the gas queue to curtail, and to the extent that as other speakers have talked, that we become sort of more of a ramping, a ramping supply. It seems that one of the structural things you have to change is what do we do with scarcity of gas?

Specifically, I think we probably need to revise the gas curtailment sequence just because it doesn't -- It wouldn't make sense if we don't have a big buffer of gas on the top -- on the top of gas stack, so.

COMMISSIONER GUZMAN ACEVES: Okay. Thank you. Jin, do you want to go next?

MR. NOH: Sure. Thank you, Commissioner, and thanks for inviting me to serve on this panel. So I'll say, you know, first and foremost, you know, obviously I think energy storage will play a critical role in displacing or reducing the need for gas generation, which could, you know reduce the need for Aliso Canyon. So to Commissioner, your comments earlier about how there are certain like tried and true methods that we, you know, underwent a couple of years ago where, you know, SCE and SDG&E had to procure energy storage to address the release of Aliso Canyon moratorium. And we had 160 or so megawatts being procured collectively to mitigate some of those challenges. And especially if when those solicitations were structured so that the procured resources actually had the guidance as to where to connect. You know, how can it reduce the need for gas generators that might have significant draws from Aliso Canyon? In that sense it could really provide that support to reduce the gas demand from those -- from those generators.

Some storage can provide many of the same, or

better, fast ramping capabilities and peaking capacity. That might, you know, serve the benefit to allow, you know, the gas storage sites to be filled to address winter demand. And so I think, you know, of course it's much more complicated when we think about, you know, how do we fully eliminate or displace a need for Aliso Canyon. And we have to take into account the ISO's LCR reports about, you know, being sure we maintain reliability for contingencies, ensuring enough generation is available to charge those systems.

But to that point about how there might be limits as to how much the four hour storage portfolio can take us to address those Aliso Canyon needs. I think it's important to consider that there are a suite of long duration energy storage technologies as well that can address these larger, multiday, seasonal energy storage needs and maybe potentially make it more likely that we can eliminate the need or reliance for Aliso Canyon.

And to that end, you know we did complete and publish a Long Duration Storage Study just in December 2020. So not too long ago where we conducted a similar type of capacity expansion modeling exercise to determine how we can meet our 2030 and 2045 goals. And granted, it was a system wide model that didn't look at the specific local conditions and context of Aliso Canyon, but when we looked at some of the sensitivities around deep decarbonization targets at a

system level where we're trying to achieve 12 million metric tons or zero million metric tons by 2045, it really highlights how, you know, long duration storage is really needed to provide not only the longer duration needs, but also address the winter reliability needs.

So happy to, you know, explore more but yeah, I think those are two of the main points I wanted to make.

COMMISSIONER GUZMAN ACEVES: Thank you. Jason, do you want to go next?

MR. RONDOU: Sure. I think LADWP's perspective is going to be a little bit different for many of the reasons that I already mentioned earlier, but one that I don't think I explicitly mentioned, which is we're vertically integrated. We own and control our resources. We have a significant amount of transmission capacity that can bring power from many different parts of the western United States into the City. So in many ways, we have some advantages. Now, I already talked about a lot of that really is concentrated. We sort of have a geographical concentration of that that transmission. So that does, you know, erode a little bit of that benefit that we have. In the past we've done things like set aside, you know, transmission capacity to ensure that should there be, you know, a shortfall in gas supply, that you know, potentially we could, you know, import additional power within the City. And some of it is about

scheduling, whether it's ensuring that we have more resources, you know, outside of the Basin available should we need it.

Now, I just want to caution that that doesn't eliminate all of the risk. More strategies, including expanding our demand response programs. So several years ago, we didn't have a Demand Response Portfolio. We didn't have demand response. We had some customers that we can call upon that would, you know, we would joke that we, you know, email and then call them and they would send somebody running around the building, shutting everything off. But we didn't have something that was automated. We built that out last summer. We're expanding it this summer and we're modernizing a lot of our demand response. And we're actually building it out more for now, expanding storage. And what I'm referring to is, you know, the traditional lithium ion 4-hour storage. We know that we need over the next 10 years, 500 megawatts of in-Basin within the City of LA, storage. Some of that's going to be customer sided. Some of that will be sited on maybe a little bit larger scale, potentially at key facilities.

So we also know from our modeling that we are going to use Castaic pumped-storage a lot more than we used to. So we are very, very fortunate to have the ability to have longer duration storage with Castaic Power Plant. We're also

negotiating a contract for longer duration storage that may give us potentially above ten hours' worth of storage. Now it's, you know, just in negotiation stages so I caution that, you know, for some of these technologies that are not quite, you know, as mature as lithium ion, those negotiations may take time. They may not prove out, they may work out. And if they do, and if it does prove out, it's potentially technology that we would bring within the city, which will give us even more duration. So looking at it from all of those angles, I think is going to be very, very important. I just caution that it doesn't -- those altogether don't eliminate 100% of the risk. But it is, you know, we're well positioned in many ways, but we still have our risks as well.

COMMISSIONER GUZMAN ACEVES: Thank you, Jason. Neil.

MR. MILLAR: Thank you. Yes. I would say that we need to consider both the system and local implications on the gas supply side of the use of that generation right now for both purposes and the burden that places on the gas system. We also have to consider that some of the electrification strategies that we're talking about to reduce greenhouse gas emissions overall from the state perspective involve putting more burden on the electricity system. So even if that reduces end-use consumption on gas, simply moving some of that burden over to the electric -- the

generation side, that then is still requiring us to get energy into the Basin and perhaps considerably more energy into the Basin that is being delivered to this point, depending on the success of some of the electrification vehicle, electrification and building electrification strategies that are -- that are moving forward. So we're very concerned about the possibility of a sudden uptick in forecasting coming out of this and how much cushion we have in this supply, overall, into the Basin area. So we firmly believe we need an actionable trajectory for dependence on gas-fired generation in the Basin and a clear trajectory of how much of that is reasonably expected to be made up of other generation sources inside the Basin and versus dependence on energy that has to be imported into the Basin.

And that would be the basis then for us getting on with some of those transmission alternatives we talked about. The real concern there is that those are not going to be easy projects to get permitted and built. We need, that we need the lead time to get those moving. And we can't simply fill in with storage until we're right on the edge and then start developing these long lead time projects. So that's why we see that we need a collective, actionable strategy. And unlike Jason who's, LADWP is sort of on their own, is vertically integrated with us, where we're in partnership with the state agencies on this -- on this path. And we need

the forecasting to take into account the possibility of an uptick from electrification strategies, a targeted strategy of gas-fired generation reduction, and use that as the basis for getting on with the transmission development into the area.

And we have been in discussion with LADWP, and we'll look forward to continuing those discussions about any opportunities for partnering on some of these transmission facilities to look for the best overall solutions and we're -- we need to get on with this because the situation we're in right now is simply not sustainable. We need to get going.

COMMISSIONER GUZMAN ACEVES: Thank you, Neil. That's a perfect segue into this next question, which is really how do we move forward with some actions? There's, you know, certainly potential actions that are needed for even this winter. And what you're talking about, Neil, is not waiting any longer on these medium and longer term actions as well. So my final round of questions to you before I go to my fellow commissioners and the public is, what are these immediate actions that we should be taking. some that will have immediate potential impact and some, like Neil's, describing immediate actions that we can take towards longer or medium term impacts. So if you can just be really direct about what are those actions that are needed and why

don't I just go back in the order we started? So, Michael, I'll turn to you.

MR. COLVIN: You know, it's a great question. So a couple of things that I think that can be done. The first one is I completely agree with what Neil was just saying. We need to start making investments now so that we have more options in the future. So you know, start holding the solicitations for the non-gas resources and start figuring out, for the gas generators that are going to be online, direct the gas utilities to say, well, what are the things that you're going need to do in terms of compressor upgrades, or in terms of fuel upgrades, in terms of, you know, pipeline capacity upgrades? What are the things we need to do if Aliso's not going to be around and have them start doing a cost comparison of what those investments are?

One of the things that can be done relatively in the near term is, there's a pending proposal before the PUC to have the electric generators to have their own independent tariff or gas pipeline capacity access. And to allocate costs to them, and that would help give, if the commission were to approve that, that would help give an apples to apples comparison to non-fossil based ramping capabilities, that if we allocate the costs to the gas generators, and say it goes up by 5%, and then the short duration storage now looks more cost competitive than the wholesale market because

it's now accounting for the ramping costs that the gas market supplies, we will be able to make better determinations.

So getting that tariff approved, getting the cost information approved, and getting that into a side by side comparison of the non-fossil alternatives are all things that can be done now that would help inform what would be done in the future.

In terms of the affordability issue of how do we help ensure that if Aliso wasn't going to stick around, how do we smooth out gas costs for customers? It's really needing to take advantage of all the demand side management programs that you have in your arsenal, whether it be efficiency programs, the demand response programs, or the electrification programs, and really go after the vulnerable populations and look at the existing book value and target those customers first. And that's how you're going to get the biggest bang for your buck.

There's some great analysis that Commissioner McAllister did in one of his gas dockets last year that showed that if you target electrification versus not, you're able to start to figure out how you could actually save customers money on the stranded assets issues. And so thinking out strategies of how do we target those programs and how do we get them in the hands of the customers who are going to need the most is something that both Commissions are

ready to go on, but we haven't seen that action yet.

COMMISSIONER GUZMAN ACEVES: Okay, thank you, Michael. Robert.

MR. GRIMM: Oh hi. So I just sort of need to start off by saying that I, the role that I play at Edison is sort of the gas expert and I help resolve specific gas issues. A lot of the conversations that the other speakers are talking about are broader ranging. And so I just want to say that my, I'm afforded to focus, primarily just on the other gas fed issues. As it relates to what I said earlier, I think we do need to look at, in gas scarcity if you -- scarcity if you don't have Aliso Canyon.

I think that we need to make sure that the gas system is responsive and robust, that we -- as it could be. I think that there needs to be immigration with energy storage in order to help smooth out some of the ramps that are going to come from the -- from the gas generation. But an immediate need, and I do think that there needs to be some attention, not, it doesn't have to happen in the next year or two, but I do think there needs to be in the next five years attention to how to deal with gas scarcity because it will happen. And as it stands right now, the electric industry, electric generation won't be available to provide that balancing service for the system. So that's it.

COMMISSIONER GUZMAN ACEVES: Thank you. Okay, Jin.

MR. NOH: Yeah. I think it's a challenging issue just based on the previous presentations where we have to consider all the gas and electric interactions and I think, you know, by no means is energy storage's an end all or be all for this complicated issue. I think it's going to involve, you know, end-use electrification, transmission, and the solution, you know, how much storage can go toward achieving the goals of the Proceeding. Is, you know, whether the goal is to achieve a future without Aliso by 2027, or more likely, it can be achieved by 2035.

But with that said, you know, I would say three major recommendations from CESA, first is one of the near-term things that can be done is to identify every opportunity to hybridize storage with gas plants. You know we've done modeling to this end as well, where we showed our hybridization of peak [indiscernible] can really reduce the daily starts and really reduce the daily gas usage of the unit by having the storage on the front-end provide that those spinning reserves and for the peak or unit not have to upgrade at its [indiscernible], which you know, generally improves the efficiency of the fleet, reduces criteria pollutants. And we saw that with the 2016 sixteen SCRFO as well, where they procured a project just to this effect. And given the fact that they have lower permitting and development risks and can leverage existing deliverability,

that could be a quick near-term solution. That's very reasonable.

I think the second one is more targeted to our longer term needs, so because storage does take time to materialize. And if we're looking at 2027 to 2030 needs, leveraging the IRP procurement and identifying, you know, where it's smart to direct some of that storage procurement to specific locations that could reduce gas need of front-end units that are within that Aliso Canyon delivery area and also provide the local RA benefits.

And then I would say that the last one is we're behind the meter storage resources. I think Neil commented to that effect about how we can shape the electric demand to make it more likely that we can address some of these needs, and especially in a locally constrained area where there's not that much space to build, you know, mountains and mountains of storage. You know, how can we take advantage of the built environment and leverage as much locally sided solar plus storage as possible.

COMMISSIONER GUZMAN ACEVES: Thank you, Jin. Jason.

MR. RONDOU: I think two key ways. The first is going to be the rapid increase in renewable energy because that will displace gas. We are negotiating, by the end of the year we'll have under negotiation enough renewable

contracts to get us to 70%. So we will very soon be on track to hit the new 80%renewable goal by 2030. So that's one, so pushing that gas usage down.

The second is ramping up distributed resources. So we launched an open solicitation for storage, both local and the utility scale. And that's already out on the street. We launched a distributed resources RFP and we're looking at trying to make that an open solicitation as well, so the proposals can come in and we can negotiate those as well.

And then I already mentioned expanding demand response. I would just caution that that helps drive down gas usage significantly, but it doesn't fully address the peak demand of gas.

COMMISSIONER GUZMAN ACEVES: Thank you. Neil.

MR. MILLAR: Thank you. First, we're eager to see as much storage and other resources brought on the grid as quickly as possible. Over the next five years, I think it's actually almost physically impossible to overbuild given the demands that we have for resources overall. Storage is an important part of that. The mid-term procurement authorization was, which was voted in on my birthday, one of the best birthday gifts I've seen in a long time. And we need that storage to be directed to where it will do us the most good.

Now, having said that, in these local capacity

areas, the charging limits have to be respected. So building from there. When we can't pat ourselves on the back and say that's a job well done, we need to pivot it simultaneously on getting some longer term infrastructure in place so that we can beef up the charging capability and continue to have storage as a bit of a buffer because despite Jin making the comment about how it takes time to build storage, it's one of the fastest resources we can get on the system. The speed is a huge advantage, so we have to use it as a buffer while we're putting other longer lead time solutions in place and reestablish some of that buffer for load forecast and other uncertainties as we move forward.

So one of the first things I would encourage is stronger direction to the people that are doing the mid-term procurement to actually focus their efforts where they will also, those resources can also provide critical local capacity benefits in the near term. So that's one of the strongest recommendations I think we'd make out front and on a parallel path, getting going with some of these longer lead time projects so that we're not less dependent on storage that is running out of charging capability.

COMMISSIONER GUZMAN ACEVES: Those are all excellent recommendations, and I think I have some follow-up, so I'm going to ask my fellow Commissioners to join me now on this dialogue and see if any of you have any specific follow-

ups. Commissioner Gunda.

COMMISSIONER GUNDA: Yeah. First of all, Commissioner, thank you so much for setting up this this Roundtable, I think is our, you know, nice to see Michael and now I know Neil, belated happy birthday in June. Now I know, June 24th was a special day, so I'll remember that. So and then nice to see Jin and Jason. Thank you for your continued engagement on this.

So I think, you know, a couple of high level kind of questions, if you're all willing to comment on this. So I think I'm kind of thinking through, just as a flowchart here, right. Flowchart the analysis that is required to get to a good decision that is --that is in the best interest of the public. So and that kind of -- that kind of thinks through the reliability, safety, and affordability. Right. And then our climate goals. I'm just kind of thinking through a flowchart here. So it looks like, you know, I mean, you know, the Aliso Canyon retirement, whether we talk about 27, 35, you know, whatever the timeframe might be, I'm going to leave out the time frame for a second and say, you know, let's just consider that retired at some point in time. When we consider that as a retired, I know kind of retirement, then a few things came up in the last couple of panels. And then this discussion, which is just a risk of dispatch needs. Right. So like, you know, there might be a risk for, you

know, rapid dispatch, which will require some level of storage to compensate that. That is like one argument that kind of solidly came through as a discussion. So and then there was the whole idea around the rates and then the prices and how do we, you know how can a storage asset really help hedge us around the prices?

And then the other one was just the technology limitations. You know, I'll just put that in that category, which is we still don't have these, you know, dependable, long duration storage that we can depend on to get through these times and along with the costs of those technologies.

And then finally, you know, we think through the other side of bringing in some energy from outside the Basin. Like in this particular case, you know, we might have some transmission constraints and then we need to think through all those issues. So there's like four things. So and I'm kind of just getting to the end-goal, right. The end is, it's gone. So we laid out all these risks. And then Commissioner Guzman Aceves kind of laid out, okay tell me what we can do immediately. As you think through this, right. I mean, as we think through this inevitable transition towards kind of a decarbonized economy, from here to there, how do we reduce risk? And so whatever time frame it is, I mean, I think we're all talking through the Aliso Canyon, yes or no to risks around price cost, dispatch needs

and then sense. So if there's one point that you want to add, each of you, like how do we think about a future where Aliso doesn't exist, and the risks are mitigated?

MR. GRIMM: This is Rob Grimm from Edison. I'll start. I think if you're if you're focused on risks, I think what you do is you push, you set a target to where the gas load, the gas load for core customers is reduced by some level based on building electrification. And then you also look at when the electric load has reduced by some level, gas demand is reduced by some level. And once they reach, once you get to a place where you can shut down Aliso Canyon, then that's a good time to do it. So you said it doesn't have to be a specific time, specific time. How do you know when you're there? And it seems like we laid out all these things that have to happen in order to have a reliable system without Aliso Canyon. Some of those things have to start happening. And there's a point where enough of those things have happened that it makes sense to shut it down. That's my thought.

MR. COLVIN: This is Michael at EDF. So, Commissioner, I guess the way that I would frame it is the policy choice of whether or not Aliso should remain is completely within the State's decision making that this is you know, if you want to keep it open, there are certain things that have happen. If you don't want to keep it open,

there's certain things that have to happen. But the decision needs to be made that, you know, if you just look at the current steady state and say, well, when are things going to change? It's not going to change unless you ask it to happen. And then you need to have a plan and execute that plan accordingly. But kind of step one on your flowchart needs to be, do we want to keep this asset around or not? And if the answer is yes, then what are the things that need to be done to make it safe, reliable and etcetera, etcetera? What are the -- if the answer is no, then how do we transition out of it in the most orderly and low risk way possible? But I think that decision just needs to be made because the market is not going to suddenly transform itself into a place where Aliso isn't used. This is going to be a policy call. So as you're going through your flowchart, I think make the decision and make the time frame based off the best available information with certain offramps or changes, you know. But make the decision. That's what's going to have to happen first. So step one.

I can go more into some of the other things that you talked about, but I just wanted to sort of bring that to light first.

COMMISSIONER GUNDA: Sorry, Michael. I just want to clarify, I think THAT, you know, in the flowchart, I'm thinking, you know, we have the status quo, which is we do

have Aliso Canyon and there is a lot of things we can do under the status quo. I think, you know, but I'm kind of just thinking the other side. Like let's just assume for the sake and for the for the sake of having a solid conversation here, let's say Aliso Canyon is gone, right. Like how do we kind of figure out, you know, some sort of amortization when we feel, you know, the risk has been mitigated enough that we're ready to do this? Right. I mean, the same thing goes to all policy questions here, right? I mean, you know, that how much do we -- do we order in terms of procurement? I mean, we have LOLE standard, you know, one day in 10 years. And then at that point, miraculously, we all feel okay, we're good to go. You know, we'll kind of look at that risk. So I think the kind of idea it is, you know from me, you know, this is kind of not to force kind of a conversation in the wrong direction, but how do we even come up with that set of options? But that is prudently considered. We're, okay, now that we've checked these buckets, we feel pretty good to get it closed. And I think I would love to hear your thoughts along those lines. Michael.

MR. COLVIN: Okay. So I appreciate that. So for me, I think there's both the options and the metrics and so I think there are kind of three metrics to consider. The first one is overall cost based on the customer category and really looking at core customer and residential services such as

that, and then the noncore customers themselves because I think even if you were trying to figure out a way to shut Aliso down, there's a lot of options to help alleviate the burdens that will be hard. But I think there's a lot of options to alleviate burdens onto some of the core customers and some of the residential customers. I think it's, you know harder if you're a renter and harder if you're in a low income situation.

You know, there are some options that are out there. If you're a noncore customer, you might not have the natural hedging that the gas utility uses optimally so that the actual physical storage is still partially there. There are some things that we have to think through. Well, how do we move gas around fast enough to meet all of the pipeline transport needs that are out there without that sort of centralized hub of that storage facility? And that's going to mean new investments into the gas system. And so I think one of the early steps that's going to be required is, well, how do we move that gas around for the remaining large noncore customers? And are there ways that we can reduce that gas demand to alleviate some of those new investments? And that's when you get into the non-pipeline alternative options that are out there. But I think kind of going through in that structure is going to be really helpful. So those are some of the metrics that I guess I would suggest

that get developed in your mind first to help you with that decision making of what's the affordability impact based on the customer class and then what are the system demands on the remaining customers who want to exercise some of the affordability options. And then I would look to the non-pipeline alternatives, knowing that that's always sort of the most cost effective option that's out there. There are a couple of other options that are available that will help you reduce some of the spikiness. That demand, you know, some wholesale trading reforms, some gas demand response reform, some other things. That's not going to solve that problem long term, but they might help you in some of the transition stuff.

You know, I note right now that there really isn't a good statewide gas demand response exclusive program. You know we have some trading, we have some hedging, and some other stuff, but we don't have a gas DR program in the same way we have electric. There hasn't been a need for it in the same way. We don't have gas intraday price volatility in the same way. But we might have to start thinking along those lines of how do we do that? So I guess, you know, coming up with those menu of options of one of the demand-side options that can be done to help smooth some of these things out, knowing that we wouldn't have the storage facility that we kind of used to help rely on some of that, will be a helpful

next step. I'm probably talking too much, so I'll yield the mic back over to others. But happy to, you know, give you more ideas later if you'd like.

And Commissioner, it looks like you're on mute.

COMMISSIONER GUNDA: Oh no. Thank you. I was just saying no, I think you wet it up really well. Thanks, Michael. Really appreciate that.

MR. RONDOU: I would -- I would just add, you know in 2035, it will have little to no relevance to LAWDP, based on our planning, you know, plans to be carbon free by 2035. Between now and that time, gas usage will drop. The peak will be, you know, similar to what it's been, in the future. But what I haven't talked a lot about is the unprecedented investment in local transmission. So transmission within the Basin and the need for having outages along existing transmission lines to upgrade those lines over the next 10 years. And we typically do those upgrades in the winter opposite our electric peak. And after the Aliso Canyon incident, we had delayed some of our transmission upgrades due to that. So I think there needs to be a really -- once we have a schedule of our transmission needs, and there's, you know I would imagine that as more and more utilities adopt more aggressive goals towards full decarbonization, there's going to be a growing realization that transmission, no matter what their strategy, is going to need to grow, even

if it's a local strategy, they're still going to need the significant more, significantly more transmission, not necessarily new corridors, but upgrades, and in some cases new corridors.

So understanding how the phasing of those upgrades may or may not coincide with the need to use storage and whether or not the likelihood of those coinciding is a -- an acceptable risk to LADWP and is an acceptable risk to the state. And that's an extraordinarily hard thing to estimate because it's qualitative, because you need to think about as we all transition down the, you know, world's most aggressive path towards decarbonization, we're trying to lead the world and should we stumble significantly along that path, what will that mean for our ability to lead the rest of the country and the rest of the world? So not to be dramatic, but I do think it is worth understanding that risk and understanding, you know, our ability to lead versus be looked at an example of having a major, major stumble along the way. I think it's worth, you know, thinking that through and modeling it to the degree that it can be modeled.

COMMISISONER GUNDA: Thanks, Jason. So really appreciate that.

MR. MILLAR: It's Neil here. The other thing I would just like to add is that the risks that are being considered. Are actually growing in terms of the type of

risk and the range of possible outcomes. Climate change, unfortunately, is alive and well. The temperature variations we're seeing, the extreme weather events are becoming far more common. We are facing riskier times and those impose additional risks on the system. So the more conventional approaches that worked well for many years just aren't going to get us where we need to be. We're also at a time where, you know, the phrase least regrets planning largely came out of, was largely employed in the transmission industry for many years, looking at what projects are supportable, regardless of which of many scenarios plays out. And I don't believe we're at a point where that will get us where we need to be anymore.

We are at a point where some firm, bolder decisions are going to have to be made to take us to the next level, committing to certain paths. But we don't have to commit to the 20 or 30 year path. I think we need to start down some paths, learn, build, and adapt as we go through some of those trajectories. I do worry at times that we get caught up in our own analysis thinking that we have to develop the perfect 20 or 30 year plan before we can move on what we need in the next five years. We need to be a bit bolder on that collectively across all the, but also looking holistically across risks and demands we're placing on the gas system, what's happening on the transmission system, and what's

happening with the resource fleet as well. So I think we need to consider that broader range, as well as the fact that the world out there is getting riskier than it was even a few years ago, especially as it affects electricity demand.

Oh. And I should also, I just want to tag on to something that Jason mentioned. The role, as the transmission system has been loaded up more heavily, managing construction outages is now becoming a much more important consideration, even in deciding what transmission alternatives are viable, is the next step because it doesn't matter how good the long term transmission option would play out if we simply can't get the construction outages, we need to build it. And that's actually starting to play a larger and larger role in our consideration of different transmission alternatives. Can we even build that upgrade? Can we reconductor or that line, recognizing that it's going to be out of service for six or eight months? Those are becoming a bigger issue as the system gets pushed harder and harder. Thanks.

MR. NOH: And Commissioner Gunda, I'll be brief. I think, in your question about the flowchart of risks, like Neil said, there's a lot that we can do now. There's going to be, you know, a lot of resource build out that needs to occur over the next five years or more. If we can incentivize storage build out in that area to reduce reliance

on Aliso, that'll go a long way.

I think, to your question of long term, you know, completely retiring Aliso, you know, better understanding what those needs are and what the value that it provides, you know, to the degree that we need long duration storage or seasonal storage, electrical storage. You know, we could -- we can better understand that. And I think soon, once we see some procurement results, we'll realize that long duration storage is viable. Not all long duration storage is pre-commercial or in the R&D phase. We know a lot of technologies that are available today and are yet in the queue.

COMMISSIONER GUNDA: Thanks all. Thank you so much for your thoughts. That's really helpful.

I think, for me, I think, you know, as I think through it, you know we have these choices of 0-1. Right. And then, you know, right in the middle is how long -- how long is the journey? And I think you know, if we put the how long is the journey aside, having some high level thinking on here are some things we need to hit to really feel comfortable with the risk is kind of really helpful. So this conversation is really, really helpful for me. So thank you.

COMMISISONER GUZMAN ACEVES: Thank you, Commissioner Gunda. Commissioner Rechtschaffen.

COMMISSIONER RECHTSCHAFFEN: Thank you. I'm going

to have to sign off. I just want to thank everybody. I got to get started on the next birthday presents. Since the birthday present for Neil was 11,500 megawatts, I don't know what the next -- how we top that for president, for Commissioner McAllister's presents. You know, I guess it will be a bigger megawatt order. But I do want to thank everybody for their great participation.

I do want to also note how wonderful it is, how blessed we are that we have the grid operator in California with Neil, and Elliott, and others providing the kind of leadership that they are exhorting the rest of us to be bolder and not worry about least regrets, to embrace the challenge of climate change. I -- that's such welcome music to our ears. Neil is exactly right. And I just want to say how appreciative we are that we have such a fantastic partner in the California ISO as well as the Energy Commission.

One thing that -- I'm the lead, the lead Commissioner on the IRP. You heard Nathan Barcic allude to this briefly in his presentation. But one clear message for us going forward is we need to think very carefully and intentionally about the extent to which we direct procurement in the LA Basin, in the Aliso area to deal with what the options of shutting down Aliso, or phasing it out and so forth, so that we're in the best position to have the most robust set of options. And we're not -- we don't tie our

hands in one Proceeding for what we're doing in another Proceeding. That's a really important lesson from today. As Neil said in his slides, we didn't -- we haven't done this in the last two procurement orders in IRP, but it was raised by the parties in this most recent mid-term reliability procurement. We did it in the long term for long term Planning -- Procurement Planning Process. And it's something that's very much on the table now that we're going to give a great deal of thought going forward.

So with that, I want to thank everybody. I'm going to sign off for now. And I appreciate everyone's tremendous work in these two days of workshops.

COMMISSIONER GUZMAN ACEVES: Thank you. Elliot. Go ahead.

PRESIDENT MAINZER: Yeah. Thank you, Commissioner Rechtschaffen, to all of you. First of all, I really appreciate that last comment and right back at you all. You know, at the ISO we couldn't, you know, just couldn't be more honored to have such great partners. And this is such a pivotal time for the state. I wanted just to apologize for just a little bit MIA this afternoon. We've been dealing with some pretty heavy chop on the grid today. We just -- we've lost the big transmission line coming into California because of fires in Oregon. And so everybody gets to go home tonight, turn the thermostat up to seventy eight,

and shift their appliance usage out of the net peak and keep the lights off and try to stay comfortable. It's going to be a -- it's going to be a tight evening a I think it's just a -- just a really, you know with the climate signal changing and kind of heat that's breaking up, potentially record temperatures in Vegas this weekend. It's just another reminder to all of us of the, just the incredible urgency and absolute importance of the work that all of you are doing from the staff level right up to Commissioners.

So we are, you know, here to just absolutely support the state all the way in meeting these goals and also just trying to be super honest and intellectually objective about what we need to do to get that reserve margin back in the system, have a little bit more buffer so that we can, you know, meet this transition that's so important as reliably as possible. So I want to commend all of you. It was a great, great couple of days of discussion, very enriching. And I'm going to go back and watch a replay in a couple of seconds of this that I missed. And I wanted to thank you all for the leadership. Yeah.

COMMISISONER GUZMAN ACEVES: Thank you, Elliot. I do want to maybe pause if any other Commissioners needed to go or any other. We do have a little bit of a, I see one question in the chat so I did want to give an opportunity for the public to weigh in here. So Heather, do I turn to you

for that? I see.

MS. RAITT: Sure. Yeah. Thank you, Commissioner. Jennifer Compagna, why don't you go ahead and if you could read that.

MS. CAMPAGNA: Yes. Absolutely. From Mike Florio. If the goal is to reduce the need for Aliso Canyon, wouldn't preventing new gas demand by eliminating line extension allowances for new gas customers, be a great place to start?

COMMISSIONER GUZMAN ACEVES: And I see that Commissioner Rechtschaffen also provided a response. Would you like to read that also?

MS. CAMPAGNA: Yes. I'm sorry.

This is an issue that has been teed up in this CPUC's Building Decarbonization Proceeding.

COMMISSIONER GUZMAN ACEVES: Thank you.

MS. CAMPAGNA: Mm-hmm.

COMMISSIONER MCALLISTER: I'll go. And also, this is Commissioner McAllister. In our Building Decarbonization work on our AB3232 and also, to some extent, in the IEPR this year on other tracks than the Reliability Track, particularly the Natural Gas Track, the Building Decarbonization Track. That issue is also going to get some discussion. I think it's pretty much, you know, on the radar for sure. So I appreciate Mike Florio bringing that up.

COMMISSIONER GUZMAN ACEVES: Excellent point from

former Commissioner Florio. Let's not make the problem worse. Okay. And then, Heather, can you remind me, do we have anyone else in the queue?

MS. RAITT: It doesn't look like it.

COMMISSIONER GUZMAN ACEVES: I see some hands raised.

MS. RAITT: Yeah, I think that would be for public comment.

COMMISSIONER GUZMAN ACEVES: Okay.

MS. RAITT: So we can -- and it's just about time that it's few more minutes until we need to go to public comment if you'd like.

COMMISSIONER GUZMAN ACEVES: I see. Thank you for clarifying. Well, I think I also want to thank you and I certainly will give you guys each an opportunity for any final thoughts. But I think that you've certainly provided all of us in our respective lanes here as we deal with this issue overall, and in this particular Basin, to really have a set of actions that we can work on together via what Jason and Neil were talking about, local and regional transmission and getting going on that. As well as additional local resources that we're all looking for, more storage, more front of the meter, behind the meter, next to the substation, next to the generator. All of those are excellent. And as Mr. Florio just said, reducing that demand and certainly not

increasing it. So why don't we, if you have any final thoughts, I think that would be good, and included in the panelists and any of the Commissioners. Okay. Not seen any. I don't know.

COMMISSIONER GUNDA: So Commissioner, I would -- I would propose that we go to public comment and then kind of have any closing remarks that we might have from the dais.

COMMISSIONER GUZMAN ACEVES: Excellent. Thank you. Okay, Heather.

MS. RAITT: Okay. Thank you. So we do have RoseMary Avalos from the Public Advisor's Office to go through the public comment. Go ahead, RoseMary.

MS. AVALOS: Thank you, Heather. So commenters, please allow one person per organization to make a comment and comments will be limited to three minutes per speaker. I will first call on folks using the raised hand feature on Zoom. Let’s see here. Let’s go to Marlon Santa Cruz. Your line is open. Please state your and spell your name and let us know your affiliation for the record, and do not use the speakerphone feature when talking because we may not be able to hear you clearly. Go ahead, Marlon. Your line is open. You may have to unmute on your own as well.

MR. SANTA CRUZ: Excellent, could you hear me now?

MS. AVALOS: Yes.

MR. SANTA CRUZ: right on. My name is Marlon Santa

Cruz. Marlon like the actor, not the fish. Santa Cruz like the city. And I am the natural gas supply manager for the Los Angeles Department of Water and Power. So of course, I'd like to first thank you for hearing me out and very much appreciate all the presentations that were given today.

Briefly, to echo comments made by both Jason and by Neil, before making my comment. And that LADWP is working aggressively toward meeting its goals of environmental stewardship and reducing its reliance on natural gas. However, in the coming years, as we do so, the storm is only going to get worse before it gets better. Namely, the continued integration of renewable energy is going to exacerbate the problem of the evening ramp, whereas solar energy goes away, people come home to hot buildings and they have to turn on the air conditioners, and we have that infamous duck curve. That hourly ramp is something that is of concern to me as an engineer.

So a recent conversation that we have actually begun having amongst the joint agencies is that perhaps instead of looking at daily totals, with regards to send out from SoCalGas, we should be focusing on the hourly ramps that occur in that 4-hour window as the sun is going down. Now, we understand that winter burns far exceed those of summer. But as we have seen in the presentations, the electrification of both the transportation sector and of buildings could be a

sleeping giant that we may need to address.

So my suggestion is just that the hydraulic models also look at that, with the potential for the increased reliance on natural gas-fired generation in the LA Basin to meet the demand in the future years, especially for the time horizons of 2027 and 2035, after which SoCalGas may no longer have its largest storage asset to be able to balance the system. That is my comment.

MS. AVALOS: Thank you. I'd like to give a reminder to the folks on the phone to *9 to raise your hand and *6 to mute and unmute your line.

Now we'll move on to the next raised hand. Patty Glueck, you may speak. You may need to open your line as well. Go ahead. Open your line.

MS. GLUECK: Okay, thank you. I'm Patty Glueck, G-L-U-E-C-K, a member of the Aliso Canyon Health Study Community Advisory Group. One important aspect that rarely gets mentioned in these workshops these last four years are the health and safety issues that Aliso Canyon presents to more than 1.5 million residents. Only one reference today in the LA100 Plan presentation, which I appreciate. Here's what to consider. Poly toxic material, including carcinogens, get released by these wells all the time. Diagnosis of cancer keep increasing ever since the 2015 blow-out began. The Santa Susana fault line runs every well at Aliso. If this

fault erupts, or other faults nearby, many wells can be damaged at once, according to a geologist at Cal State Northridge. Almost -- and also, we almost found out what would happen if a fire hits those wells when LaSalle Ridge fire reached Aliso in 2019. These events could mean the loss of 1,000 lives.

I would also add that FTI, whose being used as a consultant by the CPUC, is known for having a pro fossil fuel bias that should be considered. I ask that you concentrate on alternative energy sources that won't pollute.

By the way, this should not include the use of, quote, renewable natural gas, unquote, as that is still a polluting and explosive material that should not be stored at Aliso or anywhere else. So please shut down Aliso as soon as possible, not in 2035, but really soon as there's many lives at risk each day this dangerous facility is open. Our health should be more important than simple wealth. Well thank you.

MS. AVALOS: Thank you. And a reminder to those making comments, please state and spell your name and if there is an affiliation you have, and we need that for the record. So I'll call on the next person. Helen Attai, your line is open. You may need to unmute on your end, Helen.

MS. ATTAI: Oh. Can you hear me now?

MS. AVALOS: Yes.

MS. ATTAI: Yeah. My name is Helen Attai,

A-T-T-A-I. I am a 30-years residents of Granada Hills, also co-founder of Aliso Mom Alliance. It's been six years, going into seven years, of very difficult years for us. And I know you have heard from the residents during all this time, and I don't know if you have listened or not, but I know you've heard because we have been vocal.

And I know we have heard from you guys, from all the agencies, including PUC, HND, two governors, Supervisor Barker [ph.], the Health Department, basically all who can help and will not help. They have not helped. And we have had this Blade Report, which has been a long while, which has proven, and it shows that why Aliso is not needed. And on the shortage of gas that somebody brought up, I hate to say it, it's BS. Since two years Aliso Canyon was not being used after the blow-out and we were fine. I remember we had cold winters and hot summers. Nobody died. Nothing happened. We did fine. We survived. And so this was, it was proven for that two years that it's not needed.

It just there is -- we all know about the poly toxins material included, and the carcinogens that are getting released from here. One thing that we know that maybe you guys don't know is that the number of cancers cases and scary diseases that are going up in this community, which is just unbelievable. There were kids, you know, diagnosed with leukemia and going through treatments. And we also know

about the earthquakes and fire dangers, which is very real for our area in this year.

And the gentleman who mentioned the benefits and economic benefits to customers from the Aliso Canyon, I should add, it's really the greed and what SoCalGas and Sempra Energy is making from this facility, is not the -- it's not about customers. And at what cost? What cost? I mean life of all the residents are in danger and you are talking human dollars. I mean, come on.

If you notice we had before, previous times, we had a lot of residents to give public comments, but right now, some of those residents, sadly they're dead or they're in hospitals getting chemo, or going through radiation, and surgeries, and all the treatments that they're getting. And that's very disappointing. It's very disappointing, you know, these other agencies who are supposed to be taking care of the health of the residents and be concerned, but we don't see any concerns at all coming, you know, for any of us residents. And it's just -- it's just come on. It's been -- it's been seven years almost. I mean it's been six years is over, we are getting for seven years and what country are we living in?

Please shut this place down, you know, and just do the right thing. Thank you.

MS. AVALOS: Thank you, Helen. Now we'll move on

to our commenter. Jane Fowler, your line is open. Jane.

MS. FOWLER: Hi. My name is Jane Fowler, J-A-N-E F-O-W-L-E-R and I live in Granada Hills. Oh, I hear the frustrations of, you know, fellow residents that live here. I have been coming to your workshops for many years now and I do have to say I am very excited, and I feel that we're getting closer to shutting Aliso down. I really admire and respect all the time you're putting into this. I would love if we could, you know, get Aliso shut down as fast as possible. I just want to tell you that SoCalGas, you know, they don't let the community know when they're venting or when they're doing their acid washing, and in addition to their testimony of two leaks per day at the facility, all the poly toxins and the carcinogens are used to get intermittent heart palpitations from Aliso. Now I have full on heart problems. I have a failing liver. My husband has unknown blood disorders. And I tell you this just to remind you that our health is impacted. You know, all the creatures, my dog died. So all creatures and our planet is impacted, you know. Thus global warming. You know, I don't know a lot, but I do know that the 19 mitigation measures that were used when Aliso was not allowed to be used worked for almost two years.

Just other little points that me as a resident want to make, that the demand is going down and growing renewables are, you know, just becoming more and more, becoming better.

Also, I just want to point out that the property that SoCalGas is on is like primo property for solar and wind. Governor Newsom, the County Board of Supervisors, the LA City Council, all unanimously voted for Aliso to be shut down. And like Michael Colvin said, a decision must be made and quote, make the decision. So I hope you all will make a decision soon. Thank you so much for your great work and getting us to a cleaner planet.

Also, one just last quick thing is to make sure the gas company cleans up before they leave. Okay. Thank you so much.

MS. AVALOS: Thank you. And A reminder to those on the phone to *9 to raise your hand. I'll give a few seconds to see if we have any raised hand on the phone.

Okay. Seeing that there are no raised hands, that completes public comment. I turn now to Commissioner Gunda.

COMMISSIONER GUNDA: Thank you, RoseMary. Thank you to the commenters for taking the time to provide the public comment. Again, I think it's been an incredibly thoughtful two days of information. You know, I just want to really thank all the panelists and collaborators from both CPUC, the staff, the Commissioners, Elliot from CAISO for all kind of taking the time to make this as open and useful conversation as possible.

I just want to make sure I take this opportunity to

say that the CEC has an important role in ensuring that we can be in a robust public process. And that's what the CEC is for, to convene a public process, to think through this, and then develop the necessary options for us all to make decisions on. And then again, it needs to be underpinned by, you know, data and analysis that's comprehensive and that has integrity, that is there is trust and the information that we're providing to each other. So I just I just want to thank everybody for taking the time to provide those analysis.

And I think the takeaway message from me is climate crisis is here to stay. We are we are over that point where a lot of things that are happening that we need to consider in a more accelerated fashion. You know, some of the things that we -- that we thought would happen in 2050 are happening in 2020. So this is real. We need to think through, you know, how do we ensure reliability, safety in this particular circumstance? I think more importantly, what it is really showing is the interconnectedness of all the Energy Planning and systems. And we cannot do this in a silo, not in a sector, or not in an agency. And I'm glad that we are doing this comprehensively together and we are taking the time to give it the due process to develop the options.

So I know there's one other commenter, Norman Petersen. I don't know if we want to -- I'll defer to you.

So Heather, if we want to give Mr. Peterson a chance to make the public comment --

MS. RAITT: Okay.

COMMISSIONER GUNDA: -- before we pass it on to Commissioner McAllister.

MS. RAITT: If you'd like to you. We normally --

COMMISSIONER GUNDA: Yeah.

MS. RAITT: -- once we take public comment, it's normally just done, but I guess I could --

COMMISSIONER GUNDA: Forgive me for that mistake, but I'll -- let's just use it.

MS. RAITT: Okay. So go ahead. Can you open his line or no? RoseMary?

MS. AVALOS: This is RoseMary from the Public Adviser's Office. You may need to unmute on your end. Check your line to check if you can unmute. Norman, you have an opportunity to -- there you go. Go ahead and unmute on your end.

MR. PETERSON: I believe I am unmuted. Can you hear me?

MS. AVALOS: Yes.

MR. PETERSON: Okay. Norman Peterson, Southern California Generation Coalition. I just wanted to make a quick comment to tie together a point that came up this morning with the point that Jason, and Neil Millar were

making at the very end of their comments this afternoon. And that was about, well I think Neil, called construction outages. Outages during the course of a construction project, or delays in a transmission construction project that occur because you just simply can't take the transmission line, the electric transmission line out of service because you need it to maintain service during the winter time when otherwise the electric utility would be doing its work on its transmission lines.

This morning, I asked the representative from SoCalGas about what kind of transmission capacity -- capacities they would they were looking for after October 1 this year. Well, Line 4,000 is back. What would Line, the capacity of line 4,000 be? What would the capacity through Line 352 be? What would be the capacity on their Northern System if we got back up to normal on the Northern System? Well, that would be a big help. LADWP, to just give you an example, and this is a matter of public knowledge, it's something that's come up in the course of the LADWP Stakeholder events that they've held about transmission, electric transmission. They have a line, Valley-Rinaldi, that has been delayed repeatedly the last several lines -- several years. If we're going to eliminate, something that Commissioner Guzman Aceves mentioned at the very top this afternoon, if we're going to drive down or even eliminate

minimal local generation requirements, we're going to have to have minimum local transmission upgrades. But the Valley-Rinaldi line has been delayed winter after winter because we've had inadequate transmission capacity, gas transmission capacity in the SoCalGas system. Yet SoCalGas is being very non-transparent about the amount of transmission capacity that we will actually have available to us after they complete what they say are the projects they have underway on Line 4,000 and others.

It would be helpful if the CPUC would put a little bit of pressure on SoCalGas to be more transmission about -- to be more transparent about the amount of transmission that they'll be able to make available to us during the winter so that we can proceed with the electric transmission projects that we need to complete. And thank you very much for the opportunity.

MS. AVALOS: Thank you for your comments and that completes the public comment period.

COMMISSIONER GUNDA: Thank you, Rosemary. I promise I will not throw a wrench in the process. So with that, maybe Commissioner McAllister and since this has been a natural gas kind of day, can have maybe Commissioner Guzman Aceves close it at the end.

COMMISSIONER MCALLISTER: Great. Thank you, Commissioner Gunda, and thank you for your leadership on

this, together with, well really for both days and this afternoon, together with Commissioner Guzman Aceves. I really appreciate you both and just bringing us all together to creating the environment that's also collaborative and open and frank. And I think, as Elliot said, you know, sort of honest and fact based and really just, you know, really transparently so.

So I don't have a lot of substance to add, in terms of the discussion. I think it's really touched, you know, the main issues that we face. But just wanted to reiterate, because I think it can't be overstated, how clear it is that climate change is here. And it's so in our faces I think, you know, with the fires and the incredible heat waves and the long term drought, that's just deeply drying out the whole west, and certainly California, North and South, we just -- we don't have the regional diversity in real time that we once could count on to sort of help us iron out those issues as they come up in one place or another. It really, west-wide we're going to be seeing these trends.

And California, historically, we've thought about emergencies like earthquakes as being, you know, one of the things we really need to be prepared for and that has not gone away. We even had one yesterday. And I think that really raised that flag, you know, again. And so there are so many challenges, both, you know that we historically

understood and had to deal with and now new multitude of challenges due to climate change that our energy systems have to adapt to. And it's going to take investment. It's going to take coordination. And I think, you know, all of us in one way or another, understand the urgency.

I think Neil, you know, last, the last to sort of state it directly was Neil, with you know, we need to get on with these investments and really determine how we can work together on doing something a little bit different than we had in the past. And so I think, you know, we're as a state, we accept that. And it just highlights the need for more of these forums to keep digging in and really following up repeatedly and diligently and incessantly to figure out what we're actually going to do, and you know, what actions we're going to take in real time and quickly.

So and along those lines, just I would be remiss if I didn't say, hey, join us Monday, Tuesday for the Building Decarbonization Workshops. That is another really key element of this transition and this decarbonization journey that we're on as state. And also something that is urgent and needs to happen fast and find -- we need to find resources for that as well.

And so with that, I think I will pass it back to you, Commissioner Gunda, or Commissioner Guzman Aceves, I'll give the mic to you to wrap us up.

COMMISSIONER GUZMAN ACEVES: Thank you, Commissioner McAllister, Commissioner Gunda, President Mainzer, everyone really who's still on here I see. Really the call that you are talking about and the level of coordination that we do so well at a planning level on the state side, on the system side, just looking at procurement needs and, you know, demand needs, everything that we do so well together we're needing a take it down to these local areas and nothing more demanding on us in the LA Basin.

And so I think this, you know, whenever we want to call it, the decommissioning demands moving into the future, it -- this is starting now. And just as our last public commenter said, the level of coordination that's needed is going to be requiring our involvement at these local levels that we really haven't done before. Not that we haven't done it before, but it's been pretty piecemeal. So we know we've certainly done different parts of this and needing to do it in such a more proactive and intentional manner. So I look forward to debriefing with all of you on how best to do this.

And certainly, just want to acknowledge that like many of our system needs are often communities that bear the brunt of the reliability for the whole state. And I just want to acknowledge that and that it's a constant concern of ours as well. So thank you. And I look forward to the next steps.

COMMISSIONER GUZMAN ACEVES: Okay. I guess I'm just pass it onto Heather to kind of close it up, but I mean, I just forgot to mention so I think I'll take this opportunity to say thanks to Melissa Jones, Jean Spencer, for helping coordinate this meeting and also Commissioner Martha Guzman Aceves adviser, Maria. Without the three of them, really helped shape this -- shape this day and the secret weapon of Simon Baker in the background. So thanks, everybody, for pulling this together. Heather.

MS. RAITT: All right. And I would just echo the thanks and wish everyone a great weekend and hope to see you on Monday for our Building Decarb Workshop.

(Whereupon the Joint Agency Workshop Adjourned at 4:40 p.m.)

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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 October, 2021.

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.

October 8, 2021

MARTHA L. NELSON, CERT**367