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IEPR Commissioner Workshop on
Energy Demand Forecast Inputs and Assumptions
(Docket No. 26-IEPR-03)

Thursday, August 20, 2026
1:00 p.m. – 5:00 p.m.

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00:00:00.910 --> 00:00:03.790

Kenny Sanders: Starting recording, we are now live.

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00:00:05.640 --> 00:00:11.220

Sandra Nakagawa: Alright, good afternoon, everyone. We're gonna give it just a minute while folks file into the virtual room.

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00:00:16.370 --> 00:00:30.470

Sandra Nakagawa: Alrighty, thank you so much for joining today's Integrated Energy Policy Report, or IPR for short, Commissioner Workshop on the California Energy Demand Forecast Inputs and Assumptions. I'm Sandra Nakagawa, Director of the IPR at the CEC.

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00:00:30.780 --> 00:00:37.740

Sandra Nakagawa: Today's workshop is part of the CEC's 2026 IPR update proceeding, and it's being held remotely on Zoom.

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00:00:37.950 --> 00:00:45.650

Sandra Nakagawa: It is being recorded, and both a recording and a Zoom transcript will be posted on the CEC website shortly after the workshop.

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00:00:46.030 --> 00:00:52.299

Sandra Nakagawa: You can find the schedule and slides of today's presentations now on the IEPR Workshop webpage.

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00:00:52.610 --> 00:01:03.959

Sandra Nakagawa: Throughout the afternoon, you will have opportunities to ask questions of the presenters. Please note, we may not be able to address every question, but you can submit yours through Zoom's Q&A feature.

8

00:01:04.190 --> 00:01:12.700

Sandra Nakagawa: You can also look at the questions that have already been submitted and upvote any questions that others have submitted by clicking on the thumbs up icon.

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00:01:12.880 --> 00:01:18.219

Sandra Nakagawa: Votes, questions with the most thumbs ups will be brought to the top of the list.

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00:01:18.430 --> 00:01:22.029

Sandra Nakagawa: At the end of the day, we will have a period of public comment.

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00:01:22.260 --> 00:01:28.360

Sandra Nakagawa: During that time, you can use Zoom's raise hand feature to let us know that you would like to make public comment.

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00:01:28.530 --> 00:01:34.339

Sandra Nakagawa: Comments are limited to 3 minutes per person, with 1 person per organization allowed to comment.

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00:01:34.490 --> 00:01:41.159

Sandra Nakagawa: Although we won't be responding to comments during the public comment period, all remarks will become part of the public record.

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00:01:41.730 --> 00:01:52.749

Sandra Nakagawa: We also welcome written comments. Those are due, for this workshop on Tuesday, September 15th, by end of day. You can find instructions on how to submit those on the Workshop notice.

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00:01:53.100 --> 00:01:58.460

Sandra Nakagawa: Alright, with that, I'm pleased to turn it over to Vice Chair Siva Gunda for opening remarks from the dais.

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00:02:01.000 --> 00:02:18.740

Vice Chair Siva Gunda: Thank you, Sandra, for kicking us off. Welcome, everybody, good afternoon, to today's workshop on the IEPR Forecast Inputs and Assumptions. Joined by Commissioner McAllister, as well, on the dais, and looking forward to his participation and insight and guidance.

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00:02:18.740 --> 00:02:37.219

Vice Chair Siva Gunda: Big thank you to the IEPR team, as always, for organizing today's workshop, and the EAD staff, the Energy Assessments Division staff, who are so integral to the overall forecasting and planning work at the CC. Thanks to each and every staff for their dedication in this planning process.

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00:02:37.360 --> 00:02:55.420

Vice Chair Siva Gunda: As many of you know, IPR Forecast is one of the most important statutes of the CEC, but it's really foundational to California's energy planning. We broadly think about the work we do at CEC in the context of

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00:02:55.570 --> 00:03:11.440

Vice Chair Siva Gunda: planning work that we do, policy insights, ideation, analysis, development, and the different programs we do, whether it's, you know, developing building codes and standards, to, permitting programs, to compliance programs. So we...

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00:03:11.440 --> 00:03:29.180

Vice Chair Siva Gunda: do those three pieces, but the planning work that we do through the forecast is a very, very important part of the overarching foundation of the work we do here for the state. I think it's important to note, as we have gone through the last three, four years, the...

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00:03:29.210 --> 00:03:47.760

Vice Chair Siva Gunda: We are constantly finding ourselves in a growing uncertainty. You know, depending on the year, we get different issues that we need to tackle. But, you know, some of the common themes continue to be around climate change and how best to capture climate change impacts to the forecasting.

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00:03:47.760 --> 00:03:51.710

Vice Chair Siva Gunda: More recently, the shift in the federal, policies.

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00:03:51.710 --> 00:04:01.459

Vice Chair Siva Gunda: And what that means for the electrification pathway, but also clean molecules, availability in California, and how that changes the overall forecasting.

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00:04:01.460 --> 00:04:26.009

Vice Chair Siva Gunda: Data center load has been a very important discussion between the agencies, but also at the administration level and the legislature. Really important to get the data center load growth right, and also the rapid technological landscape, the changes that we're seeing, including AI. We've also kind of touched on some other issues, such as known loads, you know, something that

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00:04:26.030 --> 00:04:30.000

Vice Chair Siva Gunda: Staff tried to, in a really,

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00:04:30.020 --> 00:04:37.570

Vice Chair Siva Gunda: Kind of be educated and try to figure out how best to, solve some of those issues that have been raised.

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00:04:37.570 --> 00:04:53.850

Vice Chair Siva Gunda: Over the last couple of years, looking forward to hearing the discussion on that. So, given the uncertainty, it's really important for us to be agile, flexible, ear to the ground, and really build our partnerships to talk and make sure these things are done in a very collaborative,

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00:04:53.970 --> 00:05:06.390

Vice Chair Siva Gunda: basis, so with that, you know, big gratitude to CPUC colleagues, CAISO colleagues, utilities, and many other stakeholders who continue to provide insight and continue to make the forecast better for the state.

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00:05:06.390 --> 00:05:14.390

Vice Chair Siva Gunda: With all that, I'm really looking forward to the workshop today, and Commissioner McAllister, I want to welcome you if you wanted to add any comments.

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00:05:15.210 --> 00:05:20.840

Commissioner Andrew McAllister: Yeah, thanks, Vice Chair, and thanks, Sandra and the whole IEPR team. This is, always,

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00:05:21.130 --> 00:05:40.240

Commissioner Andrew McAllister: really important foundational work that you coordinate and make sure that, we have the platform to really get the, kind of dialogue that, the sort of information gathering and dialogue that Vice Chair Gunda just described. So, not a ton to add. I would just say,

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00:05:40.340 --> 00:05:47.020

Commissioner Andrew McAllister: You know, this really is the input and assumptions, you know, this work is really setting the table, you know, building the foundation.

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00:05:47.170 --> 00:05:48.280

Commissioner Andrew McAllister: for...

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00:05:48.610 --> 00:06:00.939

Commissioner Andrew McAllister: all the rest of the conversations that we have that impact the forecast and planning, really, across the state, not only at the Energy Commission, but also across the agencies, you know, certainly the PUC and the CalISO and

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00:06:01.050 --> 00:06:09.879

Commissioner Andrew McAllister: you know, increasingly, lots of interest even in other agencies, and so, coordinated with our climate goals and carbon reduction.

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00:06:10.080 --> 00:06:22.449

Commissioner Andrew McAllister: challenges, with the Air Resources Board, for example. So, really important work, and, you know, wrestling with the big issues of the day, and this is, you know, this is necessarily prospective work.

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00:06:22.660 --> 00:06:41.110

Commissioner Andrew McAllister: That requires the best minds that we have, and the best data that we have, information that we have, not only in California, but, you know, wherever we can gather it. And so, really appreciate, that, just exploratory intellectualism that informs all of this work. And, thanks, thanks to you, Vice Chair, for your leadership as well.

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00:06:41.110 --> 00:06:49.810

Commissioner Andrew McAllister: Over the years, this effort has just become... it's matured, it's always changing, there are always new challenges, but I think, the...

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00:06:49.930 --> 00:06:56.759

Commissioner Andrew McAllister: Toolbox that we have is really the best we've ever had, and it always can improve and always can evolve.

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00:06:56.900 --> 00:07:13.990

Commissioner Andrew McAllister: And we're committed to investing in that. A lot of that is relationships, engaging with the people who have the experts, institutions that have the

kind of perspective that we need to incorporate in the forecast as these challenges appear on the horizon. And certainly, wildfire, climate change.

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00:07:14.070 --> 00:07:31.999

Commissioner Andrew McAllister: the known loads and the data center conversation that we'll have today, I'm really, been looking forward to that, getting an update. Seems like that has evolved a bit, in the California context since we last visited it. So, these partnerships are critical, and I just, again, kudos to staff, both in division and the IEPR team.

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00:07:32.120 --> 00:07:49.570

Commissioner Andrew McAllister: For, having the curiosity and the sort of fierce... fierceness to... to keep engaged and really, make sure that we're paying attention to the right things and digging in as deeply as we need to. So, looking forward to the workshop, and thanks for all the presenters and staff.

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00:07:49.720 --> 00:07:51.479

Commissioner Andrew McAllister: That have, developed it.

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00:07:52.880 --> 00:08:07.080

Vice Chair Siva Gunda: Yeah, thank you so much, Commissioner McAllister. Also, I want to recognize your leadership on all this, and, you know, the, you know, all the points that you've elevated. So with that, I'll pass it to, Sandra. You know, we can keep moving. Thank you.

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00:08:07.610 --> 00:08:19.040

Sandra Nakagawa: All right, we are now gonna transition to Heidi Javenbach. Heidi is a program manager with our demand analysis branch, and she's gonna set the stage with introduction and overview for today's workshop.

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00:08:21.730 --> 00:08:40.490

Heidi Javanbahkt: Thanks, Sandra, and good afternoon, everyone. Thanks for attending today. So I'm going to start us off with a recap of where the 2025 forecast landed, and go over our goals for the 2026 forecast, and the timeline for our public workshops over the next few months.

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00:08:40.549 --> 00:08:42.100

Heidi Javanbahkt: Next slide, please.

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00:08:44.660 --> 00:09:00.620

Heidi Javanbahkt: So this slide, is an overview of the scenario combinations for the 2025 IPR that went into the planning forecast and the local reliability scenario, along with the resulting annual peak load in the chart on the right.

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00:09:00.800 --> 00:09:11.990

Heidi Javanbahkt: So the planning forecast consisted of baseline economic and demographic data, the mid-case for behind-the-meter PV and storage, mid-case for data centers.

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00:09:12.000 --> 00:09:23.259

Heidi Javanbahkt: Scenario 3 for additional achievable energy efficiency. Scenario 2 for both the additional achievable fuel substitution and transportation electrification.

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00:09:23.790 --> 00:09:31.570

Heidi Javanbahkt: The energization requests, which you'll hear us refer to as known loads, those were excluded from the planning forecast.

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00:09:32.790 --> 00:09:42.839

Heidi Javanbahkt: For the local reliability scenario, we adopted two different versions, one with and one without the known loads, and I'll talk about the use cases for those on the next slide.

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00:09:42.960 --> 00:09:56.790

Heidi Javanbahkt: The local reliability scenario is, by design, higher than the planning forecast, because it's used for local planning, and using higher load here helps mitigate some of the uncertainty around where the load will show up.

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00:09:57.820 --> 00:10:09.360

Heidi Javanbahkt: So we included known loads in one of these versions, to help with aligning, distribution, and transmission planning, which was our main objective last year in considering the known load data.

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00:10:10.430 --> 00:10:11.810

Heidi Javanbahkt: Next slide.

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00:10:14.070 --> 00:10:30.509

Heidi Javanbahkt: And we had a lot of discussion at the end of the 2025 IPR Forecast cycle around the known load impacts. There were a lot of unanswered questions about the known loads, around their impacts, whether we were potentially double counting some of those impacts.

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00:10:30.510 --> 00:10:39.790

Heidi Javanbahkt: With some of our load modifiers, like the electrification load modifiers, as well as the timing of when those projects would be energized.

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00:10:39.840 --> 00:10:59.359

Heidi Javanbahkt: So, this will be part of the focus of the No Unload discussion later today, and just wanted to say thank you to the IOUs for all the discussions we've had over the past few months, and for participating in our workshop today, to discuss this topic and answer questions about the known loads data.

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00:11:00.810 --> 00:11:14.730

Heidi Javanbahkt: Last year, because of all the uncertainty with the new and load impacts, the joint agencies and CAISO decided on what's outlined here to balance uncertainty while being cautious about reliability and considering affordability.

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00:11:15.800 --> 00:11:22.839

Heidi Javanbahkt: So, System RA and FlexRA used the 2025 IEPR planning forecast without known loads.

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00:11:23.220 --> 00:11:37.170

Heidi Javanbahkt: Because of the potential reliability risks that could come with more projects being energized than we planned for in the planning forecast, CEC is monitoring the known load completion rates this year leading up to 2027.

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00:11:37.800 --> 00:11:43.950

Heidi Javanbahkt: And we have some takeaways, some early takeaways from those data that we'll present later today.

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00:11:44.130 --> 00:11:49.289

Heidi Javanbahkt: And then additionally, the CEC Summer Reliability Assessment included

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00:11:49.390 --> 00:11:51.980

Heidi Javanbahkt: Scenarios with and without the known loads.

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00:11:53.800 --> 00:12:00.560

Heidi Javanbahkt: The next two columns are studies that are done by CAISO that typically use the local reliability scenario for both.

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00:12:00.800 --> 00:12:09.859

Heidi Javanbahkt: And the same scenario for both. So CAISO ran their models this time around with and without the known loads, but this was an exception.

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00:12:10.010 --> 00:12:23.880

Heidi Javanbahkt: The reason for running it with and without the known loads is because the local capacity studies inform local RA, and we wanted to take time to understand the known loads impacts better before considering them in resource obligations.

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00:12:25.590 --> 00:12:40.610

Heidi Javanbahkt: The transmission local studies identify local areas that may need transmission upgrades, so including new unloads here helped with aligning distribution and transmission planning, which, again, was our objective with considering the new unload projects last year.

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00:12:42.060 --> 00:12:48.010

Heidi Javanbahkt: Lastly, IRP and the transition bulk system planning used the planning forecasts

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00:12:48.360 --> 00:12:53.219

Heidi Javanbahkt: These are midterm planning efforts, looking 3-7 years out.

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00:12:53.220 --> 00:13:12.200

Heidi Javanbahkt: And the joint agencies and CAISO decided to continue using the 2024 IPR planning for these because of uncertainty with known loads in data centers, which have the potential to result in higher levels of load than what was projected in the 2025 IPR planning forecast for 2028 through 2032.

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00:13:12.590 --> 00:13:20.639

Heidi Javanbahkt: So sticking with the 2024 IEPR planning Forecast promotes stability in resource and infrastructure planning that was already underway.

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00:13:22.160 --> 00:13:23.640

Heidi Javanbahkt: Next slide, please.

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00:13:25.640 --> 00:13:31.970

Heidi Javanbahkt: So this brings us to 2026, and our goals for the 2026 IPR Forecast.

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00:13:32.170 --> 00:13:42.320

Heidi Javanbahkt: Our first goal is to return to using the same Forecast Vintage and the most recent Forecast Vintage for all planning processes, so using the 2026 hyper Forecast.

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00:13:42.520 --> 00:13:59.829

Heidi Javanbahkt: Relying on two different forecast vintages last year posed some challenges and created some additional work that we would like to avoid going forward. But in order for that to happen, we really need to have a better understanding of the known loads data and trends, and so that's a high priority for this year.

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00:14:01.340 --> 00:14:11.990

Heidi Javanbahkt: Additionally, we are making a handful of model updates this year, and updates to Inputs and Assumptions, which our team will go over in more detail this afternoon and during the workshop on August 31st.

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00:14:12.340 --> 00:14:27.550

Heidi Javanbahkt: For data centers, we are considering new data sources, such as the building permit data, and including some other financial milestones, and we are also continuing discussions with stakeholders on data center forecasting methods and assumptions.

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00:14:28.400 --> 00:14:41.139

Heidi Javanbahkt: We are also continuing stakeholder engagement to align distribution and transmission planning, and no unloads are key to those discussions. Both of those topics are on the agenda for this afternoon.

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00:14:42.450 --> 00:14:43.940

Heidi Javanbahkt: Next slide.

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00:14:47.080 --> 00:15:01.750

Heidi Javanbahkt: So we have two workshops before the end of the month. There's today's workshop and the workshop on August 31st. Both of these are seeking input from all the attendees here today on the proposed Forecast Inputs and assumptions.

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00:15:02.150 --> 00:15:16.789

Heidi Javanbahkt: I mentioned already that today's workshop covers known loads and data centers, and thank you again to our presenters on those topics. The first topic we'll cover today is the economic and demographic projections, which are fundamental to our forecast.

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00:15:18.020 --> 00:15:30.560

Heidi Javanbahkt: And then on August 31st, we'll go over the electricity rate forecast, the inputs and assumptions for behind-the-meter PV and storage, additional achievable fuel substitution, and transportation electrification.

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00:15:31.500 --> 00:15:32.929

Heidi Javanbahkt: Next slide.

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00:15:34.950 --> 00:15:51.880

Heidi Javanbahkt: This is my last slide. I just wanted to show the timeline for the meetings and workshops through the rest of the year, and then there's some links. When you download these slides, you'll have the links that are on this slide to where you can find the dog meetings and IEPR workshops.

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00:15:53.450 --> 00:16:03.410

Heidi Javanbahkt: So we will have a few more dog meetings in September and October that are not scheduled yet. November 12th is the IEPR Workshop on the draft results for load modifiers.

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00:16:03.510 --> 00:16:13.420

Heidi Javanbahkt: December 14th is the IEPR Workshop for the overall draft results. After that, we finalize the forecast, and it goes to the CEC's January business meeting for adoption.

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00:16:14.940 --> 00:16:26.719

Heidi Javanbahkt: So let's get started with today's workshop. I will hand it to Matthew Cooperneck, who is our next presenter, and he will go over the economic and demographic projections.

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00:16:28.340 --> 00:16:31.310

Vice Chair Siva Gunda: Heidi, are you able to take a quick question?

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00:16:31.310 --> 00:16:32.590

Heidi Javanbahkt: Sure, yes.

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00:16:32.590 --> 00:16:47.600

Vice Chair Siva Gunda: Just kind of going back to, kind of a couple slides back, going just to the priorities of this year, you know, really want to kind of understand, could you just remind us kind of the...

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00:16:47.740 --> 00:17:03.639

Vice Chair Siva Gunda: you know, the impetus for the known loads. I'm tracking the economic demographic inputs and, you know, the uncertainty around that, tracking the data centers. Just wanted to remind myself on the known loads. The question of the known loads

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00:17:03.850 --> 00:17:08.150

Vice Chair Siva Gunda: Can you just kind of give a little bit of the inception of the problem statement there?

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00:17:08.819 --> 00:17:26.499

Heidi Javanbahkt: Yeah, so actually, Cristy has some slides on this, for the known load panel, but, just quickly, there were some changes made to the distribution planning process, a couple years ago, and the...

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00:17:26.559 --> 00:17:43.559

Heidi Javanbahkt: the IOUs, what they're planning for, for distribution planning, they're able to exceed our forecast, and that's leading to a lot of questions and, and, misalignments between what's being planned for under distribution planning and what's...

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00:17:43.589 --> 00:17:54.719

Heidi Javanbahkt: planned for under transmission planning. And so that's, why we wanted to start looking at known loads and try to figure out where those gaps are coming from.

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00:17:55.330 --> 00:18:07.409

Vice Chair Siva Gunda: And then, kind of, if I remember this right, you know, the kind of the system kind of disaggregated down to the distribution level, you know, the... the kind of point was.

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00:18:07.510 --> 00:18:22.949

Vice Chair Siva Gunda: are we not capturing some of these incremental loads that are lumpy, that could be at a distribution level, that we really need to think through and harmonize the transmission planning and the distribution planning? Is that correct?

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00:18:24.700 --> 00:18:28.920

Heidi Javanbahkt: Yeah, I mean, there's a lot of factors here. Right.

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00:18:29.800 --> 00:18:45.030

Heidi Javanbahkt: So part of it was that we've been hearing that there's a backlog of projects, like, waiting to be energized, and we wanted to make sure that if there are going to be more projects energized in the next

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00:18:45.210 --> 00:18:48.700

Heidi Javanbahkt: couple years, then have...

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00:18:48.890 --> 00:18:58.270

Heidi Javanbahkt: been historically energized, right? So, showing up in the historical data that we use to inform the forecast, we want to make sure that we're capturing that.

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00:18:59.030 --> 00:19:05.069

Vice Chair Siva Gunda: Yeah, I really appreciate, Heidi, I know the team has done a lot of work to be very responsive.

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00:19:05.160 --> 00:19:23.240

Vice Chair Siva Gunda: To kind of the potential issues, and really looking forward to hearing the status of that conversation, but want to just, commend the CC team for being responsive to whatever, the flags were being raised. So thank you. I'll look forward to the panel, when Cristy walks through that. Thank you so much.

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00:19:26.880 --> 00:19:28.970

Heidi Javanbahkt: Okay, I'll hand it over to Matthew.

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00:19:30.500 --> 00:19:32.959

Mathew Cooper: Good afternoon, I'm Matthew Cooper.

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00:19:33.290 --> 00:19:45.390

Mathew Cooper: Energy System Planning Coordinator. I put together the various pieces of our annual forecast, and I'm going to go over some highlights from our updated demographic and economic projections, that will go into the forecast.

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00:19:45.730 --> 00:19:52.389

Mathew Cooper: I want to give credit to Nancy Tran from our data branch. This is the result of her hard work and expertise.

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00:19:52.600 --> 00:19:54.130

Mathew Cooper: So next slide.

110

00:19:55.700 --> 00:19:57.499

Mathew Cooper: Next slide.

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00:19:57.850 --> 00:20:02.240

Mathew Cooper: Here's a list of abbreviations, acronyms, and initialisms for your reference.

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00:20:02.630 --> 00:20:03.890

Mathew Cooper: Next slide.

113

00:20:05.360 --> 00:20:18.680

Mathew Cooper: Just a quick overview for the electricity forecast. Our data is aggregated to CEC-defined forecast zones, shown in this map. There are 20 zones, plus another category, which is assigned number 0.

114

00:20:18.810 --> 00:20:23.929

Mathew Cooper: And this is the primary granularity at which we do our modeling for electricity demand.

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00:20:24.530 --> 00:20:31.820

Mathew Cooper: Economic and demographic data are primary inputs to our demand models. They're key drivers of electricity consumption.

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00:20:32.020 --> 00:20:44.559

Mathew Cooper: We establish relationships between historical energy demand and historical economic and demographic trends, and then we use the forecasts for those input variables to extend that relationship into the future.

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00:20:45.330 --> 00:20:56.470

Mathew Cooper: The economic and demographic data include both historical and forecast values, and the charts that I'm presenting today show the history and the forecast smoothly connected to each other.

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00:20:57.200 --> 00:21:03.969

Mathew Cooper: For many of the input variables, we have data back to 1970, but most of our models use 1990 or later.

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00:21:04.420 --> 00:21:12.649

Mathew Cooper: We have input data, all... forecast data, all the way out to 2050, but the official IPR Forecast goes to 2045.

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00:21:13.340 --> 00:21:27.249

Mathew Cooper: We track many different economic metrics. Not all of them are used in the forecast. The modelers for different economic sectors, such as commercial or industrial, select the variables that are the best predictors of energy demand for their sector.

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00:21:27.750 --> 00:21:33.959

Mathew Cooper: But even the indicators that are not used directly still provide important context and insight into trends.

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00:21:34.690 --> 00:21:40.880

Mathew Cooper: And just lastly, we have a single mid-case of economic and demographic projections, which go into all of our forecasts.

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00:21:41.560 --> 00:21:42.830

Mathew Cooper: Next slide.

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00:21:44.500 --> 00:21:57.709

Mathew Cooper: We rely on historical data and forecasts, created by other entities, so we use geographic data from the California Department of Finance, DOF, and economic data from Moody's Analytics.

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00:21:58.410 --> 00:22:07.870

Mathew Cooper: DOF does do economic forecasting also. They don't have the large suite of detailed metrics that Moody's has. And on the flip side, Moody's also does

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00:22:07.930 --> 00:22:19.530

Mathew Cooper: demographics, but their forecasting is top-down from national trends, and I think DOF has access to more California-specific records for tracking population, etc.

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00:22:20.960 --> 00:22:27.000

Mathew Cooper: So I'm going to give a general overview of the trends, and then I'll show some charts for most of these bulleted items.

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00:22:27.530 --> 00:22:29.070

Mathew Cooper: So, next slide.

129

00:22:31.040 --> 00:22:48.549

Mathew Cooper: So, forecasting economic and demographic trends during the current federal administration continues to be complex due to elevated economic uncertainty. This stems from rapid shifts in policy, global trade disruptions, regulatory volatility, and oil price shocks.

130

00:22:49.160 --> 00:23:06.569

Mathew Cooper: During the 2025 IPR cycle, we discussed the pending impacts of federal policy changes, but those impacts have not directly showed up yet, other than the general climate of uncertainty. So the main takeaway for this year is that some of those impacts are now becoming realized in the last year of historical data.

131

00:23:06.800 --> 00:23:13.239

Mathew Cooper: And they're driving some revisions to this cycle's forecast assumptions relative to last year's baseline.

132

00:23:13.480 --> 00:23:20.279

Mathew Cooper: In particular, regarding migration, the labor market, and economic output in certain areas.

133

00:23:20.750 --> 00:23:32.669

Mathew Cooper: So for demographics, there was a sharp federal policy pullback in immigration, which outweighed natural population increases, and compounded a long-standing pattern of domestic out-migration.

134

00:23:32.990 --> 00:23:41.100

Mathew Cooper: So the Department of Finance made some changes related to how they estimate international migration, which affects the population and household counts.

135

00:23:42.210 --> 00:24:00.679

Mathew Cooper: For economics, in their economics forecast for California last year, Moody's had captured some of the uncertainty from looming federal policy changes, predicting slower growth in 2025 and 2026, but without a sharp contraction, and that appears to have been correct so far.

136

00:24:01.150 --> 00:24:14.500

Mathew Cooper: So the broader metrics don't show big differences, this cycle compared to last cycle, but there are some signs of increasing weakness, like decreases in employment, specific to certain subsectors of the economy.

137

00:24:15.110 --> 00:24:22.640

Mathew Cooper: And also, energy prices due to the conflict in Iran are now also contributing to the slowdown and pushing inflation.

138

00:24:24.190 --> 00:24:43.339

Mathew Cooper: Just note again, Moody's forecasting methodology is a top-down approach, where the state data is driven by the national forecast, and so nationwide, the

story is that tariff-driven cost pressure, immigration-related labor shortages, and oil price shocks are compounding to slow the national economy.

139

00:24:43.730 --> 00:24:48.389

Mathew Cooper: Recent reports show that job growth was actually softer than previously reported.

140

00:24:48.580 --> 00:24:56.450

Mathew Cooper: The U.S. labor force is lower than it has been in decades, driven primarily by the aging workforce and by out-migration.

141

00:24:56.870 --> 00:25:03.709

Mathew Cooper: Inflation has re-accelerated, which keeps real income gains muted, even where nominal wages hold up.

142

00:25:04.110 --> 00:25:09.319

Mathew Cooper: And you might have seen in the news yesterday that the national debt crossed $40 trillion.

143

00:25:09.590 --> 00:25:17.430

Mathew Cooper: And that makes it more difficult to enact any potential countermeasures against a slowdown, which heightens the risk of recession.

144

00:25:17.860 --> 00:25:20.039

Mathew Cooper: So yeah, some uncertainty still.

145

00:25:20.330 --> 00:25:26.520

Mathew Cooper: Moody's was still optimistic for a rebound from this slowdown in 2027-2028.

146

00:25:26.790 --> 00:25:39.200

Mathew Cooper: One more consideration, though, is that some weakness may be hidden when we look at the statewide numbers, since the majority of spending and income growth is concentrated in the highest income brackets.

147

00:25:39.420 --> 00:25:46.120

Mathew Cooper: Well, inflation has hit middle and lower income brackets harder. They refer to this as a K-shaped economy, where

148

00:25:46.280 --> 00:25:51.040

Mathew Cooper: Higher-income households account for, like, 60% of consumer spending.

149

00:25:51.150 --> 00:26:00.269

Mathew Cooper: Well, spending by everyone else is barely keeping up with inflation, and this is risky for the economy because it's leaning heavily on, like, a smaller group of spenders.

150

00:26:00.720 --> 00:26:07.330

Mathew Cooper: So all that to say, California's economic trajectory largely reflects these natural trends.

151

00:26:07.730 --> 00:26:19.459

Mathew Cooper: One contrasting trend specific to California is the surge in AI-driven investments in the Bay Area, and some, technology hubs are seeing job growth associated with that.

152

00:26:19.770 --> 00:26:22.300

Mathew Cooper: But it's, it's narrowly focused.

153

00:26:22.790 --> 00:26:31.160

Mathew Cooper: So, more broadly, manufacturing, agriculture, and in-state refining all face simultaneous pressure.

154

00:26:31.420 --> 00:26:44.119

Mathew Cooper: So, the overall economic outlook points to slow, employment-like growth concentrated in a handful of sectors, rather than a broad economic expansion.

155

00:26:45.420 --> 00:26:47.120

Mathew Cooper: So next slide.

156

00:26:48.540 --> 00:26:52.450

Mathew Cooper: We can... Next slide, we can look at some... charts here.

157

00:26:52.670 --> 00:26:57.240

Mathew Cooper: Here's the new statewide population forecast, shown in the solid blue line.

158

00:26:57.750 --> 00:27:01.650

Mathew Cooper: The red line is last year's forecast, the green is the year before that.

159

00:27:02.480 --> 00:27:17.840

Mathew Cooper: DOF's population estimates are anchored by the decennial census, so the year 2020 is fixed, and they estimate the intersensal years using various records, which are updated each cycle to incorporate new and more accurate information.

160

00:27:18.300 --> 00:27:19.859

Mathew Cooper: The update this year.

161

00:27:20.230 --> 00:27:24.810

Mathew Cooper: Again, reflects a change in the method of estimating international migration.

162

00:27:25.220 --> 00:27:31.219

Mathew Cooper: Which caused the recent history to be revised upwards a bit, but the subsequent growth rate to be lower.

163

00:27:32.000 --> 00:27:42.419

Mathew Cooper: You can see an inflection point in the last year of historical data where the slower growth starts, and this is the impact of federal immigration policy and termination of, of,

164

00:27:42.540 --> 00:27:45.869

Mathew Cooper: Humanitarian programs, etc, in 2025.

165

00:27:46.630 --> 00:27:56.360

Mathew Cooper: DOF reduced its projections to levels consistent with 2018-2019, expecting that international arrivals would be similar to that period.

166

00:27:56.990 --> 00:28:01.730

Mathew Cooper: And this trend... Aligns with analyses from other economists.

167

00:28:02.160 --> 00:28:09.810

Mathew Cooper: Who identified declining immigration and increased deportations as principal factors constraining, growth.

168

00:28:10.830 --> 00:28:18.620

Mathew Cooper: This chart shows the statewide population, but the trend is most pronounced in more populous areas of the state, especially in Southern California.

169

00:28:20.480 --> 00:28:21.870

Mathew Cooper: Next slide.

170

00:28:23.590 --> 00:28:27.549

Mathew Cooper: DUF's households model has some methodology changes.

171

00:28:27.650 --> 00:28:35.450

Mathew Cooper: There are some modifications accounting for the impacts of California's wildfires, and they've incorporated some machine learning into their modeling.

172

00:28:35.750 --> 00:28:43.009

Mathew Cooper: The net effect of that new modeling would have actually increased the projected household growth rate modestly through 2030.

173

00:28:43.480 --> 00:28:50.719

Mathew Cooper: But the households forecast is also tied to the population forecast, and since that is lower, it brought this back down.

174

00:28:50.990 --> 00:28:57.209

Mathew Cooper: So the trend is still towards increasing rates of household formation, but it slows down later in the forecast.

175

00:28:57.600 --> 00:29:02.340

Mathew Cooper: And because of the lower population, the total number of households ends up being lower.

176

00:29:04.040 --> 00:29:14.600

Mathew Cooper: Vice Chair, I think you had an interesting question earlier this week about whether recent or pending changes to CEQA were represented in this forecast, and the answer is no.

177

00:29:14.680 --> 00:29:23.769

Mathew Cooper: So I guess we could acknowledge the possibility that changes to CEQA could increase the housing stock, help with affordability, and push the number of households

178

00:29:23.830 --> 00:29:37.760

Mathew Cooper: back a bit higher, but I don't have any numerical estimate on what kind of impact that would have. You know, I don't think we would make any adjustment to the input data at this point. But it is an interesting question, so thank you for raising that.

179

00:29:38.860 --> 00:29:40.190

Vice Chair Siva Gunda: Thank you, Matthew.

180

00:29:41.270 --> 00:29:42.830

Mathew Cooper: Next slide.

181

00:29:44.060 --> 00:29:46.320

Mathew Cooper: Persons per household.

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00:29:46.420 --> 00:29:52.900

Mathew Cooper: So this chart just combines the last two datasets to show the average number of persons per household statewide.

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00:29:53.230 --> 00:30:06.049

Mathew Cooper: A minor note, we remove population in group quarters, like incarcerated people or college students in dorms when we do this calculation. This chart shows that data before that accounting.

184

00:30:06.180 --> 00:30:11.579

Mathew Cooper: So our actual forecasting values are slightly different, but the trend is the same as what's shown here.

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00:30:12.040 --> 00:30:18.519

Mathew Cooper: Over the last several years, there's been an increase in the rate of household formation, like one household splitting into multiple.

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00:30:19.230 --> 00:30:21.739

Mathew Cooper: Which makes this metric go down.

187

00:30:22.380 --> 00:30:28.000

Mathew Cooper: and, that trend had been accelerating the last few vintages.

188

00:30:28.290 --> 00:30:33.479

Mathew Cooper: This year, The number is still decreasing, but just at a less steep rate.

189

00:30:33.620 --> 00:30:38.010

Mathew Cooper: And that just reflects the changes in population households that we already discussed.

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00:30:38.150 --> 00:30:43.179

Mathew Cooper: And it makes sense that concerns about immigration policy and affordability

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00:30:43.370 --> 00:30:47.700

Mathew Cooper: Would be putting upward pressure on household sizes.

192

00:30:48.980 --> 00:30:50.400

Mathew Cooper: Next slide.

193

00:30:51.830 --> 00:30:54.899

Mathew Cooper: Okay, we can get into economics. Next slide.

194

00:30:55.100 --> 00:31:00.309

Mathew Cooper: This is per capita personal income, with the same color scheme as the previous slides.

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00:31:00.470 --> 00:31:05.099

Mathew Cooper: All of these series are adjusted to $20-25 for comparison.

196

00:31:05.630 --> 00:31:11.560

Mathew Cooper: As I mentioned before, the 2026 economic forecast is pretty similar to the 2025 forecast.

197

00:31:11.670 --> 00:31:15.859

Mathew Cooper: In that it predicts slower growth initially, followed by a recovery.

198

00:31:15.980 --> 00:31:21.419

Mathew Cooper: This new forecast just shows a little bit bigger increase in the 2030s.

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00:31:22.000 --> 00:31:39.299

Mathew Cooper: And in California, personal income growth continues to benefit from resilient demand in technology and professional services that's keeping wage growth above the national average, but that growth is disproportionate in that it's occurring in already higher incomes.

200

00:31:40.270 --> 00:31:45.799

Mathew Cooper: So this is basically just showing average, and it may be masking some economic pain.

201

00:31:46.880 --> 00:31:58.610

Mathew Cooper: Also, a side note, just wanted to point out that for most of these econ demo variables, the divergence between vintages is much less pronounced in the short term than in the long term.

202

00:31:59.210 --> 00:32:16.140

Mathew Cooper: Especially in the years that have bearing on resource adequacy requirements. About 1 to 3 years forward, there's not so much volatility in the various components. Obviously, there's more uncertainty further out in the forecast, which has more bearing on, like, long-term planning processes.

203

00:32:16.320 --> 00:32:24.429

Mathew Cooper: So, we can, of course, continue to have conversation about sources of uncertainty. Just wanted to highlight that, in the near term.

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00:32:24.800 --> 00:32:26.870

Mathew Cooper: The variability is much less.

205

00:32:28.270 --> 00:32:29.969

Mathew Cooper: Next slide.

206

00:32:31.390 --> 00:32:35.349

Mathew Cooper: So, gross state product also appears similar to the last cycle.

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00:32:35.460 --> 00:32:42.219

Mathew Cooper: We have near-term growth that's a bit slow, then there's a return to long-term growth that's similar to previous vintages.

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00:32:42.580 --> 00:32:52.009

Mathew Cooper: And to historical averages. And just want to flag again the uncertainty associated with federal policy, and some of the signs of economic weakness.

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00:32:52.170 --> 00:33:05.500

Mathew Cooper: Investment in AI is probably counteracting some of the slowdown in other areas, as California has secured the largest share of AI venture capital, which increases GSP income levels and employment.

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00:33:05.680 --> 00:33:08.470

Mathew Cooper: But those impacts are concentrated in the Bay Area.

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00:33:08.730 --> 00:33:11.299

Mathew Cooper: And the total...

212

00:33:11.430 --> 00:33:17.319

Mathew Cooper: Investment numbers do get distributed to other regions in the state or outside the state also.

213

00:33:17.610 --> 00:33:28.950

Mathew Cooper: And Moody's flagged some risk associated with the AI investment also, like, there could be a bust, the investment could go elsewhere, or AI, of course, could also

214

00:33:29.220 --> 00:33:34.349

Mathew Cooper: keep undercutting staffing needs, which they cite as a risk to the California economy.

215

00:33:35.510 --> 00:33:36.840

Mathew Cooper: Next slide.

216

00:33:38.270 --> 00:33:48.930

Mathew Cooper: Manufacturing is one of the areas that has felt more negative impacts. Tariffs and trade policy being the dominant driver, causing rising costs and falling employment.

217

00:33:49.390 --> 00:34:01.159

Mathew Cooper: And to a lesser degree, oil-linked input costs are also slowing it down. So the numbers here are lower than in previous forecasts, although the growth rate is similar overall.

218

00:34:02.210 --> 00:34:03.470

Mathew Cooper: Next slide.

219

00:34:05.330 --> 00:34:11.720

Mathew Cooper: This is manufacturing employment. So last year, there was a pretty significant downward revision.

220

00:34:12.179 --> 00:34:18.800

Mathew Cooper: In red, compared to the 2024 vintage in green. And that was the anticipation of trade policy impacts.

221

00:34:18.929 --> 00:34:22.069

Mathew Cooper: As expected, employment did go down last year.

222

00:34:22.350 --> 00:34:28.750

Mathew Cooper: The 2025 historical value, marked there was even a little lower than predicted.

223

00:34:28.880 --> 00:34:32.589

Mathew Cooper: So this year is similar to last year, just with that lower starting point.

224

00:34:33.000 --> 00:34:42.380

Mathew Cooper: And as with the previous slide, the dominant driver is tariffs, and the secondary driver would be the impact of rising costs, especially the price of fuel.

225

00:34:43.150 --> 00:34:44.420

Mathew Cooper: Next slide.

226

00:34:45.510 --> 00:34:51.920

Mathew Cooper: A similar story for construction employment. The 2025 actual was a bit lower than predicted.

227

00:34:52.080 --> 00:34:54.989

Mathew Cooper: So pushing this year's forecast further downward.

228

00:34:55.310 --> 00:34:59.180

Mathew Cooper: And immigration enforcement is also weighing heavily on this sector.

229

00:35:00.040 --> 00:35:03.050

Mathew Cooper: And then tariffs are also adding cost pressure from

230

00:35:03.740 --> 00:35:07.619

Mathew Cooper: Or for higher prices, like on construction materials.

231

00:35:08.920 --> 00:35:10.280

Mathew Cooper: Next slide.

232

00:35:12.110 --> 00:35:31.850

Mathew Cooper: commercial employment actually shows steadier growth than the previous vintages. We exclude agriculture, construction, manufacturing from this category. So this variable is less impacted by immigration policy and some of the other factors we discussed. And it includes some areas that are actually growing, like health employment.

233

00:35:31.980 --> 00:35:39.570

Mathew Cooper: As the population ages, there's more demand for outpatient and home-based healthcare.

234

00:35:40.250 --> 00:35:44.019

Mathew Cooper: So I'll end on that slightly more positive note,

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00:35:44.480 --> 00:35:54.520

Mathew Cooper: We have more details about trends in specific areas of employment, so please reach out if you have any questions about, you know, more specific parts of the economy.

236

00:35:55.040 --> 00:36:02.330

Mathew Cooper: But, now I'll, look to the, dais, I guess, for questions or, or discussion.

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00:36:04.970 --> 00:36:18.090

Vice Chair Siva Gunda: Thank you, Matthew. I had the benefit of getting a briefing prior to the workshop, so really appreciate bringing the elements of the conversation into the presentation.

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00:36:18.220 --> 00:36:21.580

Vice Chair Siva Gunda: Maybe I think a couple of,

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00:36:21.950 --> 00:36:25.500

Vice Chair Siva Gunda: 30,000 foot level, questions is, you know, just...

240

00:36:25.570 --> 00:36:42.780

Vice Chair Siva Gunda: It actually kind of came through as a question in the Q&A as well, just on the AI kind of investment, uncertainty, would you have more information to share here about, you know, what Smoody's outlook is on that, in terms of.

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00:36:42.920 --> 00:36:55.849

Vice Chair Siva Gunda: Are we talking about, you know, a catastrophic difference in a positive and a negative scenario? Or, you know, is it kind of a few basis points? And how does Moody characterize the risk?

242

00:36:57.430 --> 00:37:01.030

Mathew Cooper: That's a good question. Yeah, I don't know if I have,

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00:37:01.250 --> 00:37:05.650

Mathew Cooper: An alternate scenario to lay out for you exactly,

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00:37:06.340 --> 00:37:12.780

Mathew Cooper: It, like I mentioned, some of the impacts of AI investment are narrowly focused.

245

00:37:13.220 --> 00:37:17.489

Mathew Cooper: On the flip side, like we just said also, some of the,

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00:37:17.830 --> 00:37:23.870

Mathew Cooper: Spending propping up the economy is based in those same sort of high-income earners, so...

247

00:37:25.130 --> 00:37:35.800

Mathew Cooper: Yeah, I don't have a scenario for Moody's, on what that might look like. I think it's plausible there could be some significant ripple effects, or...

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00:37:36.030 --> 00:37:42.550

Mathew Cooper: perhaps it would be constrained to, you know, a more narrow portion of the economy, but yeah, apologies, I don't... I don't have...

249

00:37:42.760 --> 00:37:49.509

Mathew Cooper: The, details to sort of construct what that might look like exactly.

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00:37:49.860 --> 00:38:02.309

Vice Chair Siva Gunda: No, thank you, and I'll kind of pass it to Commissioner McAllister here, if he may have a question or comment. I think the pieces that I take away from this that are, you know, purely from the planning perspective,

251

00:38:02.460 --> 00:38:09.130

Vice Chair Siva Gunda: Is that closeness in the assumptions and inputs between various vintages in the near term.

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00:38:09.230 --> 00:38:16.449

Vice Chair Siva Gunda: Right? Over the next, you know, two, three years, whether we're talking about resource adequacy, whether we're talking about reliability.

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00:38:16.450 --> 00:38:33.120

Vice Chair Siva Gunda: the inputs seem to be pretty closely packed. That gives some sort of a certainty over the next few years in terms of planning for those elements. Where it does kind of, you know, pose a question is the mid to long term, as you mentioned.

254

00:38:33.160 --> 00:38:41.319

Vice Chair Siva Gunda: You know, the midterm investments being more on the distribution side, and the long-term being more on the transmission side. And, you know, kind of...

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00:38:41.370 --> 00:38:56.429

Vice Chair Siva Gunda: the uncertainty makes it hard to focus on one of the core elements of what everybody in the state is focused on, which is affordability. How do you manage the investments in a way that takes into account,

256

00:38:56.920 --> 00:39:01.630

Vice Chair Siva Gunda: In a base level of security in building what we need to build.

257

00:39:01.720 --> 00:39:13.320

Vice Chair Siva Gunda: but not overbuilding or underbuilding, right? So it's a hard question because of the uncertainty. So I would really, first I want to say, Matt, to you and Nancy and everybody who works on this.

258

00:39:13.320 --> 00:39:22.479

Vice Chair Siva Gunda: a really good, you know, big kudos for really great work on, you know, taking the insights from Moody's and trying to put it into the forecast in different elements.

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00:39:22.570 --> 00:39:35.500

Vice Chair Siva Gunda: I would love for us to, you know, kind of frame this discussion more holistically in our IEPR somewhere, you know, as a document, to just continue to showcase the difficulties that

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00:39:35.500 --> 00:39:53.039

Vice Chair Siva Gunda: the uncertainty in the economy present in both forecasting, but also downstream ratepayer impacts, right? So I think it's kind of a healthy conversation for us to have, but yeah, really grateful for a thoughtful, careful work that everybody's doing. So with that, I'll pass it to Commissioner McAllister.

261

00:39:54.950 --> 00:40:05.020

Commissioner Andrew McAllister: Thanks, Vice Chair, and thanks, Matthew. yeah, you sort of got into some of what I was thinking, so I think I'll maybe just build a little bit on that.

262

00:40:05.390 --> 00:40:16.680

Commissioner Andrew McAllister: The... we'll hear about the, sort of, data center, kind of, hardware side of things, and, you know, its impact... its potential impact on... on demand. I guess...

263

00:40:16.960 --> 00:40:22.760

Commissioner Andrew McAllister: I'm kind of wondering about,

264

00:40:23.460 --> 00:40:38.849

Commissioner Andrew McAllister: like, specific to California, you know, that difference between the near term and the long term, you know, many... California seems different in a lot of ways from the rest of the country, and the data center conversation seems, you know, varies depending on the sort of context, and obviously the...

265

00:40:39.330 --> 00:40:48.070

Commissioner Andrew McAllister: electricity rate regime, you know, sort of, you know, prices and the like. And I guess, the...

266

00:40:48.310 --> 00:40:54.450

Commissioner Andrew McAllister: In terms of the economy, right, we're in this very precarious situation...

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00:40:54.610 --> 00:40:58.970

Commissioner Andrew McAllister: In terms of there's gonna be, you know, there's likely gonna be some...

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00:40:59.030 --> 00:41:09.759

Commissioner Andrew McAllister: aspect of a repeat of, you know, the dot-com era, where there was a lot of forward investment with the assumption that, that the demand would be there.

269

00:41:09.820 --> 00:41:23.000

Commissioner Andrew McAllister: And eventually it was, but between, you know, point A and point B, there was a lot of trauma, and there was a cliff, and equities, you know, went underwater, and... and that whole, dynamic. And I'm wondering, kind of.

270

00:41:23.410 --> 00:41:30.049

Commissioner Andrew McAllister: It seems, obviously, you never know when the cliff's gonna come, you know, it's probably gonna come at some point where you don't know what the horizon is.

271

00:41:30.230 --> 00:41:35.739

Commissioner Andrew McAllister: And so, where... how dependent is, kind of,

272

00:41:36.230 --> 00:41:40.959

Commissioner Andrew McAllister: the... the trajectory of the econ demo, kind of, on that...

273

00:41:41.160 --> 00:41:48.970

Commissioner Andrew McAllister: on sort of the timing of that. And how... how... what's the sort of uncertainty spread? I think it's kind of what you were getting at, Vice Chair.

274

00:41:49.090 --> 00:41:58.669

Commissioner Andrew McAllister: How can we sort of manage the uncertainty with a medium and long view, manage around the uncertainty in kind of the near to medium

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00:41:58.930 --> 00:42:03.030

Commissioner Andrew McAllister: Term, and capture that in a way that sort of lets us

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00:42:03.300 --> 00:42:07.070

Commissioner Andrew McAllister: Conceive of decisions that are sort of Norris.

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00:42:09.500 --> 00:42:12.830

Mathew Cooper: Yeah, that's a great framing of that question.

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00:42:13.770 --> 00:42:19.360

Mathew Cooper: we might have to think about that a bit more. I mean, you know, I think,

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00:42:20.160 --> 00:42:26.770

Mathew Cooper: Maybe it's a little unclear how risky our company's being with their investment.

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00:42:26.920 --> 00:42:33.460

Mathew Cooper: You know, because there is still this inflationary pressure, or, you know, I think

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00:42:33.880 --> 00:42:43.679

Mathew Cooper: Like, how, how, how stretched out could... is that, overvaluation, really, and... and that could impact how, how much the correction,

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00:42:44.540 --> 00:42:48.800

Mathew Cooper: Looks... how big of a correction we would see in

283

00:42:48.940 --> 00:42:51.870

Mathew Cooper: Yeah, I'm afraid I don't... I don't have any numbers or...

284

00:42:52.010 --> 00:42:56.459

Mathew Cooper: Alternative scenario, but that's probably something we should step back and think about.

285

00:42:56.810 --> 00:43:00.059

Mathew Cooper: Like... what... what?

286

00:43:00.240 --> 00:43:03.549

Mathew Cooper: That could look like, and what would the impact be on our forecasts, yeah.

287

00:43:03.820 --> 00:43:15.300

Commissioner Andrew McAllister: I mean, maybe the demand for all the AI tools shows up in the near term, and we're all good, right? But I think just the valuations out there are really out over their skis, and...

288

00:43:15.300 --> 00:43:30.389

Commissioner Andrew McAllister: at some point, there needs to be a pullback, and how vulnerable is California, right, relative to other places? I mean, a lot of these entities are headquartered in California, but a lot of the investments are happening in other states. Right. So, like, what... anyway, that seems like a pretty nuanced story, but one that could be very important and go a lot of different ways.

289

00:43:30.470 --> 00:43:36.240

Vice Chair Siva Gunda: Commissioner McAllister, I would... I would kind of like, you know... first of all, I mean, I hear a lot of,

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00:43:36.770 --> 00:43:41.809

Vice Chair Siva Gunda: kind of the nuance that you're putting on the table, I think it's very important to have the conversation on

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00:43:42.170 --> 00:43:59.690

Vice Chair Siva Gunda: in terms of build-out, what kind of flexibility do we have to scale up or down, right? And I think, you know, the investment strategy that allows for scaling and up and down, and how do these uncertainties propagate through time, and...

292

00:43:59.760 --> 00:44:07.689

Vice Chair Siva Gunda: you know, it's kind of... we have been in a tough situation as a... as a commission and as a state in planning, you know, do we...

293

00:44:07.720 --> 00:44:25.080

Vice Chair Siva Gunda: kind of continue to plan for the worst-case scenario. You know, that's what we're doing on reliability, you know, putting platinum coating on, figuring out we'll never have a flicker, because electrification is such an important story, and we do not want to, quote-unquote, becoming a cautionary tale.

294

00:44:25.080 --> 00:44:29.430

Vice Chair Siva Gunda: Right, so we want to have success on the electrification and reliability.

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00:44:29.430 --> 00:44:35.490

Vice Chair Siva Gunda: At the same time, you know, we have these... huge,

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00:44:35.760 --> 00:44:48.099

Vice Chair Siva Gunda: you know, upward pressure on rates, and, you know, wildfires are a very important part of that, cost shift is a very important part of that, but also, you know, build-out is a part of it, and...

297

00:44:48.100 --> 00:45:05.650

Vice Chair Siva Gunda: how do we build a more flexibly, for lack of better words, that allows for those rate pressure to be contained? So I really appreciate you raising that, and I think that's something that we should continue to elevate into the public sphere, and solicit ideas on how best to do that.

298

00:45:07.310 --> 00:45:17.600

Commissioner Andrew McAllister: Yeah, and I... there... the first order is really, like, okay, what hardware, you know, what demand is going to be, like, how many data centers and, you know, the known loads, and that's sort of the first order, like, demand.

299

00:45:17.750 --> 00:45:32.200

Commissioner Andrew McAllister: But... and really here, we're talking about, you know, the econ, which is sort of the context and the second order, but, both really, really important and interact a lot, but we can wait till the... the other panels to get at sort of the hardware stuff.

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00:45:33.110 --> 00:45:37.020

Commissioner Andrew McAllister: Yeah, but appreciate you, Matthew, and all the hard thinking you're doing about this.

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00:45:37.520 --> 00:45:44.510

Vice Chair Siva Gunda: It's wonderful. I think with that, I think we can... if, Commissioner, you don't have any questions, then we can pass it to Heidi to go through the Q&A.

302

00:45:45.380 --> 00:45:46.190

Vice Chair Siva Gunda: Heidi?

303

00:45:48.180 --> 00:45:52.109

Heidi Javanbahkt: Well, Matthew, did you have just a couple more slides?

304

00:45:53.100 --> 00:45:55.090

Mathew Cooper: Oh, no, I'm sorry, that was the last one, I think we lost.

305

00:45:55.090 --> 00:45:55.440

Heidi Javanbahkt: Okay.

306

00:45:55.440 --> 00:46:01.080

Mathew Cooper: The last one maybe just says questions, okay. Apologies for not saying... for not advancing it.

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00:46:02.300 --> 00:46:07.009

Heidi Javanbahkt: Okay, then we do... we have a couple questions,

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00:46:09.180 --> 00:46:18.989

Heidi Javanbahkt: start with this one about, from Lisa Gee. So they're asking, have you explored how the use of

309

00:46:19.010 --> 00:46:36.399

Heidi Javanbahkt: per capita income mean or average of $91,000 may skew the later analysis because it includes the very rich. This appears to be very significant for affordability analysis, given that the median income is somewhere between $40,000 and $50,000.

310

00:46:36.640 --> 00:46:38.999

Heidi Javanbahkt: So maybe you could talk a bit about, like.

311

00:46:39.410 --> 00:46:42.769

Heidi Javanbahkt: What variables our models are using.

312

00:46:43.660 --> 00:46:46.420

Mathew Cooper: Yeah, yeah, great question.

313

00:46:46.630 --> 00:46:55.449

Mathew Cooper: Income levels, are considered in some of our residential and, I think commercial modeling also.

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00:46:56.030 --> 00:46:59.220

Mathew Cooper: But the residential is probably the primary one, and...

315

00:46:59.340 --> 00:47:14.259

Mathew Cooper: You're right, thank you for pointing out that, that, spread is significant. I think, my understanding is also that higher income brackets use energy, use more energy than... than lower income brackets, so,

316

00:47:15.440 --> 00:47:18.820

Mathew Cooper: I think naturally, that...

317

00:47:19.000 --> 00:47:26.969

Mathew Cooper: Using, an average could still be correlated with the, sort of, average energy use as we do our modeling.

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00:47:27.420 --> 00:47:33.540

Mathew Cooper: And I don't... I don't have any more detailed numbers, I think, to share on that, but,

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00:47:33.720 --> 00:47:34.460

Mathew Cooper: Yeah.

320

00:47:35.120 --> 00:47:42.420

Vice Chair Siva Gunda: Heidi, can I just, maybe, you know, this is an open question we can come back to at the end of the workshop if we have time,

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00:47:42.720 --> 00:47:49.400

Vice Chair Siva Gunda: what level of granularity? I think that's a really good question, you know, as the,

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00:47:49.450 --> 00:48:04.990

Vice Chair Siva Gunda: the median... as the tails grow in each one of these variables, right, whether it's K-shaped economy, and there's concentration of, you know, I think the basic tenet of the question for me is, does the model...

323

00:48:05.370 --> 00:48:19.420

Vice Chair Siva Gunda: first, you know, is it true that the models are based largely on the averages and medians, right? Is that how we construct our modeling? That's one. To the extent that that's what we do, or not do, if we did that,

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00:48:19.420 --> 00:48:27.139

Vice Chair Siva Gunda: You know, are we skewing the results, in one shape or the other? And how do we adequately

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00:48:27.150 --> 00:48:33.849

Vice Chair Siva Gunda: Take into account the diverging, the divergence of the statistical spread of

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00:48:33.980 --> 00:48:45.869

Vice Chair Siva Gunda: a specific average variable within, you know, that kind of context, right? So, I think it's an important piece. I don't know if we have any historical work we do on kind of understanding

327

00:48:45.870 --> 00:48:56.900

Vice Chair Siva Gunda: how that is changing, and how that might impact our forecasting models, but I think it's a... it's a good question. We can come back to it if we had time, or somebody else can speak to it, or if not, you know, we should definitely...

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00:48:56.960 --> 00:49:05.159

Vice Chair Siva Gunda: Put that in a future workshop to just talk through the impact of the statistical spread of these variables over time.

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00:49:07.140 --> 00:49:12.700

Heidi Javanbahkt: Yeah, the residential model considers income, but...

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00:49:12.800 --> 00:49:18.329

Heidi Javanbahkt: Little fuzzy on the details, so, we can... we can loop back around to this question.

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00:49:18.330 --> 00:49:32.380

Mathew Cooper: I would point out, it is also, we model at the forecast zones, like I showed in the earlier slide, and that at least captures some of that income spread, you know, higher incomes are concentrated in Zone 1, which is the Bay Area.

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00:49:34.170 --> 00:49:35.799

Vice Chair Siva Gunda: Really good point. Thank you, Mathew.

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00:49:41.130 --> 00:49:54.739

Heidi Javanbahkt: So maybe that is actually a good segue to a question from Faith Carlson. How are these data applied to the zonal level or to smaller regions within zones, such as by LSE or by county?

334

00:49:55.950 --> 00:50:03.880

Mathew Cooper: Yeah, great question, thanks. We aggregate the input data to the zone level, and we usually do our forecasting

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00:50:04.150 --> 00:50:09.849

Mathew Cooper: at that level, so we created a forecast for each of the 20 or 21 zones.

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00:50:10.260 --> 00:50:14.519

Mathew Cooper: And, it's then...

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00:50:15.440 --> 00:50:22.530

Mathew Cooper: allocated back to the LSEs with, just kind of, the growth rate for each zone, with a few adjustments for, like.

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00:50:22.860 --> 00:50:27.709

Mathew Cooper: LLCs that are expecting data centers, or that have significant load for, like, water pumping.

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00:50:29.550 --> 00:50:36.430

Mathew Cooper: There is still some question about that, which is something we're looking into, whether, like, there's a particular county that may

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00:50:36.550 --> 00:50:39.200

Mathew Cooper: Show a, a different...

341

00:50:39.300 --> 00:50:45.329

Mathew Cooper: trend than its larger zone, so we're sort of thinking through how we might adjust for that.

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00:50:45.480 --> 00:50:48.109

Mathew Cooper: Possibly later this cycle.

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00:50:53.790 --> 00:50:58.420

Heidi Javanbahkt: There's a question about the ag forecast.

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00:51:00.420 --> 00:51:12.079

Heidi Javanbahkt: Michael Boccadoro, and I'm sorry if I'm pronouncing names wrong. Does the economic forecast take, the Sustainable Groundwater Management Act into account?

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00:51:12.200 --> 00:51:15.799

Heidi Javanbahkt: For ag demand going forward.

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00:51:18.990 --> 00:51:21.030

Mathew Cooper: That's a good question, I don't know.

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00:51:21.930 --> 00:51:28.579

Mathew Cooper: I don't think any of the slides I showed were specific to agriculture, but, we could certainly,

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00:51:28.900 --> 00:51:34.829

Mathew Cooper: Probably look into that, if you could send, send me an email, or send your contact info.

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00:51:36.180 --> 00:51:38.400

Heidi Javanbahkt: Well, I have a little bit I can share.

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00:51:38.400 --> 00:51:39.709

Mathew Cooper: Oh, go ahead then. Thanks, Heidi.

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00:51:39.710 --> 00:51:54.959

Heidi Javanbahkt: So, the ag forecast doesn't currently include specific accounting for the Sustainable Groundwater Management Act. There's a high level of uncertainty around those impacts on ag electricity demand.

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00:51:54.960 --> 00:52:05.600

Heidi Javanbahkt: So we're... we're monitoring staff... or, sorry, we're monitoring water management plans, and we'll engage with stakeholders on this question and... and look at developing scenarios.

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00:52:13.130 --> 00:52:26.109

Heidi Javanbahkt: Got two more questions, the first, so just going back to, the different zones in the state, how is Zone Zero treated, given that they are distinct

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00:52:26.410 --> 00:52:28.000

Heidi Javanbahkt: On their own areas.

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00:52:30.990 --> 00:52:40.360

Mathew Cooper: Are you saying because it's sort of spread out, geographically, maybe, there's not a common trend? Yeah, I think the,

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00:52:41.560 --> 00:52:42.820

Mathew Cooper: we,

357

00:52:43.310 --> 00:52:51.490

Mathew Cooper: actually don't... Zone Zero isn't included in our final published forecast, but we do do a little bit of forecasting with them, and I think,

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00:52:51.990 --> 00:53:00.579

Mathew Cooper: it is such a disparate region, I think we use some averages, and it's a very small portion of overall demand, so,

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00:53:01.480 --> 00:53:10.120

Mathew Cooper: Could be some room for improvement, but yeah, I think the answer is just we use some average assumptions and, mostly probably the historical, recent historical trend for that.

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00:53:10.300 --> 00:53:12.059

Mathew Cooper: Sort of area summed up.

361

00:53:15.160 --> 00:53:22.339

Heidi Javanbahkt: Okay, and then last question, what other market signals can be considered in determining the direction of future demand?

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00:53:24.870 --> 00:53:34.119

Mathew Cooper: Good question. We have much more data than what I presented here today, and some of the sector model... modelers,

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00:53:35.050 --> 00:53:46.260

Mathew Cooper: Dig into that much more, such as, you know, industrial will look, look at specific variables, you know, related to industrial demand.

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00:53:48.630 --> 00:53:55.309

Mathew Cooper: I don't know if there's some... if there's any big overall indicator, that I'm not thinking of, but

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00:53:55.480 --> 00:53:59.329

Mathew Cooper: Yeah, feel free to suggest one, if you, if you have thoughts on that.

366

00:54:03.790 --> 00:54:08.030

Heidi Javanbahkt: Okay, there's no other questions, so thanks, Matthew.

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00:54:08.140 --> 00:54:18.160

Heidi Javanbahkt: And I will turn it over to Cristy Sanada, who's the Deputy Director over Energy Demand Forecast and Scenarios, and we'll...

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00:54:18.280 --> 00:54:20.990

Heidi Javanbahkt: Move into our panel on known loads.

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00:54:26.890 --> 00:54:32.150

Heidi Javanbahkt: Workshop, we are going to focus on known Customer energization request.

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00:54:32.260 --> 00:54:33.159

Heidi Javanbahkt: So for this.

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00:54:33.160 --> 00:54:46.519

Cristy Sanada: I'm going to start off with some background on known loads, how CC incorporated known load data into the 2025 IPR Forecast, and key questions that CC staff is looking to resolve this forecast cycle.

372

00:54:46.590 --> 00:54:54.039

Cristy Sanada: Then, we will turn to a panel where Bobby Wilson from CC will present an analysis on known load data that we received this year.

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00:54:54.090 --> 00:55:11.599

Cristy Sanada: And then we'll have a panel discussion with representatives from PG&E, SCE, and SG&E to help further our understanding of known loads, including how utilities incorporate these projects into their distribution planning and trends in known mode energization. So, next slide.

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00:55:15.100 --> 00:55:19.300

Cristy Sanada: Alright, so to kick off this discussion, you can move... move forward one more.

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00:55:26.420 --> 00:55:46.379

Cristy Sanada: So, to kick off the discussion, I'm going to first provide a background on known loads and why CC began to examine known loads as part of our forecast products. So, rewinding to 2018, CPC issued a decision directing investor utilities to use CC's Forecast in their distribution planning processes.

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00:55:46.710 --> 00:55:51.619

Cristy Sanada: After 2018, there were several indicators of wood growth in future years. This trend is...

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00:55:51.670 --> 00:56:02.980

Sandra Nakagawa: I'm just gonna pause you real quickly. We have a couple folks that are having a hard time hearing you, so maybe we can just do a quick audio check and see if we can get your volume up, or you closer to the mic.

378

00:56:04.360 --> 00:56:05.340

Sandra Nakagawa: Is that better?

379

00:56:06.230 --> 00:56:08.580

Sandra Nakagawa: It's still pretty quiet.

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00:56:08.580 --> 00:56:10.709

Vice Chair Siva Gunda: So, so pretty quiet, Cristy.

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00:56:18.050 --> 00:56:21.539

Sandra Nakagawa: We'll give it just a minute to see if we can get, Cristy's audio,

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00:56:22.110 --> 00:56:28.369

Sandra Nakagawa: Let's also see if we can get the slides to go full screen while we're doing an audio check here. Thanks for your patience, folks.

383

00:56:28.370 --> 00:56:30.489

Cristy Sanada: Well, is... is this any better for you all?

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00:56:30.490 --> 00:56:31.270

Sandra Nakagawa: better, yeah.

385

00:56:31.270 --> 00:56:32.610

Cristy Sanada: Okay, perfect.

386

00:56:32.760 --> 00:56:34.120

Cristy Sanada: Great, thanks.

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00:56:34.520 --> 00:56:44.600

Cristy Sanada: Okay, so let me start the slide over, but this provides a background on known loads and why CC began to examine known loads as part of our forecast product. So.

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00:56:44.600 --> 00:56:54.800

Cristy Sanada: Going back to 2018, CPC issued a decision, and that directed investor and utilities to use CC's Forecast in their distribution planning processes.

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00:56:55.220 --> 00:57:01.829

Cristy Sanada: After 2018, there were several indicators of load growth in future years, and this trend is evident in

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00:57:01.840 --> 00:57:20.869

Cristy Sanada: CC's Forecast vintages around that time as well. There are also concerns about the timing of customer load energizations. So, in 2024, the CPUC issued a decision in their high DER proceeding that adopted reforms to make IOU distribution planning more proactive to meet expected load growth.

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00:57:20.870 --> 00:57:35.370

Cristy Sanada: and avoid delays in customer projects that require distribution upgrades. So as part of this decision, the IOUs can now use bottom-up data, which includes known load data, to exceed CC's IEPR Forecast in certain cases.

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00:57:35.530 --> 00:57:52.379

Cristy Sanada: The IOUs were also required to track and report all known load projects and share that data with CEC, which the IOUs began to do in 2025. And so that brings us to the 2025 IPR Forecast, which was the last, last year's forecast cycle. So, next slide.

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00:57:55.090 --> 00:58:10.409

Cristy Sanada: So this slide just provides an overview of where ZC landed on known loads for last year's forecast, the 2025 IPR. So first, again, known loads are customer load energization requests on the distribution system submitted to the investor-owned utilities.

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00:58:10.800 --> 00:58:14.980

Cristy Sanada: NOLO data represents project-level data from each IOU,

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00:58:15.480 --> 00:58:32.769

Cristy Sanada: And so last year, when determining whether to incorporate known loads into CC Forecast products, we were balancing a number of considerations. So, on one hand, we were seeing distribution planning forecasts that exceeded the CC IEPR Forecast, resulting in concerns that there could be gaps between

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00:58:32.770 --> 00:58:36.869

Cristy Sanada: Distribution Planning and Transmission Planning, and system planning.

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00:58:36.970 --> 00:58:49.179

Cristy Sanada: Additionally, if known loads represented a backlog of projects, and if utilities moved to energize these projects in the near term, could we see load growth that exceeded what the IPR Forecast would otherwise bottle?

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00:58:49.580 --> 00:59:07.459

Cristy Sanada: On the other hand, 2025 was the first year that CC worked with known load data, and there was a lack of historical record on known loads to make firm inferences from that data. Additionally, we had concerns, and we still do, that there could be double counting between known load projects and existing parts of the CC Forecast.

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00:59:08.100 --> 00:59:18.770

Cristy Sanada: I'll note that last year we also received feedback from various stakeholders about balancing impacts to near-term procurement and longer-term grid planning needs. We definitely recognize these concerns.

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00:59:18.780 --> 00:59:28.720

Cristy Sanada: Ultimately, though, uncertainty with the known load data and the level of near-term load growth that the known load data suggested led to the approach that we took in the 25 IEPR.

401

00:59:28.760 --> 00:59:43.349

Cristy Sanada: And so, as Heidi explained at the start of this workshop, for the 2025 IPR, CC ultimately adopted a planning forecast without known loads, and two versions of the local reliability scenario, one with known loads and one without known loads.

402

00:59:43.840 --> 00:59:45.129

Cristy Sanada: So, next slide.

403

00:59:47.710 --> 01:00:05.159

Cristy Sanada: So this graphic provides a high-level overview of the process that we used to translate known load data into annual energy last year. We limited our analysis to non-EV charging projects and focused on traditional load growth projects like commercial buildings and residential development.

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01:00:05.460 --> 01:00:11.570

Cristy Sanada: So first, we made several assumptions, such as project cancellation, utilization, and load ramp rates.

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01:00:11.690 --> 01:00:15.970

Cristy Sanada: And then we applied load profiles to translate capacity into energy.

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01:00:16.130 --> 01:00:27.410

Cristy Sanada: Then we compared the estimated annual energy from known loads to our baseline sales forecast. So this step helped avoid double-counting load growth naturally occurring in our baseline sector forecasts.

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01:00:28.080 --> 01:00:41.880

Cristy Sanada: For each sector, if known load... if load growth from known load exceeded load growth from our baseline forecast, then the incremental portion of load growth above the baseline was counted as new load growth that we attributed to known loads.

408

01:00:42.560 --> 01:00:54.689

Cristy Sanada: And I also just want to touch on how CC's existing models account for load growth already. So for our baseline forecast, load growth is primarily driven by long-term economic and demographic projections.

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01:00:54.830 --> 01:01:09.719

Cristy Sanada: Our residential end-use model forecasts residential electricity, natural gas consumption for California homes, and we use inputs like persons per household, number of households, appliance saturation, and energy use per appliance.

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01:01:10.210 --> 01:01:19.969

Cristy Sanada: Our commercial sector model is another end-use model that forecasts for different building types and uses inputs like floor space projections, equipment saturation usage patterns.

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01:01:20.000 --> 01:01:31.169

Cristy Sanada: And other sector models, like industrial and mining and agriculture are based on long-term relationships between historic annual energy sales and economic and demographic drivers, like unemployment.

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01:01:31.170 --> 01:01:49.350

Cristy Sanada: GDP, population, fuel prices, and economic output by sector. So, essentially, our existing forecast models... in our existing forecast models, load growth is a function of long-term drivers, and when load growth from other sources are expected to significantly impact future demand.

413

01:01:49.410 --> 01:02:05.639

Cristy Sanada: but reliable data doesn't exist or isn't readily available to incorporate into our models, then CC has and does make specific adjustments. So, for example, data centers, and in the past, we've accounted for load growth at naval bases and cannabis cultivation.

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01:02:05.690 --> 01:02:13.259

Cristy Sanada: through exogenous adjustments to the forecast. And that is essentially how we approach known loads for the 2025 IPR.

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01:02:13.990 --> 01:02:15.300

Cristy Sanada: So, next slide.

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01:02:17.710 --> 01:02:27.120

Cristy Sanada: So, this graphic shows how CC's Forecast products feed into different planning processes, and how those processes relate to one another.

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01:02:27.280 --> 01:02:35.999

Cristy Sanada: So here we want to emphasize that the planning processes that use ZCC's Forecast are all related, and no single process exists in isolation.

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01:02:36.230 --> 01:02:47.110

Cristy Sanada: It is important that forecasts across these processes, although they're focused on different points of the grid, are translatable to one another and don't unintentionally create gaps in planning.

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01:02:47.420 --> 01:02:59.440

Cristy Sanada: So, for example, IOU distribution planning uses CC's local reliability Forecast, but as I mentioned, distribution-level forecasts might be supplemented with project-specific information.

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01:02:59.550 --> 01:03:06.490

Cristy Sanada: There isn't a direct link between distribution and transmission planning through a process.

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01:03:06.600 --> 01:03:16.310

Cristy Sanada: But the load growth that the utilities might identify through their bottoms-up distribution forecasts might inform the need for transmission infrastructure to support that load growth as well.

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01:03:16.540 --> 01:03:28.530

Cristy Sanada: But this line of thinking doesn't stop at local planning. Load trends that are identified from the distribution system can ultimately roll up and impact system demand, in which case system transmission

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01:03:28.640 --> 01:03:40.149

Cristy Sanada: resource planning process, you should also consider the demand trends that might be identified from the distribution system upward. So, I think the big question, though, is how to translate that information from step to step.

424

01:03:40.650 --> 01:03:57.379

Cristy Sanada: I will say, in the longer run, we want to work towards better synchronizing forecast assumptions across different points of the grid. This could involve establishing more coordinated structures with utilities to translate local information through different points on the system that CC currently

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01:03:57.380 --> 01:04:07.309

Cristy Sanada: disaggregates its forecast down to the goal there being able to more readily compare and reconcile CC forecasts with utility bottom-up forecasts.

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01:04:07.610 --> 01:04:15.600

Cristy Sanada: But for the 2026 IPR, where we are today, we do want to make progress on the work on known loads that we started last year. So, next slide.

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01:04:17.960 --> 01:04:32.559

Cristy Sanada: So, where are we now for the 2026 IPR? We have been meeting regularly with IOU staff since we received updated known load data back in June. We certainly appreciate the collaboration with the IOU so far. They've helped us

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01:04:32.620 --> 01:04:52.160

Cristy Sanada: answer several questions about known load data and what data is available. I do want to note that one of our goals this year was to better account for potential double counting between known loads and existing load modifiers, but we did seek some data on... more data on known load projects, like DER capacity and

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01:04:52.160 --> 01:05:02.760

Cristy Sanada: whether EV load was embedded in known load requests, but this data request is currently on hold, as the IOUs would have to manually compile a lot of that information.

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01:05:02.780 --> 01:05:12.919

Cristy Sanada: data quality would be uncertain and would likely not be available for this forecast cycle, so we do want to continue working with the IOUs to enhance those data streams going forward.

431

01:05:13.400 --> 01:05:26.509

Cristy Sanada: Another thing that we have on deck for this year is we do plan to review meter data for completed known loan projects, and that'll help us get a better understanding of how those loads actually show up after they energize.

432

01:05:26.810 --> 01:05:40.480

Cristy Sanada: And then lastly, I want to leave off, we do have some key questions that we're looking to address this year around known loads, and so those are whether CC's Forecast products do already count for the known... for the load growth that known loads represent.

433

01:05:40.860 --> 01:06:00.120

Cristy Sanada: Whether applying known loads is a distinct adjustment to the forecast risks double counting load in any way, whether energizations in recent years have resulted in increases in system demand, and we have a short history of known load data, so our recent load trends a good indicator of the next few years?

434

01:06:00.900 --> 01:06:11.750

Cristy Sanada: So with that intro, we'll begin our panel. I'm going to first hand things off to Bobby Wilson from CC to present an analysis on node-load data.

435

01:06:13.170 --> 01:06:19.060

Vice Chair Siva Gunda: Cristy, before we jump to Bobby, can I ask a quick question based on...

436

01:06:19.200 --> 01:06:31.109

Vice Chair Siva Gunda: you know, just your slides. I'm looking at slide number 4, kind of the estimation of the known loads. Today, you know, the kind of the flow chart on how we do that.

437

01:06:31.750 --> 01:06:41.950

Vice Chair Siva Gunda: At a 30,000 foot level, could you help, like, a slide... yeah. Is this done... so I'm just kind of thinking this through...

438

01:06:41.960 --> 01:06:56.410

Vice Chair Siva Gunda: We have the system-level forecast. Part of the work that CEC does is disaggregate the system-level forecast to a distribution, like, to bus bar level, right? So that's kind of a process we go.

439

01:06:56.590 --> 01:07:08.230

Vice Chair Siva Gunda: Can you help me understand the... especially the yes-no in the orange box... orange boxes? At what granularity is that done? Is that done at the bus level? Is that done at a...

440

01:07:08.370 --> 01:07:11.320

Vice Chair Siva Gunda: Sis, can you explain to me a little bit on that?

441

01:07:11.860 --> 01:07:18.380

Cristy Sanada: Yeah, so that... that was not at the bus bar level, that was at, like, the sector model, or the sector forecast level.

442

01:07:18.640 --> 01:07:28.659

Cristy Sanada: And then we took that... the total forecast, the system forecast, and then we disaggregate it down to the transmission bus, and that's for CAISO transmission planning.

443

01:07:28.760 --> 01:07:41.140

Cristy Sanada: We were using... because the known load data is very location-specific, so we were using the known load data to inform how we... how we did the disaggregation of that load down to the transmission bus.

444

01:07:41.450 --> 01:07:50.009

Vice Chair Siva Gunda: Got it. And, you know, I think a previous workshop last year, a couple years ago, when we really started thinking about how best to...

445

01:07:50.050 --> 01:08:01.499

Vice Chair Siva Gunda: You know, structure... think about, kind of, the flow of uncertainty, from system, you know, down to more geographically disaggregated levels.

446

01:08:01.570 --> 01:08:07.459

Vice Chair Siva Gunda: You know, we talked about how, the... the coincidence of the...

447

01:08:08.050 --> 01:08:24.759

Vice Chair Siva Gunda: of the loads at each bus bar, kind of are masked as you aggregate more and more to the upper levels, to a system level. Do we have a general, kind of ballpark number on if we're seeing...

448

01:08:24.910 --> 01:08:28.689

Vice Chair Siva Gunda: You know, 100 units at the system.

449

01:08:28.979 --> 01:08:32.090

Vice Chair Siva Gunda: What is a typical,

450

01:08:32.130 --> 01:08:51.469

Vice Chair Siva Gunda: disaggregated planning margin, for lack of a better word, shows up at the bus bar level? Is it, like, 120, 150? I mean, I'm totally... and I can appreciate that it's, like, geographically disaggregated also. Could you... I mean, is there, like, a general ballpark on how to think about the disaggregated load?

451

01:08:53.300 --> 01:09:10.440

Cristy Sanada: Yeah, it is hard to give an estimate on that. That's not something that we have at the moment, but I think there's recognition across us and the IOUs that, yeah, as you move from these very location-specific projects up to

452

01:09:10.520 --> 01:09:17.359

Cristy Sanada: Higher levels on the system, to transmission, or substations to transmission areas.

453

01:09:17.420 --> 01:09:32.129

Cristy Sanada: there is a need to account for coincidence at each of those levels, but I think that we're seeing that that might require a lot of coordination with the IOUs to understand... get on the same page about the load profiles of the individual loads to start with, so that we can start building that up.

454

01:09:32.130 --> 01:09:41.360

Cristy Sanada: So I think there's recognition that that's something that we want to work on. It would be really important to help with that translation between our forecasts.

455

01:09:41.490 --> 01:09:45.110

Cristy Sanada: Yeah, that may come through in some of the conversation with IOUs later.

456

01:09:46.090 --> 01:09:49.779

Vice Chair Siva Gunda: Thank you so much, Cristy. Sorry for that, jump in there, just wanted to clarify. Thank you.

457

01:09:52.760 --> 01:09:55.079

Cristy Sanada: Alright, hand it over to Bobby.

458

01:09:57.670 --> 01:09:59.280

Bobby Wilson: Okay, thank you, Cristy.

459

01:09:59.480 --> 01:10:09.639

Bobby Wilson: Hello, everyone. I'll be discussing some preliminary findings from our analysis of known modes data from PG&E, SDG, and SCE that was shared with us in June of this year.

460

01:10:10.130 --> 01:10:11.659

Bobby Wilson: Next slide, please.

461

01:10:12.900 --> 01:10:27.299

Bobby Wilson: But before we look at the known loads data, we're going to take a quick look at some Q4 cells data. This slide shows historical cells for each IOU by sector, residential and non-residential, from 2018 to 2025.

462

01:10:27.610 --> 01:10:32.210

Bobby Wilson: Starting with PG&E, we see a gradual decline in sales over this period.

463

01:10:32.320 --> 01:10:38.880

Bobby Wilson: For 2025, total sales declined by about 4.7% compared to 2024.

464

01:10:39.230 --> 01:10:47.289

Bobby Wilson: The non-residential sector declined by about 4.9%, while the residential sector declined by about 4.3%.

465

01:10:48.920 --> 01:10:59.250

Bobby Wilson: For SCE, we see a slight decline in sales over the same time period. For 2025, total sales declined by 1.6% compared to 2024.

466

01:10:59.470 --> 01:11:05.419

Bobby Wilson: The non-residential sector was flat, but the residential sector declined by about 4.6%.

467

01:11:06.510 --> 01:11:12.480

Bobby Wilson: And then for SDG&E, we see a slight decline in cells from 2018 to 2025.

468

01:11:12.680 --> 01:11:21.280

Bobby Wilson: However, unlike PG&E and SCNE, total sales increased by about 3.4% between 2024 and 2025.

469

01:11:21.820 --> 01:11:29.270

Bobby Wilson: The non-residential sector increased by about 1.2%, while the residential sector increased by about 8.3%.

470

01:11:29.650 --> 01:11:43.019

Bobby Wilson: For SDG&E, the completed known loads projects might not explain this increase in sales, since about 88% of those known loads are in the non-residential sector, and about 12% are in the residential sector.

471

01:11:43.400 --> 01:11:55.720

Bobby Wilson: As a side note, we have met with the SDG&E system Forecasting Team, and as we continue to look into the 2025 historical data, we hope to have a better understanding of what caused the increase in sales.

472

01:11:56.620 --> 01:12:02.799

Bobby Wilson: So, overall, cells continued to decline, with the exception of SDG&E in 2025.

473

01:12:03.010 --> 01:12:13.890

Bobby Wilson: So far, it does not appear that known loads are increasing cells as would be expected. However, it might be too early to make this conclusion, given that the bulk of known loads projects have yet to be energized.

474

01:12:14.070 --> 01:12:24.159

Bobby Wilson: For PG&E, that's about 80% of projects. SCE, that's about 84%. And for SDG&E, about 72% of projects remain to be energized.

475

01:12:25.310 --> 01:12:41.729

Bobby Wilson: Finally, since we are not seeing load growth by utility at the system level, one issue we are wrestling with is when will the remaining known loads projects that are not energized show up as load, and how best to account for them in the two IEPR scenarios to inform procurement and local transmission planning.

476

01:12:42.140 --> 01:12:50.299

Bobby Wilson: Known loads does add considerable uncertainty to the IPR system level forecast, and this is especially true with regard to energization dates.

477

01:12:52.050 --> 01:12:53.680

Bobby Wilson: Okay, next slide, please.

478

01:12:55.540 --> 01:13:03.739

Bobby Wilson: Alright, so this is known loads data now. This slide shows the final cleaned and processed data received from PG&E for the 2025 IPR.

479

01:13:03.870 --> 01:13:12.169

Bobby Wilson: That's on the left-hand side, as well as the cleaned and processed data that was shared with the CC for the 2026 IPR in June of this year, on the right-hand side.

480

01:13:13.610 --> 01:13:23.969

Bobby Wilson: Before we talk about the actual data, what is shown here is the requested capacity and requested energization date by the customer as it appears in the data.

481

01:13:24.140 --> 01:13:31.079

Bobby Wilson: So, what this means, this data has been processed, it's been cleaned for the purpose of analysis, but not for forecasting.

482

01:13:31.540 --> 01:13:40.550

Bobby Wilson: So, as Cristy mentioned in her presentation, during the 2025 IPR, many adjustments were made for forecasting purposes, including the year of a project.

483

01:13:40.900 --> 01:13:47.160

Bobby Wilson: the year a project would be energized, as well as what sectors were included in the forecast, among other adjustments.

484

01:13:47.610 --> 01:13:55.790

Bobby Wilson: Similar adjustments will be made in this year's IPR, but that is not what is being presented here. This is simply an analysis of the clean data sets from the IOUs.

485

01:13:56.740 --> 01:14:00.249

Bobby Wilson: Now, moving on to the analysis of PG&E's known loads data.

486

01:14:00.430 --> 01:14:16.920

Bobby Wilson: Per the requested energization dates in the dataset for the 2025 IPR on the left-hand side of the screen, much of what was originally earmarked to be energized in 2025 appears to have been pushed to 2026 and this year's known loads dataset on the right-hand side of the screen.

487

01:14:17.240 --> 01:14:21.850

Bobby Wilson: The amount of projects by capacity scheduled to be energized after 2026

488

01:14:22.060 --> 01:14:25.180

Bobby Wilson: Remains relatively static across both datasets.

489

01:14:26.750 --> 01:14:44.339

Bobby Wilson: In order to get a better sense of the year-to-year progress of known Melodes projects, we did prepare an analysis of the projects in last year's dataset that were to be energized in 2025, and we will look at that analysis after an overview of known loads projects in SCE and SDG&E territory.

490

01:14:46.040 --> 01:14:47.250

Bobby Wilson: Next slide, please.

491

01:14:49.630 --> 01:14:58.909

Bobby Wilson: Okay, so just like on the last slide for PG&E, this is the final cleaned and processed data received from SCE for the 2025 IPR.

492

01:14:59.410 --> 01:15:04.710

Bobby Wilson: As well as the clean and process data that was shared for the 2026 IPR in June of this year.

493

01:15:05.140 --> 01:15:10.600

Bobby Wilson: Once again, what is shown here is requested capacity and requested energization date.

494

01:15:10.710 --> 01:15:13.739

Bobby Wilson: Adjustments for forecasting purposes are still pending.

495

01:15:14.770 --> 01:15:25.600

Bobby Wilson: there is negligible change in the requested energization dates as of June 20... Excuse me, there's negligible change in the requested energization dates between the two datasets.

496

01:15:25.780 --> 01:15:35.269

Bobby Wilson: Most of what was slated to be energized in the years 2025 through 2027 appears to have the same requested energization dates as of June 2026.

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01:15:36.300 --> 01:15:44.729

Bobby Wilson: And as previously mentioned, we have prepared an analysis of the systems with energization dates in 2025 from last year's dataset.

498

01:15:46.360 --> 01:15:47.570

Bobby Wilson: Next slide, please.

499

01:15:50.400 --> 01:15:53.389

Bobby Wilson: Finally, this... oh, back one, please.

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01:15:54.030 --> 01:16:06.780

Bobby Wilson: Thank you. Finally, this slide shows the clean and processed data from SDG&E for the 2025 IPR, as well as the cleaned and processed data that was shared with the CC for the 2026 IPR in June of this year.

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01:16:07.000 --> 01:16:20.559

Bobby Wilson: From our preliminary analysis, it appears that most of what was to be energized in 2025 has either been energized, has changed energization dates, or has been removed from the dataset because it was canceled, or for some other unknown reason.

502

01:16:21.610 --> 01:16:27.619

Bobby Wilson: The requested capacity for the years preceding 2026 has remained relatively static across both datasets.

503

01:16:29.300 --> 01:16:30.800

Bobby Wilson: Okay, next slide, please.

504

01:16:33.100 --> 01:16:36.510

Bobby Wilson: Alright, the next three slides all use the same methodology.

505

01:16:36.690 --> 01:16:48.179

Bobby Wilson: What we did here, we isolated the projects with an expected energization date of calendar year 2025 from the known loads dataset from last year that was used in the 2025 IPR.

506

01:16:48.680 --> 01:16:57.719

Bobby Wilson: We then matched those projects to the June 2026 dataset using a unique identifier that was provided by the IOUs for each project.

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01:16:58.530 --> 01:17:07.299

Bobby Wilson: We were able to match about 95% of the projects across all IOUs in the 2025 dataset to a project in the 2026 dataset.

508

01:17:09.590 --> 01:17:17.980

Bobby Wilson: For PG&E specifically, most projects from the 2025 dataset that had an expected energization date in calendar year 2025

509

01:17:18.110 --> 01:17:28.420

Bobby Wilson: are labeled as ongoing in the 2026 dataset. And that expected amortization date for the majority of those projects is now calendar year 2026.

510

01:17:29.420 --> 01:17:39.740

Bobby Wilson: Looking at the table on the right, we can see that 1,540 megawatts of capacity from last year's dataset is in this year's dataset, and is labeled as ongoing.

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01:17:40.270 --> 01:17:47.799

Bobby Wilson: Also in the table, we can see that there were some projects that were not matched, totaling about 290 megawatts worth of capacity.

512

01:17:48.390 --> 01:17:59.219

Bobby Wilson: And the table also shows an NA for cancellations. I did want to mention that this week, we received new data from PG&E with information about cancellations, so some of those,

513

01:17:59.440 --> 01:18:01.990

Bobby Wilson: Projects that are not matched.

514

01:18:02.520 --> 01:18:06.290

Bobby Wilson: It will probably turn out to be cancellations, but we have not performed that analysis yet.

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01:18:08.260 --> 01:18:14.520

Bobby Wilson: Next, we were able to match 70 megawatts of capacity from this year's completed projects with last year's dataset.

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01:18:14.670 --> 01:18:17.149

Bobby Wilson: That's also reflected on the chart in blue.

517

01:18:17.970 --> 01:18:25.939

Bobby Wilson: And lastly, we broke all this down by sector, as you can see on the x-axis. The residential and commercial sectors had the most completed capacity.

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01:18:26.070 --> 01:18:28.480

Bobby Wilson: Followed by transportation and industrial.

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01:18:28.990 --> 01:18:35.509

Bobby Wilson: Transportation was not included in last year's forecast, but we have kept it in here for the purpose of analyzing the data, as we mentioned earlier.

520

01:18:36.610 --> 01:18:37.790

Bobby Wilson: Next slide, please.

521

01:18:40.420 --> 01:18:49.939

Bobby Wilson: Okay, here we use the exact same methodology as we did for PG&E, matching projects from 2025 dataset to 2026 dataset, using unique identifiers.

522

01:18:50.140 --> 01:19:00.920

Bobby Wilson: Many of SCE's projects that were projected to be energized in 2025 remain in the 2026 dataset and are labeled as ongoing, totaling about 700 megawatts of capacity.

523

01:19:01.330 --> 01:19:10.110

Bobby Wilson: In the table, we can also see that in addition to the 46 megawatts of canceled projects, there were also some records for which we could not find matches.

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01:19:10.270 --> 01:19:12.510

Bobby Wilson: We're still investigating those discrepancies.

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01:19:12.620 --> 01:19:18.140

Bobby Wilson: The canceled projects are... the canceled projects are represented in green on the chart.

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01:19:20.400 --> 01:19:27.300

Bobby Wilson: Lastly, we were able to find 77 megawatts of completed projects in this year's dataset that match projects in last year's dataset.

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01:19:28.210 --> 01:19:36.920

Bobby Wilson: For the sector breakout, SCE commercial and industrial sectors had the most completed capacity, and the commercial sector had the majority of canceled projects.

528

01:19:38.100 --> 01:19:39.379

Bobby Wilson: Next slide, please.

529

01:19:42.630 --> 01:19:56.170

Bobby Wilson: We finished with a look at SDG&E. Most projects scheduled for energization in 2025 were completed by SDG&E. 75 megawatts out of 130 megawatts of known load... known loads projects.

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01:19:56.260 --> 01:20:03.550

Bobby Wilson: There are 45 megawatts of projects that were to be energized in 2025 that are labeled as ongoing in the 2026 dataset.

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01:20:04.210 --> 01:20:11.349

Bobby Wilson: Commercial and transportation sectors had the most completed capacity, while the industrial sector had the highest completion percentage.

532

01:20:12.520 --> 01:20:29.000

Bobby Wilson: There were 4 megawatts of canceled projects, and we were unable to match 6 megawatts of known loads projects in last year's dataset. Overall, however, there was a match between this year and last year's datasets for most of SDG&E's known load projects.

533

01:20:31.530 --> 01:20:34.950

Bobby Wilson: And that is my last slide, so I will hand it back to Cristy.

534

01:20:37.140 --> 01:20:53.989

Cristy Sanada: Yeah, thanks, Bobby. I might just shoot you a question right now from, that we have in the Q&A, because it does pertain to your analysis, so rather than waiting till the end of, the panel discussion. But Claire has a question on slide 3 of your presentation.

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01:20:54.160 --> 01:21:05.939

Cristy Sanada: So, does the 2025 IEPR data also show the Clean data set? I guess that's the dataset that was provided to us from the IOUs.

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01:21:06.120 --> 01:21:14.709

Cristy Sanada: And not what was ultimately included in the forecast. So if you can explain the difference between the data that you're using for this analysis versus what was in the forecast.

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01:21:15.280 --> 01:21:28.369

Bobby Wilson: Well, yeah, that's... that's exactly correct. So this data has been cleaned, but it is not what was included in the forecast. Notably, I mean, first and foremost, the model year was different when we actually used this, to,

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01:21:28.650 --> 01:21:33.549

Bobby Wilson: To do the forecast, because, much of what was supposed to be energized in 2025

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01:21:33.670 --> 01:21:45.750

Bobby Wilson: was not going to be energized in 2025, so the model year was changed. And then all transportation was taken out, and there were a couple of other adjustments applied. Mostly what was shown on the,

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01:21:46.880 --> 01:21:53.569

Bobby Wilson: the flowchart that Cristy shared earlier. But yeah, the two biggest things would have been the model year and, the sector.

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01:21:56.990 --> 01:22:04.099

Cristy Sanada: Yeah, so Claire, if you have any follow-ups, just feel free to add that to the chat, but wanted to get your ears out of the way before we start our panel discussion.

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01:22:04.100 --> 01:22:15.640

Vice Chair Siva Gunda: Yeah, Cristy, are you okay if I just have a quick question here before we jump into the panel? You know, first of all, you know, I just want to say, to the team, you know, and all the...

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01:22:15.640 --> 01:22:31.390

Vice Chair Siva Gunda: stakeholder conversations last year, including CAISO, everybody, leading to being a little bit more cautious about adding known loads to the system. Bobby, based on your analysis, appears to be a more prudent decision.

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01:22:31.520 --> 01:22:42.239

Vice Chair Siva Gunda: At the moment, given the uncertainty of them showing up in any specific year, would that be a safe takeaway for me to take here? I mean, like, we were talking about adding

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01:22:42.540 --> 01:22:50.129

Vice Chair Siva Gunda: close to 4,000 megawatts of... I mean, at the start of the conversation, about 4,000 megawatts of known loads to the system forecast.

546

01:22:50.150 --> 01:23:06.509

Vice Chair Siva Gunda: You know, and then later on in the year, as the forecasting cycle went and the conversations, we decided to add that just to the local reliability and not the system. And it appears that, based on your analysis, that that probably was a good, cautious move.

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01:23:09.610 --> 01:23:12.539

Bobby Wilson: Yeah, I mean, at the very least,

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01:23:12.730 --> 01:23:24.349

Bobby Wilson: the years have to be adjusted, so we have to be cautious about that, the energization dates. And then, yeah, speaking to the other parts, I think Cristy can... can add to it, but

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01:23:24.760 --> 01:23:37.459

Bobby Wilson: Yeah, at the very least, when we get the data, we have to be very careful about when it's going to be coming online, and how it'll be utilized, and at what rate it'll actually become energized. So,

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01:23:37.660 --> 01:23:41.700

Bobby Wilson: Yeah, we're still investigating historical trends to see how that all works.

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01:23:41.990 --> 01:23:43.560

Bobby Wilson: But, yeah.

552

01:23:44.070 --> 01:23:48.909

Vice Chair Siva Gunda: Yeah, Bobby, so can I make sure that I understand this? Like, you know, the data that we are getting today.

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01:23:49.030 --> 01:24:00.389

Vice Chair Siva Gunda: You know, let's say we get a data set from a colleague from PG&E today, and it says this project energization, and it's an energization date that we get.

554

01:24:00.630 --> 01:24:07.969

Vice Chair Siva Gunda: That is expected anodization date, or is it more of, like, application date? What kind of data do we receive in that data set?

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01:24:08.250 --> 01:24:12.800

Bobby Wilson: We are receiving what the customer is requesting the energization date to be.

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01:24:12.900 --> 01:24:28.729

Bobby Wilson: So that... it's, like, the rawest possible form, and yeah, considerations have to be taken into account before it can be used in any forecasting process. But yeah, what we're receiving is the customer, in the ideal scenario, would like the project to be energized at this state.

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01:24:29.420 --> 01:24:45.799

Vice Chair Siva Gunda: Right, so just kind of making sure that I take away very clearly, customer X says, I have a 100 megawatt project, and I would like the energization to be December 31st this year, right? And, you know, part of it is.

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01:24:45.840 --> 01:25:03.179

Vice Chair Siva Gunda: the feasibility of that, you know, from an IOU to make that happen, based on the current queue and stuff, so that's one important issue. But also that in some of these canceled projects, is it your view that the cancellations are happening because

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01:25:03.550 --> 01:25:13.599

Vice Chair Siva Gunda: you know, the project proponents have changed their mind, or are they like, you know, this is... the timeline doesn't work, so we're gonna drop off? Do you know any of the reasons why this gets canceled?

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01:25:14.130 --> 01:25:25.699

Bobby Wilson: I don't have any information on that, but we have IOU panelists that might be able to speak to that. But yeah, I just have more of the raw data of cancellations, not any reason for why they've been canceled.

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01:25:26.380 --> 01:25:43.540

Vice Chair Siva Gunda: Yeah, this is... this is super helpful, Bobby. I'm looking forward to the panel, and I see Commissioner McAllister came on screen as well. I think this is, this goes to the spirit of the previous conversation. We do not want to be, the inhibiting factor of creating

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01:25:43.760 --> 01:25:46.559

Vice Chair Siva Gunda: Planning that is proactive.

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01:25:46.850 --> 01:25:56.899

Vice Chair Siva Gunda: At the same time, you know, to your analysis, it's really important for us to ensure that that load actually shows up, because it has direct impacts on

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01:25:56.900 --> 01:26:07.800

Vice Chair Siva Gunda: downstream rate payers, right? Like, you know, because of the forecast and where it goes. So, really appreciate this analysis, and look forward to having the conversation with our colleagues from the utilities. So, Commissioner McAllister?

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01:26:07.800 --> 01:26:20.169

Commissioner Andrew McAllister: Yeah, thanks, Western Gunda. Bob, we really appreciate this, and all the integration work, and the collaboration with the IOUs, and their interpretation of all the data that you get in.

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01:26:20.170 --> 01:26:29.409

Commissioner Andrew McAllister: I guess, I'm wondering, sort of, what other data... so we're talking, obviously, most closely with the IOUs, they receive the application for interconnection, and...

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01:26:29.480 --> 01:26:33.170

Commissioner Andrew McAllister: you know, have that visibility.

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01:26:33.320 --> 01:26:52.139

Commissioner Andrew McAllister: And just the kind of... I mean, it's very logical, right, that sort of, okay, I want to interconnect, you know, December of this year. In many cases, right, the world being what it is, it gets complicated, and it gets pushed to the next year or the year after that, and sort of that makes sense, and along the way, some of them get canceled. I wonder if,

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01:26:52.520 --> 01:27:04.349

Commissioner Andrew McAllister: If there are other, data sources, you know, around, like, the other elements of a project like that, land use and permitting and site control and...

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01:27:04.450 --> 01:27:11.919

Commissioner Andrew McAllister: things like that, that maybe the local government, or particularly the CCA, might have, if there is a CCA in that region, in that area.

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01:27:11.920 --> 01:27:25.219

Commissioner Andrew McAllister: might have additional visibility on that we could sort of triangulate with to get ahead of some of those issues. And maybe... we talked a little bit about this last time, I think, or maybe in the follow-up to the last workshop.

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01:27:25.260 --> 01:27:37.600

Commissioner Andrew McAllister: But just wondering if there have been any kind of developments in terms of cultivating those other windows of visibility, around, you know, the potential projects that have applied to the utilities for interconnection.

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01:27:38.000 --> 01:27:41.550

Bobby Wilson: Well, I wasn't here for the last workshop, but I see Heidi is turning.

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01:27:41.550 --> 01:27:41.920

Commissioner Andrew McAllister: Oh, yeah.

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01:27:41.920 --> 01:27:43.140

Bobby Wilson: There you go?

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01:27:43.140 --> 01:27:43.970

Heidi Javanbahkt: Yeah, hey.

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01:27:43.970 --> 01:27:45.560

Bobby Wilson: on that, thank you.

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01:27:45.900 --> 01:28:02.539

Heidi Javanbahkt: Yeah, I was just gonna jump in and say this is a big topic for our data center panel this afternoon. We'll be talking about other types of data sources. I think just for now, with the no unloads,

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01:28:02.540 --> 01:28:03.320

Commissioner Andrew McAllister: More broadly.

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01:28:03.320 --> 01:28:14.250

Heidi Javanbahkt: there's smaller projects, there's a lot of them, like, thousands of them. Okay, okay. So, I think just depending on... I mean, you saw from Bobby's...

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01:28:14.530 --> 01:28:15.010

Commissioner Andrew McAllister: Just...

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01:28:15.010 --> 01:28:22.409

Heidi Javanbahkt: preliminary analyses that, there haven't been a whole lot that were energized last year.

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01:28:22.520 --> 01:28:28.130

Heidi Javanbahkt: So we're still discussing with stakeholders, and the IOUs on...

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01:28:28.300 --> 01:28:35.590

Heidi Javanbahkt: how to incorporate these into our forecast going forward. But I think...

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01:28:35.760 --> 01:28:46.529

Heidi Javanbahkt: It's gonna depend a lot on where we land on whether there are any incremental impacts to what we're already including in the forecast.

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01:28:46.530 --> 01:28:48.650

Commissioner Andrew McAllister: Yes, how much is somebody represented in just...

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01:28:48.650 --> 01:28:53.309

Heidi Javanbahkt: Yeah, like, whether or not we actually need to look for more data, like building permits, for example.

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01:28:53.310 --> 01:29:00.450

Commissioner Andrew McAllister: Yeah, and I guess there... maybe... maybe there should be, like, a cutoff of, sort of, interconnection size, or,

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01:29:00.900 --> 01:29:14.169

Commissioner Andrew McAllister: Yeah, sort of make the ones that actually could affect planning, or more likely affect planning, bubble up to the top for further investigation or something, like, you know, large production builds, or manufacturing facilities, or the like.

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01:29:14.650 --> 01:29:24.849

Commissioner Andrew McAllister: But, yeah, just any... just, trying to... trying to help understand what data sources are out there for some of these, production, or some of these developments.

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01:29:25.690 --> 01:29:43.749

Commissioner Andrew McAllister: So, yeah, appreciate that. Okay, yeah, so I was thinking about, sort of, large loads more than... more than the whole breadth of known loads, so... so that's my... my kind of, my mistake, but I, you know, I think the... to the extent we have that conversation for data centers, it might actually apply more broadly to some extent.

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01:29:45.190 --> 01:29:48.250

Commissioner Andrew McAllister: So, so great, yeah, thanks a lot, really appreciate that.

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01:29:48.430 --> 01:29:50.890

Commissioner Andrew McAllister: Thanks, Bobby, again, I'll let you get back to it.

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01:29:53.780 --> 01:29:57.110

Cristy Sanada: Alright, so I'm back now.

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01:29:57.250 --> 01:30:11.780

Cristy Sanada: Got booted for a second. But Bobby, I'm just gonna pull... so Claire had a follow-up question. Can you elaborate on what model year means, and can you speak to the 2X increase in node loads from 25 to 26 between the two data sets?

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01:30:13.330 --> 01:30:24.240

Bobby Wilson: Yes, so I can definitely speak to the second half of the question. So the two-time increase in known loads from 25 to 2026 between the two datasets, specifically for PG&E,

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01:30:24.400 --> 01:30:26.900

Bobby Wilson: Was all of that...

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01:30:27.270 --> 01:30:34.749

Bobby Wilson: load that wasn't energized, that was earmarked to be energized in 2025, essentially just got pushed to 2026.

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01:30:35.040 --> 01:30:44.190

Bobby Wilson: And like, instead of providing a different energization date, it was just, I think it's a placeholder labeled 2026.

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01:30:44.320 --> 01:30:46.380

Bobby Wilson: so...

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01:30:47.870 --> 01:30:54.720

Bobby Wilson: that's how that worked, and then the model year aspect of it is when they... when the IOUs,

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01:30:55.380 --> 01:31:12.109

Bobby Wilson: when the IOUs believe a project will eventually come online. So, when they give us the raw data, the energization date is given to us as what it is, 2025 or 2026, or if it's a placeholder because it's a project that was pushed to 2026, we just get that raw data requested date.

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01:31:12.240 --> 01:31:28.459

Bobby Wilson: And then the model year is more of when we actually... or when the IRUs actually determine that the project will come online. So, the data you're seeing... the double increase you're seeing is 2025 projects that were not energized, pushed to 2026, and then when a model year is determined for them for the forecasting process.

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01:31:28.600 --> 01:31:30.280

Bobby Wilson: They'll be spread out over.

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01:31:30.640 --> 01:31:32.460

Bobby Wilson: The forecasting window.

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01:31:33.470 --> 01:31:34.160

Cristy Sanada: Excellent.

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01:31:36.180 --> 01:31:47.750

Cristy Sanada: All right. Well, we'll have you hang tight until after the panel discussion, but we'll move on to just that now. So, if I can ask our IOU partners to come on video?

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01:31:48.090 --> 01:31:53.640

Cristy Sanada: We're gonna shift over to a panel discussion with IOU's

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01:31:53.770 --> 01:32:05.430

Cristy Sanada: And I'll start... so we have about until 3.15 for this discussion. I'm gonna have a series of questions for a panel, then we'll turn things over to our dais, and then the public for questions.

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01:32:06.000 --> 01:32:18.800

Cristy Sanada: But yeah, thanks, see all of you on. So, on our panel today, we have Mark Jimenez, who's a Senior Advising Distribution Planning Engineer from PG&E. We have Chris Ohlheiser, who's a Senior Engineering Manager with SCE.

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01:32:18.870 --> 01:32:24.710

Cristy Sanada: And Alberto Amparan Lozoya, who is an electric system and grid planning engineer from SDGE.

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01:32:24.720 --> 01:32:42.129

Cristy Sanada: So I just want to thank you all for taking the time to participate in this discussion today. I have a few questions for you all, but before I start, just to help frame this discussion, the goals of this panel really are to help further our understanding of known loads and how utilities are using this data today in your distribution planning.

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01:32:42.130 --> 01:32:48.469

Cristy Sanada: And then hear perspectives and insights from you all, on known load trends in your service territories.

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01:32:48.830 --> 01:33:06.690

Cristy Sanada: So, on to the first set of questions. Again, this is to help us understand known loads better, and how you're using known loads in your distribution planning processes. My first question is for SG&E, so just, if you can kick us off with an overview of what known load data represents for the utilities.

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01:33:06.690 --> 01:33:11.860

Cristy Sanada: How utilities collect this information, and how far out you typically receive known load data.

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01:33:13.240 --> 01:33:14.190

Alberto Amparan Lozoya: Hi, everyone.

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01:33:14.660 --> 01:33:24.830

Alberto Amparan Lozoya: For San Diego Gas and Electric, non-load data primarily comes from customer requests for new service or an expanded electrical demand.

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01:33:25.080 --> 01:33:29.940

Alberto Amparan Lozoya: Customers submit this request through our SGCNA application process.

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01:33:30.210 --> 01:33:36.500

Alberto Amparan Lozoya: And the information is collected and tracked by the appropriate customer-facing department at SG&E.

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01:33:37.320 --> 01:33:53.200

Alberto Amparan Lozoya: And, here at SG&E, we use this information to understand and plan for future customer needs at a specific location by identifying the feeder that is going to be providing electrical service to these loads.

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01:33:54.150 --> 01:34:01.960

Alberto Amparan Lozoya: No load information is continuously updated as new requests are received, and Project information evolves.

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01:34:02.390 --> 01:34:08.819

Alberto Amparan Lozoya: The highest volume of non-load requests is typically within the first 3 years of the forecast.

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01:34:09.060 --> 01:34:15.110

Alberto Amparan Lozoya: So, for the next forecast, it would be hu... Likely 2027, 2028, and 2029.

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01:34:17.010 --> 01:34:17.859

Alberto Amparan Lozoya: Thank you.

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01:34:18.830 --> 01:34:22.139

Cristy Sanada: Anything to add, Chris and Mark, to that?

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01:34:25.560 --> 01:34:26.290

Cristy Sanada: Right?

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01:34:26.290 --> 01:34:27.360

Mark Jimenez: Sound pretty good.

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01:34:27.360 --> 01:34:33.369

Cristy Sanada: Alright, so I'll move on. So, question for you, Mark, first, and then we'll go to Chris, and then to Alberto.

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01:34:33.720 --> 01:34:51.650

Cristy Sanada: So, can the IOUs provide just an overview of how you model known load data into your distribution planning processes? So, when are you assuming that customers will energize, and can you speak to any adjustments that you make in your modeling, so things like cancellation rates, ramp rates, etc?

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01:34:52.770 --> 01:35:03.160

Mark Jimenez: Sure, yeah, I'll take that, the last part of that question first. So we have an annual process where we go through all the known loads, we call them just new business loads, because they're applications for service, essentially.

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01:35:03.440 --> 01:35:17.360

Mark Jimenez: There's a scrubbing process. It kind of begins around this time of year, and it feeds into this CEC's second data request that they have in the fall, which is kind of an updated version to the data that you saw in the charts earlier.

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01:35:17.730 --> 01:35:25.380

Mark Jimenez: So the scrubbing process will go through and address cancellations, so particularly for the dataset you saw earlier, and the...

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01:35:25.540 --> 01:35:34.490

Mark Jimenez: the updated data coming, we know that there are some cancellations that are going to be in there that is going to come out, so... so that process is an annual process to true up the data.

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01:35:34.730 --> 01:35:36.740

Mark Jimenez: And throughout the year, they are coming in.

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01:35:37.040 --> 01:35:43.859

Mark Jimenez: And what happens is they flow in dynamically into our load modeling tools. We have a line section modeling tool, and we have a forecasting tool.

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01:35:43.960 --> 01:35:57.159

Mark Jimenez: And they are integrated with our application for service database. So as that data comes in, that data is reviewed, and it enters the model, and as we run our analysis, you know, loads are incrementally added.

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01:35:57.400 --> 01:36:06.879

Mark Jimenez: So once a year, we go through and identify all the projects needed. That's part of the G&A, reporting that, that just got released.

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01:36:07.000 --> 01:36:12.709

Mark Jimenez: That's part of our normal planning cycle. So there is, you know, in all the adjustments, there are...

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01:36:13.120 --> 01:36:21.609

Mark Jimenez: You know, D-rates applied, you know, fixes, updates, as best we can, too, based on the information provided by the customer.

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01:36:21.930 --> 01:36:40.009

Mark Jimenez: There is something, in... I think Kelstra brought up about the cutoff level. Having to... the quantity of known loads in our model is really an artifact of a ruling that required us to add all the loads to our model. So, prior to that ruling, loads above a certain threshold were only added to our model.

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01:36:40.020 --> 01:36:42.480

Mark Jimenez: But after that, since we have to have them all.

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01:36:42.590 --> 01:36:48.809

Mark Jimenez: You know, that's kind of a... attributing to the high counts that you see year over year, especially in the Gene Airport, you see the counts.

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01:36:49.090 --> 01:36:57.820

Mark Jimenez: So yeah, I think, generally we've discussed, you know, having a cutoff to model, and it probably wouldn't be too bad idea to,

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01:36:57.990 --> 01:37:00.750

Mark Jimenez: You know, identify some reasonable threshold.

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01:37:00.940 --> 01:37:06.060

Mark Jimenez: And so one example of one that would be... kind of,

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01:37:06.810 --> 01:37:10.279

Mark Jimenez: I guess, suspect is that if you were to...

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01:37:10.410 --> 01:37:23.910

Mark Jimenez: you know, I have a 100 amp panel at my house, and if I were just to go and install a 200A panel, that's 48kW, so a lot of times a customer might enter something like that as their demand. And so they actually are, you know, existing customer, they have some demand.

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01:37:24.090 --> 01:37:38.620

Mark Jimenez: So stuff like that just kind of flows through the system when you have to model all the applications for service, and we don't have the resources to, model every single one of them. So a lot of them might, at the lower level, we think, are, you know, could be excluded without a large impact.

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01:37:39.050 --> 01:37:41.669

Mark Jimenez: And that would account for, I don't know, maybe...

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01:37:42.180 --> 01:37:48.100

Mark Jimenez: 3%, really, of the total, but it certainly makes the dataset a little bit easier to manage, and I think that's...

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01:37:48.250 --> 01:37:52.220

Mark Jimenez: That will help, overall, people understand it, or process it better.

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01:37:56.710 --> 01:37:58.060

Mark Jimenez: Oh, you're on mute, Christy.

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01:37:58.390 --> 01:38:04.320

Cristy Sanada: Yeah, your assumptions on when customers will energize. Is that based on the request state? Is that how you're modeling it in your...

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01:38:04.320 --> 01:38:12.960

Mark Jimenez: The request date is a combination of two things. So, when a customer initially applies for service, the application itself has a request for service date.

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01:38:13.060 --> 01:38:31.950

Mark Jimenez: And that date comes into our system, like I was mentioning, dynamically through the integrated tools. And as we go and make changes to the Assumptions Connection, we can update that date. So, the date you see in the chart, 2026, is a combination of the customer requested dates plus those that we had to roll forward in our process, in our model.

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01:38:33.830 --> 01:38:36.369

Cristy Sanada: Anything to add, Chris?

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01:38:37.110 --> 01:38:42.960

Chris Ohlheiser: Yeah, so just a couple additional details on, how SEE handles the dates.

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01:38:43.050 --> 01:38:59.489

Chris Ohlheiser: We forecast, if we have a customer that's forecasting, say, maybe it's a large residential development that's requesting... that's going to be phased in over multiple years, or, even some residential agricultural customers that just have multi-year phase worth of loading.

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01:38:59.490 --> 01:39:14.740

Chris Ohlheiser: We do model the energization date as the date that we anticipate them first connecting to the system, which means that they could have an energization date of 2026, and then still... we would then still model potential growth from that project.

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01:39:14.740 --> 01:39:29.050

Chris Ohlheiser: in 27 and 28 as their load grows throughout the year. So we do phase the load through, throughout the actual life cycle of when we anticipate them to come on, with that first actual connection date as the energization.

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01:39:30.260 --> 01:39:39.339

Chris Ohlheiser: Yeah, and then also working through a little more of, the actual D... we also de-rate, customers,

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01:39:40.010 --> 01:39:46.010

Chris Ohlheiser: The... the requested amount of connection versus actually anticipated, norm...

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01:39:46.020 --> 01:40:02.590

Chris Ohlheiser: load we would expect under normal operating conditions. So that may be you have a large commercial facility that's going to come in that, you know, their request for energization is going to include, enough, like, a large enough panel to, say, serve all of their equipment, however, under normal conditions.

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01:40:02.590 --> 01:40:19.169

Chris Ohlheiser: they're only going to be utilizing a third of the floor, a third of the equipment at a time, so we will de-rate that to actually plan for, based upon customers' load schedules, what they actually intend to utilize under their normal operating conditions, even though

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01:40:19.170 --> 01:40:30.729

Chris Ohlheiser: Actually, for the connection-wise, we have to size equipment to meet their full demand. And the actual forecasting, for purposes of identifying our grid needs, we do de-rate, there as well.

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01:40:32.320 --> 01:40:34.509

Cristy Sanada: Great. And anything to add to Alberto?

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01:40:34.890 --> 01:40:45.399

Alberto Amparan Lozoya: Hi, yeah, for SG&E, as a general practice, SG&E, plans to, serve the full load requested by the customer, and we don't apply any

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01:40:45.500 --> 01:40:47.770

Alberto Amparan Lozoya: Cancellation Assumptions.

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01:40:48.070 --> 01:40:55.469

Alberto Amparan Lozoya: And all the refinements that are... that are done by SG&E are based on project-specific and...

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01:40:55.720 --> 01:40:58.570

Alberto Amparan Lozoya: Obtained through coordination with the customer.

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01:41:00.380 --> 01:41:01.040

Cristy Sanada: Okay.

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01:41:01.220 --> 01:41:05.150

Cristy Sanada: Thanks. I see Commissioner McAllister, did you want to jump in?

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01:41:05.150 --> 01:41:10.459

Commissioner Andrew McAllister: Yeah, so I probably should wait till the end, but it seems... I wanted to key off of something you said, Mark.

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01:41:10.650 --> 01:41:16.919

Commissioner Andrew McAllister: I'm wondering about PG&E's flexible connection kind of program,

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01:41:17.100 --> 01:41:23.309

Commissioner Andrew McAllister: And is... I don't think that's unique to data centers, so it was appropriate for this... this panel, but

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01:41:23.460 --> 01:41:34.389

Commissioner Andrew McAllister: Could you describe how that, or if that fits into this, kind of judgment of, of, you know, connection, you know, the demand from a given connection, and then growth over time?

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01:41:34.670 --> 01:41:39.040

Commissioner Andrew McAllister: And how that's how you... how PG&E is managing that part of planning?

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01:41:40.320 --> 01:41:48.759

Mark Jimenez: Yeah, fortunately, I just had a chance to talk to that team about how they're... they're doing it, so I just got refreshed on it. How that works is,

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01:41:49.160 --> 01:41:55.460

Mark Jimenez: You have application for service and, some sort of headroom analysis, and a 288 is

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01:41:55.590 --> 01:42:06.630

Mark Jimenez: kind of measured and sent and says, okay, here's the hours, 288, where there's capacity, and, you know, can you stay within this or not? And I think that,

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01:42:07.370 --> 01:42:13.860

Mark Jimenez: reflected, and I think that's more of a local... Agreement. There's no...

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01:42:14.040 --> 01:42:23.189

Mark Jimenez: really standardized way at this time to reflect that in the forecast. So, that's something that I think we kind of identified as...

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01:42:23.300 --> 01:42:30.229

Mark Jimenez: you know, an item that we need to look at to kind of have a standardized approach. So, basically, examples that...

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01:42:30.350 --> 01:42:38.489

Mark Jimenez: If you say that there's midnight capacity, and the customer signs agreement and says, I'm only going to use this at midnight, right, then you sort of want to

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01:42:38.720 --> 01:42:53.350

Mark Jimenez: have some custom shape for that, or some type of way to model that, right, so it doesn't show up as a, you know, excessive amount of energy based on shape. I don't really think there's a great way to do that, it's sort of a newer program, but I think that's where we would want to go

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01:42:53.570 --> 01:43:00.300

Mark Jimenez: So... just the identification, I think, of those customers that are in that program.

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01:43:00.380 --> 01:43:17.810

Mark Jimenez: I think is another item that, you know, that we would want to close the gap on in our forecast. So, some of these things, you know, when they're newer, they're separate, and as I'd mentioned, we have integrated processes, so it takes a little while to incorporate some of these things. But that's certainly, you know, some of our goals and objectives around that is, too.

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01:43:18.000 --> 01:43:28.919

Mark Jimenez: Have engineers and everybody able to understand who is, you know, in that program, and, you know, how they're going to operate, and kind of have a really great way to reflect that in a forecast.

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01:43:29.700 --> 01:43:45.929

Commissioner Andrew McAllister: Thanks for that. And is that, I mean, logically, maybe that's most urgent or most common when you have capacity limitations in the current, you know, in the feeder or, or, you know, under the substation, or is that a more generalized program at this point?

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01:43:45.930 --> 01:43:53.740

Mark Jimenez: I'm not aware of the count or how often it's required. You know, there is a lot of loads in the...

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01:43:54.040 --> 01:44:13.009

Mark Jimenez: I think in 2026, as you saw. But, you know, a lot of those simply just pass through, they kind of, you know, they're never... there's capacity, and they're not a

constrained issue, and so, they just kind of, are transitory to some extent. So, we don't have a grasp of how many people we have in the FlexConnect program.

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01:44:13.010 --> 01:44:15.689

Commissioner Andrew McAllister: Okay, great. Thanks a lot, Mark, and thanks, Cristy, for that.

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01:44:15.820 --> 01:44:18.220

Vice Chair Siva Gunda: plastic an eye? Yeah.

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01:44:18.900 --> 01:44:32.069

Vice Chair Siva Gunda: I'll try not to kind of jump in again, but Commissioner McAllister, thanks for flagging that. I really appreciate that question, and maybe I'll just add the spirit to the conversation as the panel proceeds.

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01:44:32.330 --> 01:44:38.720

Vice Chair Siva Gunda: I think there is, what I kind of want to make sure that

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01:44:38.880 --> 01:44:41.890

Vice Chair Siva Gunda: You know, we're all tasked with making sure

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01:44:42.060 --> 01:44:47.629

Vice Chair Siva Gunda: the demand is well supported, the electrification is well supported, and I think we're all aligned on that.

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01:44:47.700 --> 01:45:07.259

Vice Chair Siva Gunda: And we're all aligned on future-proofing the investments in a way that, you know, whether it's through the flexible connection framework, whatever it might be the framework, to ensure that future-proofing does not come at the expense of speculative projects or any other stuff, right? So I think we're all talking about that.

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01:45:07.450 --> 01:45:13.329

Vice Chair Siva Gunda: The piece I would really like us to kind of think through in the ref... in kind of... this is...

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01:45:14.030 --> 01:45:16.049

Vice Chair Siva Gunda: Given the affordability.

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01:45:16.160 --> 01:45:28.700

Vice Chair Siva Gunda: You know, issues that we're facing, and given the importance of not waiting for too long to bring the distribution upgrades to the table, you know, before the loads show up.

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01:45:28.970 --> 01:45:29.760

Vice Chair Siva Gunda: You know...

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01:45:30.160 --> 01:45:37.520

Vice Chair Siva Gunda: I would like us to think about, like, what... how do we think about this data, and how do we put this into the forecast in a meaningful way?

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01:45:37.850 --> 01:45:39.819

Vice Chair Siva Gunda: You know, so, you know.

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01:45:40.240 --> 01:45:56.119

Vice Chair Siva Gunda: really do not want to over, correct the forecast, especially given that it's at the system, and now we have a bottom-up analysis, we're trying to meet at the bus bar level, and so I really want to make sure we... we have...

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01:45:56.240 --> 01:46:14.769

Vice Chair Siva Gunda: at least the CC and our agency, as we develop the forecast, has clear guidance and, you know, kind of line of sight to what is that minimum... I shouldn't say minimum... what is the prudent level of these loads baked into the forecast? So, I think there is a lot of

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01:46:14.990 --> 01:46:17.780

Vice Chair Siva Gunda: Delta between...

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01:46:17.990 --> 01:46:30.120

Vice Chair Siva Gunda: each of the process, and I feel like the gaps between the process and misalignment within the process could over and under-build the forecast sometimes, and I just wanted to flag that as we continue this conversation.

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01:46:32.160 --> 01:46:32.800

Cristy Sanada: Thanks.

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01:46:34.080 --> 01:46:38.170

Cristy Sanada: Yes, we've been having a lot of conversations with the IOUs, and...

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01:46:38.170 --> 01:46:48.729

Vice Chair Siva Gunda: I don't know, Mark, if you have any quick response, or you want to just integrate that into the... or Chris, or about the... please feel free to chime in. If not, we can continue that conversation towards the end of the panel.

712

01:46:51.450 --> 01:46:57.180

Mark Jimenez: Yeah, I mean, it is a tough challenge. I think it was asked earlier, and it's a difficult question,

713

01:46:57.460 --> 01:47:03.430

Mark Jimenez: The question is, really, You know, how much risk, should the utilities really take

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01:47:03.700 --> 01:47:16.600

Mark Jimenez: Right? If we estimate a load at 50%, and then it's not, right? Then you could run into a safety issue. So, you know, we... you really have to really talk about... add one thing into there, right? Capacity, affordability, and safety.

715

01:47:16.720 --> 01:47:18.600

Mark Jimenez: And when you're looking at safety.

716

01:47:18.840 --> 01:47:28.010

Mark Jimenez: You know, you need to install the right amount of facilities, and I think that's what capacity planning is about, really. It's about the safety of the system, and if you don't have a safe system.

717

01:47:28.300 --> 01:47:33.929

Mark Jimenez: Right? It could be affordable, but you're gonna have more catastrophes, and then that... that doesn't save you any money as it is, so...

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01:47:34.200 --> 01:47:38.829

Mark Jimenez: So safety kind of needs to be at the core of it, and, you know, that's really kind of a...

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01:47:38.970 --> 01:47:42.720

Mark Jimenez: Guiding principle, kind of like, you know, how we try to build things.

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01:47:44.250 --> 01:47:48.359

Mark Jimenez: So, a safe, reliable system is sort of the target for PG&E.

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01:47:48.910 --> 01:47:53.850

Vice Chair Siva Gunda: Sounds good. Thank you, Ark. Pass back to you, Cristy. Sorry, keep interrupting.

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01:47:53.850 --> 01:47:54.960

Cristy Sanada: It's all good.

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01:47:55.220 --> 01:48:14.849

Cristy Sanada: I did have a tail onto our second question, related to the timeline for energization and how you're... what you're modeling in your distribution planning, but can you talk a little bit about, like, the roll forward? It looks like, you know, from our data, that the roll forward is just rolling a year forward, and that's how it's showing up to us.

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01:48:14.890 --> 01:48:31.620

Cristy Sanada: But are there... are there any nuances to that, or, I guess, kind of future considerations to maybe step... step that load in, or consider maybe what upgrades the load is behind to get a better, sense of the timing of when that load would... will actually, energize?

725

01:48:35.950 --> 01:48:36.860

Chris Ohlheiser: Yeah, so I think...

726

01:48:36.860 --> 01:48:38.200

Mark Jimenez: Go ahead, Chris.

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01:48:38.200 --> 01:48:48.399

Chris Ohlheiser: Yeah, so I think, you know, I know we've been continuing our partnership here on, on, helping provide these known loads and, like, what data's,

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01:48:48.710 --> 01:48:52.030

Chris Ohlheiser: The more, kind of, prudent data to provide.

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01:48:52.360 --> 01:48:59.469

Chris Ohlheiser: we don't just, you know, oh, we didn't energize this year, therefore we're going to roll forward to the next year. There is a detailed analysis done

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01:48:59.470 --> 01:49:20.280

Chris Ohlheiser: For SE, it's around the same timing that PG&E, because there's... it's gonna start here in the next couple months, where we're going to go through, review all these known loads, look at... that's where we look at, you know, have we heard from the customer in the last year? Are they likely gonna cancel? We do the detailed review to determine what year we should roll the load into, but again.

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01:49:20.500 --> 01:49:25.459

Chris Ohlheiser: You know, for the purposes of our planning, We are including

732

01:49:25.640 --> 01:49:41.490

Chris Ohlheiser: that sort of adjusted, customer request date. And for that, we're really adjusting it based upon customer... the customer's construction feasibility, not necessarily our feasibility to be able to construct,

733

01:49:41.880 --> 01:49:53.339

Chris Ohlheiser: a solution that would be able to meet the need, but, you know, if a customer comes and says, hey, I'm going to build, you know, 2,000 homes by the end of the year, we're probably going to adjust that, because that's not

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01:49:53.400 --> 01:49:57.799

Chris Ohlheiser: really feasible to build. So, we will adjust there, but we do...

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01:49:57.860 --> 01:50:12.679

Chris Ohlheiser: within our forecast include that customer date, to really show the need, so that when we're looking through our upgrades that we need to make to the distribution system, it sort of gives us... it helps inform our prioritization.

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01:50:12.680 --> 01:50:24.699

Chris Ohlheiser: Based upon what customers are ready to go now versus what customers are, you know, ready to go in 2027, 2028, to help really, try to

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01:50:25.770 --> 01:50:27.910

Chris Ohlheiser: Drive... being able to energize

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01:50:28.330 --> 01:50:36.979

Chris Ohlheiser: Being able to really reduce that time to energization for our customers, and really try to improve that connection.

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01:50:36.980 --> 01:50:37.670

Cristy Sanada: Yeah.

740

01:50:38.240 --> 01:50:49.750

Chris Ohlheiser: So, but we do have the... I think, what we're starting to develop is that final, like, actual... if there are other, limitations, other potential,

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01:50:50.180 --> 01:51:05.730

Chris Ohlheiser: delays, that we might have a separate date that is closer along the line of when they actually may energize. We are starting to collect that data as well, which could be something that we can try to figure out.

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01:51:05.930 --> 01:51:09.710

Chris Ohlheiser: How to report that and really help, find those differences.

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01:51:12.480 --> 01:51:14.720

Cristy Sanada: Anything to add, Mark Alberto?

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01:51:14.840 --> 01:51:16.729

Cristy Sanada: I can move this along if not.

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01:51:17.210 --> 01:51:31.690

Mark Jimenez: Sure, I'll add just a couple things. So, funding is kind of what people see, I think, on our end, capacity project funding. If you're an engineer, and you have an area, you know, you're competing against 50 other areas, right? You're really trying to

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01:51:31.820 --> 01:51:51.100

Mark Jimenez: obtain the funding so your area can improve, right? So funding, clearly, a limit on how much we're, able to connect, but I think even if you had unlimited funds, it doesn't solve everything, because there's other limits, like construction resource materials, so... so all these things, I think, play into the backlog. You know, the...

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01:51:51.270 --> 01:51:54.309

Mark Jimenez: Kind of like the observation that there is a backlog, and...

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01:51:54.480 --> 01:51:58.430

Mark Jimenez: You know, I think it's, you know, kind of an entry question of, like, how long?

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01:51:58.700 --> 01:52:05.240

Mark Jimenez: is that backlog in years, right? And I think that kind of translates into, well, how long would I expect

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01:52:05.450 --> 01:52:08.050

Mark Jimenez: You know, how long would I expect that to...

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01:52:08.210 --> 01:52:17.820

Mark Jimenez: you know, flatten out into IEPR, right? Is that 10 years of backlog? Is it 5 years? Is it 2 years? So I think it's a question that's not really fully

752

01:52:18.170 --> 01:52:22.070

Mark Jimenez: understood at this point right now. I think we're just kind of seeing the observation.

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01:52:22.380 --> 01:52:27.960

Mark Jimenez: You know, that in our model, you know, in a similar way as you guys are, it's a new circumstance.

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01:52:28.370 --> 01:52:43.729

Mark Jimenez: And I think we gotta go back and take a look at it and try to understand what that projection is. And I think that's, you know, we intend to work with CC, you know, to kind of share our views on that and have that reflected in, you know, a longer-term forecast as best as possible.

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01:52:45.320 --> 01:52:46.350

Cristy Sanada: Thanks, Mark.

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01:52:47.450 --> 01:53:01.239

Cristy Sanada: So my next question, so I'm gonna go to Mark again first, and then we'll go to SC and SG&E, but is there anything that you can call out that might be unique about distribution planning that just might naturally lead to differences between

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01:53:01.240 --> 01:53:07.709

Cristy Sanada: the forecasts are the numbers that you're working with, and maybe the level of the system that CC's looking at.

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01:53:07.840 --> 01:53:22.840

Cristy Sanada: So, you know, things like considering diversity as you move up the system, is there anything that, you know, kind of fits within that layer between distribution and the system forecast that we're looking at that should be considered?

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01:53:24.030 --> 01:53:28.739

Mark Jimenez: Yeah, I think there's a lot of differences in these forecasts, and... You know, it...

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01:53:29.220 --> 01:53:34.750

Mark Jimenez: Kind of my observation has been that many of the forecasts for different things, they have their own purpose, and so they've...

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01:53:34.810 --> 01:53:50.140

Mark Jimenez: developed, you know, kind of independently, and they work for their purpose, right? But I think if you want to try to create some... the funny thing is, is it's all the same system, right? And it's not a different system, right? It is exactly the same

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01:53:50.780 --> 01:53:56.829

Mark Jimenez: metal that's out there, it's the exact same people, and it's everything they use, right? So it's not the same... a different system.

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01:53:56.980 --> 01:53:59.689

Mark Jimenez: So you would think that it's kind of easy to...

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01:53:59.940 --> 01:54:12.139

Mark Jimenez: you know, that you could figure out, you know, how do these things relate, but it's not that easy, and it's because I think there's a ton of variables in there that are kind of contradictory, right?

765

01:54:12.350 --> 01:54:26.389

Mark Jimenez: So, like, some things that, you know, when you're doing a sales forecast, well, how much energy? I think that's a lot different than how much capacity you need to serve, right? That's like a dollar spend forecast, because I need to go build stuff to connect people. So some of these things,

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01:54:26.790 --> 01:54:32.349

Mark Jimenez: You know, they are kind of living together, but they are kind of in different trajectories.

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01:54:32.750 --> 01:54:34.219

Mark Jimenez: And so...

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01:54:34.420 --> 01:54:52.380

Mark Jimenez: You know, basically, though, the forecast itself is kind of like some different components, so there's the base, right? We all have a base forecast. Every single one of these forecasts is a base, right? And we could disagree on what the base is, based on weather normalization or whatever. There's the known loads, how we apply them, where we all apply them a little bit different, right? This can be a difference there.

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01:54:52.480 --> 01:55:09.929

Mark Jimenez: where you place the DER and how you compute it, I think, you know, we all could have a different viewpoint there. And then one thing that I don't think any other forecast really considers is, you know, how distribution would, projects would transfer the loads, so... so really, there's a lot of places, so those are four areas.

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01:55:10.090 --> 01:55:20.789

Mark Jimenez: Where you could have a difference, and if you had 3 numbers, and you tried to figure out, well, why are these 3 numbers different, right? You're really trying to figure out, like, where are they different in these areas?

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01:55:21.000 --> 01:55:28.809

Mark Jimenez: To isolate the things that are different between them. So, it is challenging, because of the complexity, you know, because of these different areas.

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01:55:31.150 --> 01:55:40.059

Cristy Sanada: Yeah, and that's what I was, yeah, curious about, was, is this conversation relevant beyond known loads? I, you know, this is one... Absolutely. ...one data point.

773

01:55:40.060 --> 01:55:40.500

Mark Jimenez: Yep.

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01:55:40.500 --> 01:55:54.790

Cristy Sanada: But are there other, factors here? Like you mentioned, DER locations, and load transfers, and a number of other things that we should be, you know, coordinating on to actually do a translation between our forecasts?

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01:55:54.960 --> 01:55:57.650

Mark Jimenez: Most of the load is... in the forecast is in the base.

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01:55:57.800 --> 01:55:59.090

Mark Jimenez: Right, the starting point.

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01:55:59.360 --> 01:56:02.630

Mark Jimenez: That's... for PG&E, that's 20,000-something megawatts.

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01:56:03.040 --> 01:56:05.489

Mark Jimenez: And then, you know, you start from there, so...

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01:56:06.070 --> 01:56:13.199

Mark Jimenez: You know, there's a lot happening in the base, and I don't know if we're giving it... if we're not really comparing that starting point.

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01:56:13.660 --> 01:56:22.849

Mark Jimenez: you're replacing it, you know, so if your base is off by 10%, right, that's 2,000 megawatts for us. So, when known loads are 4,000 megawatts and your base is off by 2,000 megawatts.

781

01:56:23.010 --> 01:56:26.859

Mark Jimenez: Right? That can kind of... Begin to overwhelm that,

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01:56:27.300 --> 01:56:34.869

Mark Jimenez: the known loads. So, I think known loads are an important part of the forecast, because they represent customers that are connecting

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01:56:35.120 --> 01:56:45.910

Mark Jimenez: But some of the other things, you know, are... seem to be offsetting some of the known load growth, so I think I kind of had her comment that, like, yeah, the known loads don't appear to be adding growth.

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01:56:46.140 --> 01:56:56.700

Mark Jimenez: Well, I don't know if that's a real logical argument, because they're connecting, you know, these are new connections, so they are adding growth, but the question is really, you know, what would make it look like

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01:56:56.790 --> 01:57:07.500

Mark Jimenez: they're not adding growth, and I think that's another element of the forecast that really has to be looked at, right? That maybe is not operating how we expected that we would want to be... that we would want to refine, right?

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01:57:10.020 --> 01:57:12.600

Cristy Sanada: Thanks, Mark. Yeah, anything to add, Chris?

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01:57:13.290 --> 01:57:25.810

Chris Ohlheiser: Yeah, I think one of the... I think another big piece of it, right, is... and goes to that last point Mark just made, it's the granularity of what we're looking at for these known loads versus, you know, the higher level,

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01:57:26.080 --> 01:57:45.229

Chris Ohlheiser: Forecast that's coming out. Different level... different assumptions should be made, right? If we have... every single one of these known loads is an actual application for service. Someone has come to us and said, we want to... we want to connect this load, and, you know, we want to energize,

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01:57:45.460 --> 01:57:50.530

Chris Ohlheiser: their facility. So... We have an obligation to try to serve that.

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01:57:50.580 --> 01:58:03.860

Chris Ohlheiser: Now, we may know, we may be able to look at historics and say, hey, historically, X percentage of these projects are going to cancel, but we can't not plan for a project because, you know, in the past, 1 out of 10.

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01:58:03.860 --> 01:58:11.270

Chris Ohlheiser: maybe just, you know, may not materialize. And on the other piece... other side of that, too,

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01:58:11.270 --> 01:58:25.560

Chris Ohlheiser: we're not going to reduce the load because they're also at the cancellation rate, because that doesn't make sense. If they still... if they're going to connect, they're going to connect at what they're requesting, not a reduced amount because of what the larger sector of load does.

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01:58:25.560 --> 01:58:34.420

Chris Ohlheiser: But that could... that's a different assumption as you start to aggregate the load up to a higher level, where now, if you do have 10 of these projects all,

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01:58:34.560 --> 01:58:47.149

Chris Ohlheiser: combining together to make a single change to the load, you could account for just 90% of that total load, because odds are one of those 10 will drop out, and you're not trying to specifically plan for that one.

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01:58:47.220 --> 01:59:03.499

Chris Ohlheiser: And so I think that granularity of what we're looking at versus the higher level, system forecast makes a difference. That sales forecast also takes into account you may see reduction of loads, because maybe you have

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01:59:04.700 --> 01:59:13.739

Chris Ohlheiser: customers leaving the service territory or moving from one section of the service territory to another. Locally, that new connection site

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01:59:13.740 --> 01:59:29.359

Chris Ohlheiser: is an increase of load there, but maybe at the higher system level, you see the decrease somewhere else, so there's no net change. And it doesn't have to be the same customer. You could just have a localized area where load is being reduced because of,

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01:59:30.350 --> 01:59:47.349

Chris Ohlheiser: just customers leaving, it could be maybe, increased DER, so they're offsetting their load versus other areas. They're increasing, faster than offsetting, and so overall, you still see a zero net change at the system.

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01:59:49.340 --> 01:59:50.320

Cristy Sanada: Thanks, Chris.

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01:59:51.170 --> 01:59:52.729

Cristy Sanada: I forgot anything, Ted.

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01:59:52.990 --> 02:00:05.759

Alberto Amparan Lozoya: Yeah, one thing to add is that, for the purpose of forecasting, both of the different, scenarios serve a different purpose. For example, the distribution planning process.

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02:00:06.080 --> 02:00:15.979

Alberto Amparan Lozoya: Starts with a historical loading of each of the feeders and buses, and all known loads at that time, are reflected.

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02:00:16.400 --> 02:00:31.610

Alberto Amparan Lozoya: Whereas the CC and the system Forecast is just one value, so that's an important difference and distinction between having all the historical loading for all the feeders and buses.

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02:00:31.880 --> 02:00:33.740

Alberto Amparan Lozoya: And just that to add...

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02:00:34.680 --> 02:00:36.090

Cristy Sanada: Yeah, thanks, Alberto.

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02:00:36.680 --> 02:00:44.569

Cristy Sanada: I'll move us to our second set of questions. So these are about known load energization and trends that you all might be seeing in your service territories.

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02:00:44.760 --> 02:00:56.880

Cristy Sanada: So I'll go around to PG&E, SCE, and SG&E again, but can you provide any insights into the volume and the pace of known load energization in recent years, and how that might compare to prior years?

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02:00:56.950 --> 02:01:15.150

Cristy Sanada: And then I think an element here, too, and Chris, you touched on that, is it possible that even though there are low energizations, there is no net impact on the

system? So if you can speak to any trends that you might be aware of, and then that second piece, why we might not be seeing growth at the system level.

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02:01:15.330 --> 02:01:19.380

Cristy Sanada: I appreciate your insight. So, I'll go to Mark first, and then Chris and Alberta.

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02:01:19.900 --> 02:01:29.620

Mark Jimenez: Yeah, the last part of that, I think we were touching on that last question, that there's underlying things at the system level that, you know, that are compensating, and, you know, it's pretty... pretty hard to...

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02:01:29.830 --> 02:01:38.710

Mark Jimenez: I kind of not acknowledge that, because, you know, we know known loads are connecting every year, and we are... we do have some level of successful connection, right?

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02:01:39.030 --> 02:01:43.399

Mark Jimenez: As far as the rate, our numbers are...

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02:01:43.530 --> 02:01:48.900

Mark Jimenez: Kind of trending up in the last 3 cycles because of the change in having to model all the loads.

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02:01:49.060 --> 02:01:59.319

Mark Jimenez: So, we're still looking for a stabilization of, count of loads that are just in the system at one time. So, right now, I think it's, like, 25,000 applications.

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02:01:59.670 --> 02:02:03.210

Mark Jimenez: So for now, you know, those numbers are increasing.

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02:02:03.500 --> 02:02:11.230

Mark Jimenez: And much like a recession, like, you really can't tell if you hit the peak or, you know, you're in it till it's already over.

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02:02:11.350 --> 02:02:22.650

Mark Jimenez: We really need to kind of see the numbers go down and, you know, take our next, measurement point and our next cycle to kind of see if that number stabilizes or begins to decline, but...

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02:02:22.680 --> 02:02:33.060

Mark Jimenez: Generally, you know, economic factors are things that affect growth, but, you know, we're not immune to, you know, growth trends, so...

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02:02:33.180 --> 02:02:49.150

Mark Jimenez: those things are likely, you know, will be reflected at some point in time in cancellations or less overall applications. I think this last cycle, the numbers you have, the G&A, they're not going to say that. I think those numbers are going to say that,

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02:02:49.150 --> 02:03:00.620

Mark Jimenez: you know, things are still going up, but the next cycle, I think, is really gonna be the tell, because I think we do have a few more cancellations than we thought, and I think we provided that data to the CC.

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02:03:00.800 --> 02:03:04.949

Mark Jimenez: And... Perhaps, you know, that is the beginning of this...

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02:03:05.150 --> 02:03:15.729

Mark Jimenez: you know, the realization of the trend, downwards. I don't think it's... I agree, kind of, with the Moody analysis that, you know, it's not a huge decline at this stage.

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02:03:15.840 --> 02:03:17.910

Mark Jimenez: So, I don't see anything to suggest that.

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02:03:18.200 --> 02:03:23.419

Mark Jimenez: But, you know, I think even for us, you know, given we have a backlog of stabilization, it would be a good thing.

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02:03:25.380 --> 02:03:26.570

Cristy Sanada: Thanks, Mark. Chris.

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02:03:29.450 --> 02:03:35.199

Chris Ohlheiser: Yeah, so we're also still seeing an increase to our energization requests come through,

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02:03:35.850 --> 02:03:43.759

Chris Ohlheiser: And for a lot of the same things that Mark pointed out, very, very similar,

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02:03:44.210 --> 02:03:57.939

Chris Ohlheiser: stuff in our territory as well. One of the other pieces that's, I think, an interesting dynamic when we talk about changes at the distribution level that may not impact the system level.

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02:03:58.110 --> 02:04:04.720

Chris Ohlheiser: It's in a lot of our transportation electrification work. What we're seeing is a lot of

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02:04:04.750 --> 02:04:22.350

Chris Ohlheiser: when we were... a lot of our light-duty known projects, light-duty vehicle, I should say, known projects, are all charging stations, right? So it's not necessarily the addition of the vehicles on the road that's going to impact the residential,

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02:04:22.350 --> 02:04:26.920

Chris Ohlheiser: Loading, but actually the charging stations where folks are gonna charge their vehicles, so...

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02:04:26.990 --> 02:04:38.849

Chris Ohlheiser: Whereas the IEPR Forecast is based upon vehicle count, which makes sense, right? Because it doesn't matter where the vehicle's at within the system, it's still going to use an existing amount of energy.

833

02:04:39.130 --> 02:04:52.610

Chris Ohlheiser: It very much makes a difference to us that if someone drives to work, charges at work, then drives home, and tops off when they get home, that vehicle's now impacting two completely different parts of our system, two different circuits, potentially even two different

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02:04:54.140 --> 02:05:05.720

Chris Ohlheiser: substations. So, that's another one where we're seeing a high amount of new demand locally to try to serve these new stations that,

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02:05:06.190 --> 02:05:17.180

Chris Ohlheiser: at the higher, like, system level, we're not seeing a big change in the overall energy use, because we still have the same... still forecasting the same number of cars to hit the road.

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02:05:20.380 --> 02:05:22.759

Cristy Sanada: Yeah, thanks, Chris and Alberto.

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02:05:22.760 --> 02:05:33.999

Alberto Amparan Lozoya: Yeah. For SG&E in general, we're also seeing an increase in the volume of energy session for the same reasons as the other out here, so nothing more to add on this.

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02:05:36.160 --> 02:05:39.570

Cristy Sanada: Great. So my last question, so...

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02:05:39.850 --> 02:05:43.520

Cristy Sanada: You know, we have a short history of known load data, and so...

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02:05:43.820 --> 02:05:48.809

Cristy Sanada: To the extent that the history of data that we do have is not a good indicator of the future.

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02:05:48.930 --> 02:06:00.340

Cristy Sanada: Are IOUs expecting any accelerated rate of known load energization in 2026 or 27, or can you give us any prognosis into 26-27 that you might be aware of?

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02:06:03.200 --> 02:06:06.460

Mark Jimenez: I don't have those specific numbers,

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02:06:07.160 --> 02:06:21.650

Mark Jimenez: So I really can't comment on that. I think we did request more capacity or capital funding to try to complete more work. And like I said, you know, funds are not the only limiting factor to completing work. There's, you know, competing

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02:06:22.020 --> 02:06:29.379

Mark Jimenez: you know, priorities for compliance, stuff like that, so... but I don't have a specific number, but I think, generally, we... we are trying to ramp up our ability to connect, so...

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02:06:29.620 --> 02:06:32.680

Mark Jimenez: you know, I think we... I don't know if we'll hit...

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02:06:33.020 --> 02:06:43.289

Mark Jimenez: you know, 50% of that number, or, you know, how we're gonna get, but, I think, our connections rate is not gonna go down, because I think we're putting more effort into it.

847

02:06:43.770 --> 02:06:46.940

Mark Jimenez: So, I think stable to slightly higher would be my...

848

02:06:47.230 --> 02:06:50.770

Mark Jimenez: my expectation based on, you know, overall what I see here.

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02:06:52.100 --> 02:06:53.070

Cristy Sanada: Thanks, Mark.

850

02:06:53.380 --> 02:06:54.080

Cristy Sanada: Chris?

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02:06:54.500 --> 02:07:07.130

Chris Ohlheiser: Yeah, I would anticipate the same. I would anticipate our ability to energize our backlogs. Our goal is to increase that rate, doing the same things we're looking at. How do we...

852

02:07:07.350 --> 02:07:24.979

Chris Ohlheiser: you know, reduce that time to energization where the customers are waiting for our ability to serve. Are there adjustments we can make to the process? Are there additional solutions, faster solutions that we can implement with that goal of

853

02:07:25.260 --> 02:07:29.620

Chris Ohlheiser: Reducing this backlog and getting Customers connected.

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02:07:31.080 --> 02:07:31.940

Cristy Sanada: Thanks, Chris.

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02:07:32.610 --> 02:07:33.470

Cristy Sanada: Alberto?

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02:07:33.470 --> 02:07:46.630

Alberto Amparan Lozoya: And for SG&E, the place and the timing of energization ultimately depends on the customer. We continue to work directly with the customer to, see the best date for energization is for them.

857

02:07:48.570 --> 02:08:00.620

Cristy Sanada: All right, well, thank you all for comparing my questions, but, I know we had some dais pop in during the panel, but I'm going to turn it back to the dais right now for any additional questions.

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02:08:00.720 --> 02:08:03.570

Cristy Sanada: So, Vice Chair and Commissioner McAllister.

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02:08:04.100 --> 02:08:08.559

Vice Chair Siva Gunda: Yeah, thank you, Cristy. Really helpful conversation.

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02:08:08.790 --> 02:08:15.479

Vice Chair Siva Gunda: Kind of have, like, a few thematical questions, you know, just kind of making sure,

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02:08:15.680 --> 02:08:26.240

Vice Chair Siva Gunda: you know, Mark, from PG&E perspective, maybe I'll just kind of, like, provide all the questions in one tranche. So just from PG&E side, you know, it sounds like the, challenges kind of...

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02:08:26.610 --> 02:08:37.490

Vice Chair Siva Gunda: precisely comparing distribution planning forecasts, and the CC's kind of IEPR forecasts. There, like, it seems to be a challenge there, you know, so that...

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02:08:37.780 --> 02:08:46.620

Vice Chair Siva Gunda: Question is, does PG&E kind of project-specific data up to larger planning areas on the distribution system?

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02:08:46.770 --> 02:08:49.539

Vice Chair Siva Gunda: How do we...

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02:08:49.770 --> 02:09:01.050

Vice Chair Siva Gunda: Can you speak to the experiences of PG&E, you know, in that context, right? So, which is, how do you roll project-specific data up to the large and planning areas for, you know, the way PG&E approaches that?

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02:09:01.350 --> 02:09:10.810

Vice Chair Siva Gunda: And what kind of information on the distribution system is critical to consider at a system level, and what can the granular,

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02:09:11.580 --> 02:09:14.290

Vice Chair Siva Gunda: locational information,

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02:09:14.590 --> 02:09:25.369

Vice Chair Siva Gunda: you know, depart from that system-level forecast, like this segmentation. So just, what is your philosophy, what is PG&E's philosophy in aggregating that? Hear very loud and clear that you're thinking about

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02:09:25.510 --> 02:09:40.140

Vice Chair Siva Gunda: operations, safety, reliability as a distribution planner, and I think that's primely a focus. So that's kind of, like, Mark, one theme of the question maybe PG&E can address. It's similar for SG&E and SCE, but just kind of...

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02:09:40.150 --> 02:09:48.069

Vice Chair Siva Gunda: In terms of SG&E, the general timelines for planning, approval, and completing distribution upgrades, you know, what are those generally?

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02:09:48.120 --> 02:10:02.360

Vice Chair Siva Gunda: Does SG&E know which upgrade projects are behind, you know, like, upgrade projects are behind to help us inform a little bit better on the... on how to bake that into our, analysis?

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02:10:02.360 --> 02:10:09.359

Vice Chair Siva Gunda: If not available today, is this something SG&E plans to track in the future, right? Like, how do we plan that?

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02:10:09.670 --> 02:10:22.270

Vice Chair Siva Gunda: For SC, maybe, you know, kind of if SC finds that its demand forecast drops, or if a significant amount of projected loads are canceled or pushed back into a future distribution planning cycle.

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02:10:22.580 --> 02:10:31.730

Vice Chair Siva Gunda: will SC cancel or reschedule distribution upgrades, right? Like, how do you take this into account to...

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02:10:31.880 --> 02:10:36.079

Vice Chair Siva Gunda: Harmonize across the different planning activities we're doing.

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02:10:36.240 --> 02:10:47.889

Vice Chair Siva Gunda: you know, IPR is coming out, you know, we trigger certain analyses, we are trying to kind of constantly course correct. You're all trying to do different activities with PUC,

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02:10:48.770 --> 02:10:52.410

Vice Chair Siva Gunda: You know, how do we harmonize on the deviations?

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02:10:52.550 --> 02:11:12.530

Vice Chair Siva Gunda: as much as we can. Again, completely recognizing that from a distribution planning side, as Mark noted, you're really thinking about safety, energization, reliability, and we're thinking at a system level, transmission planning, IRP, but also from a policy standpoint, we need to think about, rates and affordability. So can you...

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02:11:12.530 --> 02:11:15.970

Vice Chair Siva Gunda: all comment that that's a bunch of stuff that I just put out there.

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02:11:15.970 --> 02:11:24.720

Vice Chair Siva Gunda: You could say we can all punt this to a different conversation, but we'd love to hear if anything, if you would offer anything on the record for us to think through.

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02:11:25.280 --> 02:11:26.629

Mark Jimenez: Yeah, sounds good.

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02:11:26.920 --> 02:11:43.079

Mark Jimenez: So what I was getting that, is you're kind of asking how would we... what would we need to do to really kind of have a coordinated forecast between transmission and distribution? Like, what were we doing to try to get that before we got to today? Because we are trying to do that, right? That's kind of, like, was the whole...

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02:11:44.540 --> 02:11:50.130

Mark Jimenez: reason to try to incorporate the known loads, right? That was... it was to get rid of a process that was doing that.

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02:11:50.710 --> 02:11:52.860

Mark Jimenez: That's your question, right?

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02:11:52.860 --> 02:11:53.570

Vice Chair Siva Gunda: Okay.

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02:11:53.570 --> 02:12:00.350

Mark Jimenez: Well, that's a great question, because that has actually been, you know, kind of, like, one of my core goals for a number of years now.

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02:12:00.490 --> 02:12:09.769

Mark Jimenez: And the reason why, actually I even figured all... discovered all this, or this kind of issue that was a major problem was, had to do with,

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02:12:10.310 --> 02:12:27.569

Mark Jimenez: had to do with, you know, that transmission planning department, you know, was really constrained to model the IPR reliability Forecast. And at that time, there really wasn't an IPR reliability Forecast that was, like, Forecast A, B, and C, and they would choose one for, you know, it was before you had those two variants that we had this issue.

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02:12:27.720 --> 02:12:31.330

Mark Jimenez: And, you know, in the... to make a long story short.

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02:12:31.710 --> 02:12:44.370

Mark Jimenez: You know, it's just the transmission planning forecast is a little more regulated, the distribution forecast, right? And, you know, they... that department just said, hey, look, you know, I can't really arbitrarily model what I want.

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02:12:45.100 --> 02:13:00.759

Mark Jimenez: And here's why, you know, we have a joint agency agreement, and we, you know, we have to model what we have, okay? So that's why I think where I think, you know, my efforts more started going into coordinating with the agencies, because I knew the only way to really get transmission to model

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02:13:00.800 --> 02:13:08.940

Mark Jimenez: what I want would not be to, you know, override the joint agency agreement, it was to really get the IPR, in alignment, right?

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02:13:09.430 --> 02:13:12.339

Mark Jimenez: And so, the major part, you know.

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02:13:12.510 --> 02:13:20.740

Mark Jimenez: of the IPR that I think is out of alignment, basically, is, like, kind of like how you place the loads on the buses. I mean, that's the big thing. So...

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02:13:20.940 --> 02:13:22.500

Mark Jimenez: Y-you can,

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02:13:23.340 --> 02:13:29.959

Mark Jimenez: agree that something may not come in at a different value. Like, if I have a distribution load, and I say, hey, it's gonna come in at 10 megawatts.

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02:13:30.060 --> 02:13:46.910

Mark Jimenez: And you say, well, at transmission, we want to be a little more conservative, and we want a Model A. Okay, that's fine. That's a risk-based engineering judgment, right? And I think that's okay. But you can't argue that, well, I don't think it's going to go there at all, right? And so some of the things, like, particularly

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02:13:47.010 --> 02:13:59.290

Mark Jimenez: like, AATE and stuff, like, that stuff can get placed in a completely different place, in a completely different year, in a transmission study versus a distribution study. Distribution study is more specific.

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02:13:59.430 --> 02:14:04.009

Mark Jimenez: So, to me, the placement on the load bus, the integration.

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02:14:04.120 --> 02:14:10.790

Mark Jimenez: Not necessarily the magnitude, because we can disagree on, like, what the energy conversion of that is.

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02:14:11.060 --> 02:14:22.910

Mark Jimenez: But placing the loads in the right place in the transmission for it is the key thing. Prior to even integrating the known loads, right, the process was to run an ad hoc study, so basically transmission planning would have their study.

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02:14:22.980 --> 02:14:35.750

Mark Jimenez: They say, okay, I ran the whole system, I constrained it to the IPR, and here's what I got. And then distribution planning says, okay, here's the loads for that area, run this, right? And it's not... one of it is trying to address whether you have

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02:14:36.010 --> 02:14:46.900

Mark Jimenez: you know, thermal issues, so a lot of it was safety-related, right? So transmission planning has to run a contingency analysis. Did I get the right voltage, right? Am I overloading under normal conditions?

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02:14:46.900 --> 02:15:01.349

Mark Jimenez: If I have these other conditions, operating conditions that I'm going through, you know, am I going to have any compliance issues there? So in distribution, a voltage problem is not a compliance issue, right? It's something we need to solve, but in transmission, they're required to do a project.

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02:15:01.560 --> 02:15:13.219

Mark Jimenez: So, transmission is really kind of constrained in saying, well, you know, they're in the same spot? Hey, are these loads real? You know, what do I model C? So, kind of... we kind of put the transmission planning

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02:15:13.350 --> 02:15:33.009

Mark Jimenez: group in the middle of all this, right? We have the IPR, so you shall model the IPR, and you have distribution planning saying, hey, look, you know, this customer's real, they just want to know if they can come to full energy, right? Well, we burned down the transmission line, right? Serious stuff. And they're kind of like, well, how do I do that when I'm constrained, right? And so I think that's kind of like the objective, is to kind of

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02:15:33.600 --> 02:15:48.159

Mark Jimenez: plan the resources needed to serve customers in a little bit of a different way than you're doing your capacity analysis, because I think, kind of as Chris pointed out, right, you kind of have an energy sales viewpoint, and you have, like, a...

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02:15:48.340 --> 02:15:56.380

Mark Jimenez: Viewpoint on... about how much energy. But you can't necessarily build to, you know, your... Kinda like...

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02:15:56.870 --> 02:16:12.219

Mark Jimenez: projected limit, right? That would not be safe. You have to kind of build it a little higher, right? So, when customers have, like, this capacity to connect, you know, that's kind of representing that upper limit. And so, you know, if they were to kind of come close to those levels, right, you need to kind of...

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02:16:12.350 --> 02:16:21.939

Mark Jimenez: you know, plan to the majority of what they expect when you... when you size facilities. So, I think... I think it is getting closer, because I think we added a lot of...

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02:16:22.350 --> 02:16:32.220

Mark Jimenez: you know, you create a forecast, IEPR reliability with known loads, and I think that is a greater reflection of, you know, the placement, and it's a greater reflection of the capacity

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02:16:32.240 --> 02:16:43.829

Mark Jimenez: required to serve, right? And that is not an energy forecast. Really, it's a leading indicator of where the growth placement is, really. So you can't really use it for an energy forecast, not really valid.

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02:16:44.030 --> 02:16:48.329

Mark Jimenez: So, some conversions, I think, between... like that.

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02:16:48.620 --> 02:16:57.709

Mark Jimenez: capacity transmission forecast, still needs to be developed, and I think those are the questions we're getting through this year. It's like, well, okay, if I have this

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02:16:57.870 --> 02:17:00.740

Mark Jimenez: item, and it has a capacity demand of X.

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02:17:01.010 --> 02:17:03.889

Mark Jimenez: What does that actually look like in the form of energy?

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02:17:04.030 --> 02:17:16.070

Mark Jimenez: And kind of what I mentioned earlier was a lot of these processes for energy and capacity, they've kind of been a little bit isolated, right? They're not... they're not really connected, even though, in reality, they are.

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02:17:16.209 --> 02:17:18.159

Mark Jimenez: And I think that's kind of the...

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02:17:18.309 --> 02:17:31.409

Mark Jimenez: what Cristy had pointed out is there is some nexus, you know, I love that word, too, because it is true that there is some, you know, way to kind of understand how these things are connected. And I think, you know, utilities are kind of

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02:17:31.549 --> 02:17:34.700

Mark Jimenez: You know, okay to collaborate more and try to...

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02:17:34.830 --> 02:17:46.269

Mark Jimenez: bring the information from different departments together to try to figure it out. But it's definitely, like, not a very straightforward thing, and even as we considered how you do it.

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02:17:46.559 --> 02:17:48.409

Mark Jimenez: There's a lot of detail there.

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02:17:48.540 --> 02:17:58.869

Mark Jimenez: You know, there's a limited amount of us to really try to figure it out, but I think at this stage, we're kind of just needing to put all the questions on the table that would need to be figured out, and then I think we need to kind of

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02:17:59.030 --> 02:18:07.419

Mark Jimenez: have more workshops and try to figure out, well, what do we, you know, what's our viewpoint on these things? And I think that's the only way, really, we're gonna draw these things closer together.

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02:18:17.700 --> 02:18:27.820

Alberto Amparan Lozoya: Hi, thank you for the question. And for SG&E, I want to add that we do not currently have a backlog. We're able to meet all of the customer requests.

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02:18:27.920 --> 02:18:45.490

Alberto Amparan Lozoya: And that is in part to a lot of great work that our planning engineers are doing to meet with the customers and have an open communication so that we can get to see a customer need, wait ahead and able to plan accordingly.

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02:18:45.700 --> 02:18:52.480

Alberto Amparan Lozoya: So in general, we're able to meet all of the customer requests, up to... up to this point.

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02:18:58.040 --> 02:19:00.750

Chris Ohlheiser: Yeah, in regards to the, question you had for...

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02:19:01.040 --> 02:19:14.720

Chris Ohlheiser: SEE regarding how we would handle any sort of upgrades that may be in progress if we get a cancellation on one of our node loads. We do re-evaluate. Once we get a cancellation, we will look at

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02:19:14.719 --> 02:19:22.180

Chris Ohlheiser: Whether or not any project that's in process or about to go to execution is still needed.

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02:19:22.680 --> 02:19:42.239

Chris Ohlheiser: there could be a possibility that it is still needed. There's not always a one-to-one ratio of... we have one known load that's driving the need for an upgrade.

Oftentimes, it's multiple connections that do contribute to that. There could also just be, you know, overall increase of existing load on the system, so...

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02:19:42.750 --> 02:19:47.780

Chris Ohlheiser: But we do evaluate, and we would, if necessary, we would,

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02:19:48.760 --> 02:19:51.780

Chris Ohlheiser: Cancel an upgrade that we're working on.

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02:19:53.120 --> 02:20:05.789

Vice Chair Siva Gunda: Great, I would pass it to Commissioner McAllister, and I think the... I hope, you know, the conversation continues on the spirit of, you know, how do we balance what the distribution planners need?

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02:20:05.900 --> 02:20:12.940

Vice Chair Siva Gunda: And make sure that we are fully baking in the necessary upgrades in a timely fashion.

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02:20:13.200 --> 02:20:16.770

Vice Chair Siva Gunda: But doing them, hopefully, in a flexible way.

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02:20:16.920 --> 02:20:24.409

Vice Chair Siva Gunda: That allows for us to adaptively manage the system where we can, right? I think that's kind of,

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02:20:24.820 --> 02:20:27.399

Vice Chair Siva Gunda: You know, my hope is that, you know, what is the...

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02:20:27.700 --> 02:20:45.920

Vice Chair Siva Gunda: as we are all in the front end of this entire process, how do we create a process that allows for adaptive management? We don't want to be reactive to the needs and behind the planning, and we, at the same time, do not want to have stranded

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02:20:45.930 --> 02:20:57.689

Vice Chair Siva Gunda: assets. I think at this... at this point, standard assets might mean, you know, there's really not a lot of standard assets, you know, we are going to see this electrification, but I think

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02:20:57.830 --> 02:21:12.599

Vice Chair Siva Gunda: when the investment hits the ratepayers, I think it's an important part for us to all be conscious, given, you know, the way we are today. So I just want to continue to, you know, lay in that spirit in our conversation, and that's where my questions are coming from.

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02:21:12.870 --> 02:21:14.740

Vice Chair Siva Gunda: So, that comes from McAllister to you.

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02:21:15.250 --> 02:21:18.060

Chris Ohlheiser: I, I was, if I, if I could,

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02:21:18.530 --> 02:21:29.479

Chris Ohlheiser: Your response there did spur another thought I had in regards to actually the timing of a lot of this. What we've seen over the years is, you know.

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02:21:30.970 --> 02:21:37.490

Chris Ohlheiser: Five, six years ago, these known loads, these customer requests would come to us, and it would take the customer

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02:21:37.530 --> 02:21:53.779

Chris Ohlheiser: a good amount of time to build these larger projects that would typically drive an upgrade on our system, right? If a customer was coming with something that was 5 or 6 megawatts, that's going to have a big impact, that's typically not something they can build quickly.

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02:21:53.830 --> 02:21:56.720

Chris Ohlheiser: What we've seen more recently is

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02:21:57.110 --> 02:22:05.239

Chris Ohlheiser: that they can build very quickly, right? You can put in 5 megawatts worth of DC fast charging.

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02:22:05.620 --> 02:22:13.550

Chris Ohlheiser: within a matter of months, if the capacity was there on the system. So that's the other challenge we're hap... we're having.

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02:22:13.810 --> 02:22:23.920

Chris Ohlheiser: is trying to... react in a way that, you know, can meet these accelerated customer requests as well.

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02:22:24.140 --> 02:22:31.909

Chris Ohlheiser: You know, so that's the challenge, that's the balance at the distribution level that we're trying to fight. That's what we're trying to work through is,

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02:22:32.130 --> 02:22:38.149

Chris Ohlheiser: how do we accommodate these? And yeah, the customer may cancel, but they could go from

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02:22:39.000 --> 02:22:52.250

Chris Ohlheiser: energization request to actual energization within a couple months, they could also cancel within that same couple months. So that's a balance which we're also trying to strike here on the distribution level.

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02:22:52.250 --> 02:22:53.200

Vice Chair Siva Gunda: Right.

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02:22:53.370 --> 02:23:01.879

Chris Ohlheiser: So yeah, the timing, you know, is critical as well. Like, a year could be a very big difference in the amount of loads we see.

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02:23:02.260 --> 02:23:14.929

Vice Chair Siva Gunda: Yeah, actually, Chris, thank you for putting this on the table, because that's an important insight. I mean, we just went to the Casta Semi Factory and kind of, like, looking at a 1.2 megawatt charger per truck. I think it's a...

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02:23:14.930 --> 02:23:22.820

Vice Chair Siva Gunda: it's a very different paradigm we live in right now, and I totally agree on that. So, Akamshamekash, if you're okay, I just want to ask one question to Christine.

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02:23:22.820 --> 02:23:23.300

Commissioner Andrew McAllister: Please, go ahead.

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02:23:23.300 --> 02:23:34.449

Vice Chair Siva Gunda: kind of pass it to you. Cristy is there... is there a longer-term framework? You know, you've been in the middle of all this with the team. Kind of, what's the longer-term framework you think is necessary to be able to translate between

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02:23:34.560 --> 02:23:44.480

Vice Chair Siva Gunda: the... the utility is kind of trying to faithfully develop a bottom-up data, for distribution, and the CC's Forecast products, and kind of...

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02:23:44.560 --> 02:24:00.659

Vice Chair Siva Gunda: any next steps that you think are necessary to address known loads, question for this forecast cycle and beyond. I think we had a lot of internal conversations about how do we do it in a way that everybody's happy and nobody's happy, right? So, kind of how do we do this?

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02:24:00.660 --> 02:24:12.189

Cristy Sanada: Yeah, yeah, I mean, and we started this conversation in part when I was back at the CAISO and trying to, kind of be an intermediary on the transmission planning discussion piece.

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02:24:12.260 --> 02:24:24.419

Cristy Sanada: But I think for this year, like, we do have some more leads that we want to run to ground, a few more data points that we want to look at, make sure that we're not completely missing some near-term load growth that we should be accounting for.

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02:24:24.420 --> 02:24:32.720

Cristy Sanada: But in the longer run, I think it is critical that we keep working with the IOUs to be able to translate between our forecasts.

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02:24:32.990 --> 02:24:50.290

Cristy Sanada: And so, as Mark mentioned, I think this involves a lot more data than just the known load data. So I think some, you know, really dedicated coordination with the utilities to be able to build a framework where we can more seamlessly translate between each other would be really

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02:24:50.290 --> 02:25:01.040

Cristy Sanada: fruitful, I think. We've had a lot of ad hoc discussions, too, with the utilities as these forecasts have met at the, you know, at CAISO under the transmission planning process.

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02:25:01.040 --> 02:25:19.550

Cristy Sanada: And so there is where we realize that we do need a better framework for us to be able to more seamlessly translate between one another and, you know, check each other's assumptions. We can disagree at times, that's fine, but we really just need a better kind of setup, get all the data.

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02:25:19.550 --> 02:25:25.040

Cristy Sanada: To be able to... to even translate and be talking the same language to start with, so...

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02:25:25.630 --> 02:25:33.590

Cristy Sanada: That's what I'm seeing. For the future, more cloud with the IOUs and, you know, building a framework where we can translate between our forecasts a lot better.

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02:25:33.590 --> 02:25:50.969

Vice Chair Siva Gunda: Yeah, Chris, I really appreciate our, you know, the team, and again, want to uplift, kind of, the JASC process, the DOG process, all these places where everybody's trying to talk through and have, conversation to de-silo this. You know, I think, you know, this continued focus of

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02:25:50.970 --> 02:25:59.820

Vice Chair Siva Gunda: Trying to build the necessary capacity to absorb at a distribution level, you know, a load impact that allows for safe operations.

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02:25:59.940 --> 02:26:19.050

Vice Chair Siva Gunda: and kind of harmonizing with, like, you know, maximizing load factors, the system. I think these are not two separate conversations, and to the extent we can, you know, silo that, de-silo that, to have a more holistic conversation, I think it's super helpful, and I'll continue to look to this team

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02:26:19.050 --> 02:26:25.579

Vice Chair Siva Gunda: For setting a table for those and enhancing those conversations. So, Commissioner McAllister, sorry, it's a long, long time.

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02:26:25.580 --> 02:26:27.730

Commissioner Andrew McAllister: No, you actually covered some...

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02:26:27.730 --> 02:26:28.200

Vice Chair Siva Gunda: Yeah.

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02:26:28.200 --> 02:26:38.390

Commissioner Andrew McAllister: It's good. You covered some ground, that I was just gonna really ask one question to kind of delve into, and this, that your final point there.

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02:26:38.700 --> 02:26:40.829

Commissioner Andrew McAllister: about,

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02:26:41.130 --> 02:26:59.710

Commissioner Andrew McAllister: you know, those not being separate conversations. I want... and I know this is... this conversation is... is about, largely about hardware, you

know, planning for CapEx investments, you know, in the distribution grid, and the challenges of doing that and getting the timing right, not wanting to be...

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02:26:59.950 --> 02:27:11.809

Commissioner Andrew McAllister: be caught without enough headroom to accommodate new loads, but also not over-investing, right, in a way that is inefficient and puts unnecessary upward pressure on

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02:27:11.980 --> 02:27:13.760

Commissioner Andrew McAllister: On the rate basin on rates.

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02:27:14.180 --> 02:27:19.230

Commissioner Andrew McAllister: And so that's kind of the problem of our time, right? And I feel like,

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02:27:19.450 --> 02:27:23.829

Commissioner Andrew McAllister: just a little perspective, right? When then-California Senator Padilla

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02:27:24.030 --> 02:27:31.480

Commissioner Andrew McAllister: you know, wrote a stern letter to the agencies and said, get your act together, coordinate, figure this out, you know?

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02:27:31.720 --> 02:27:36.699

Commissioner Andrew McAllister: Just sort of a little perspective, I think we're actually in an amazingly better place now than we were then.

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02:27:37.100 --> 02:27:43.279

Commissioner Andrew McAllister: For a whole bunch of reasons. But we've all leaned in, and we've built these relationships, and...

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02:27:43.490 --> 02:27:52.809

Commissioner Andrew McAllister: The, the Forecast is a much more robust set of products that's, you know, much, much more well-grounded, in actual data.

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02:27:52.810 --> 02:28:03.630

Commissioner Andrew McAllister: And these conversations really helped that happen. So, so all that said, I kind of wanted to just, maybe take a step further than what the Vice Chair, just was asking.

988

02:28:03.970 --> 02:28:11.030

Commissioner Andrew McAllister: And, maybe get perspective on how much of a tool

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02:28:11.230 --> 02:28:17.140

Commissioner Andrew McAllister: Or set of tools do you think active load management can be...

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02:28:17.480 --> 02:28:32.079

Commissioner Andrew McAllister: for managing these new, potentially very accelerated and large new loads. You know, a production build, you know, I agree with you, Chris, that takes years and maybe several phases and all that, so that's something that you can kind of plan against.

991

02:28:32.080 --> 02:28:42.900

Commissioner Andrew McAllister: a gradual ramp-up over several years. But, you know, a 1.2 megawatt, you know, truck charger or a, you know, a supercharger bank or whatever, those can happen pretty quick.

992

02:28:43.420 --> 02:28:48.539

Commissioner Andrew McAllister: But, you know, also there are tools now to...

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02:28:48.610 --> 02:29:06.389

Commissioner Andrew McAllister: and I think some of the, you know, Charge America, Recharge America, or, you know, whatever it is, the Volkswagen Settlement Chargers, you know, those are high... those are definitely, high-capacity DC chargers. But I've noticed that they are kind of capping those, when they first go in, they're capping the... the power,

994

02:29:06.510 --> 02:29:13.600

Commissioner Andrew McAllister: draw of those below the actual capacity of the charger itself, presumably, I think, to accommodate

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02:29:13.730 --> 02:29:18.560

Commissioner Andrew McAllister: the actual, actual capacity of the network.

996

02:29:18.780 --> 02:29:24.050

Commissioner Andrew McAllister: I believe. So, but I guess...

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02:29:24.400 --> 02:29:41.060

Commissioner Andrew McAllister: you know, using... sort of, and that's partly why I asked about the flexible connection, you know, that PG&E is using, but, you know, being able to actually place some conditions, you know, not just expect, hey, man, you bring a huge load, and we'll connect it, and we gotta have that capacity right for you on day two.

998

02:29:42.470 --> 02:29:48.469

Commissioner Andrew McAllister: that's... in this world we're heading into, that may not be as reasonable as it might have been, right? And...

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02:29:48.930 --> 02:29:53.019

Commissioner Andrew McAllister: You know, the managing capacity factors and improving

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02:29:53.190 --> 02:29:56.060

Commissioner Andrew McAllister: The utilization of the grid,

1001

02:29:56.880 --> 02:30:01.020

Commissioner Andrew McAllister: It seems like there's sort of a natural economic...

1002

02:30:01.650 --> 02:30:11.939

Commissioner Andrew McAllister: you know, incentive to do that, in terms of the impact of affordability on all these new CapEx investments. Anyway, all this is to say, I'm wondering, in terms of the system planning.

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02:30:12.230 --> 02:30:20.450

Commissioner Andrew McAllister: You know, for distribution investments. How much are your teams and your utilities coordinating with,

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02:30:20.780 --> 02:30:28.260

Commissioner Andrew McAllister: Kind of the, the rates, you know, flexible load management, kind of the...

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02:30:28.270 --> 02:30:41.399

Commissioner Andrew McAllister: you know, non-wired alternatives kinds of approaches. We had a front of the meter workshop not long ago, and got some feedback, you know, from utilities on that kind of an approach, but I was just kind of wondering how you see that as

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02:30:41.570 --> 02:30:53.430

Commissioner Andrew McAllister: You know, investing in demand-side, management, load management, You know, active, sort of controls,

1007

02:30:53.680 --> 02:31:00.299

Commissioner Andrew McAllister: In order to at least buy time, but maybe even serve as a substitute for new capacity.

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02:31:06.580 --> 02:31:24.519

Chris Ohlheiser: Yeah, so maybe I'll start. So at SCE, like, we're very actively engaged with our customer service groups, our rate, our rate teams, looking at just that. Also, you know, when we're... when a customer requests energization, and maybe they're a large customer that we can't accommodate, we do have that conversation.

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02:31:24.610 --> 02:31:39.849

Chris Ohlheiser: about all their various potential options. The challenges we're seeing there is once you start to operationalize a lot of that, it's how do you control that? How do you manage that, right? And having the right systems and tools in place to make sure that the

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02:31:39.860 --> 02:31:53.509

Chris Ohlheiser: system actually stays safe as well, right? What's that, you know, as Mark pointed out earlier, it's not just reliable, it's not just affordable, but it's also, probably most importantly, making sure we stay safe.

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02:31:53.510 --> 02:32:00.790

Chris Ohlheiser: And so, to really be able to monitor all that, and control that, and keep everything safe, I think is probably where

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02:32:00.790 --> 02:32:05.550

Chris Ohlheiser: The biggest part of our focus is today on enabling that.

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02:32:06.850 --> 02:32:13.589

Commissioner Andrew McAllister: So, in terms of safety, though, are you talking about sort of not overburdening the system, or, like, what sorts of issues would come up.

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02:32:14.580 --> 02:32:33.580

Chris Ohlheiser: It could be... it could be overburdening, right? It's the assurance that, you know, that load, you know, if they're going to operate on a limited, capability, are they, how do we assure that, being able to provide potential, like, real-time feedback to the customers that are operating under those functionalities.

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02:32:33.910 --> 02:32:34.520

Commissioner Andrew McAllister: Yeah.

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02:32:35.360 --> 02:32:36.960

Commissioner Andrew McAllister: Yeah, makes sense. Thanks.

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02:32:38.490 --> 02:32:44.980

Mark Jimenez: I think for PG&E, there is a lot of interest across departments to try to, you know, identify these things.

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02:32:46.480 --> 02:33:01.209

Mark Jimenez: you know, for distribution planning, you know, we... the way we would scope a project has a lot to do with, you know, what is standard. So, we have standards basically as a standard department, right? And they write

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02:33:01.840 --> 02:33:16.440

Mark Jimenez: things on how to build things, so the individual engineer doesn't really decide how to build things, right? And that's signed off by professional engineers. And the way the whole company operates off standards. So, a lot of times, a scope is really limited to standardized equipment.

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02:33:16.460 --> 02:33:28.379

Mark Jimenez: So, I find that a lot of stuff's still in the pilot stage, or in stages that, it's not fully standardized enough in a way that could be directly applied to a distribution planning forecast.

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02:33:28.410 --> 02:33:31.970

Mark Jimenez: Because you have to have, like, you have to have purchased the equipment.

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02:33:32.280 --> 02:33:37.140

Mark Jimenez: kind of like Chris said, a system to operate it, a way to use it, a way to control it.

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02:33:37.390 --> 02:33:44.960

Mark Jimenez: And some of that stuff's, not for distribution planning engineer, a standardized thing to apply.

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02:33:45.040 --> 02:34:04.129

Mark Jimenez: you know, I don't know, like, if that's largely due to, you know, cost, or, you know, the industry, you know, not being, you know, third-party, like, vendors not being able to supply equipment, or, you know, I'm not sure what it is, but for now, it's not quite available as far as a piece of hardware that you could specify. It's very limited.

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02:34:04.240 --> 02:34:07.379

Mark Jimenez: So, you know, we'd need to increase that to a level

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02:34:07.780 --> 02:34:18.040

Mark Jimenez: Or, I think another way to do that is kind of, to have partnerships with, third-party vendors that do this, and it's kind of like third-party aggregators and stuff like that.

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02:34:18.380 --> 02:34:34.359

Mark Jimenez: But, you know, I think those... I'm not sure that those relationships are there yet, and I think that's certainly, I think, a place where the Commission can kind of have more influence, is kind of, you know, get with the vendors and have them commit to partner

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02:34:34.700 --> 02:34:38.449

Mark Jimenez: Cause we can't get them to partner by ourselves, right? I mean, they...

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02:34:39.020 --> 02:34:57.090

Commissioner Andrew McAllister: And, you know, you've got the dynamic with the PUC and cost recovery and that sort of thing, which is important also. And I guess that's kind of where I'm going, is that, you know, we have tools in our toolbox, technically, you know, that have just entered the pipeline, you know, relatively recently in our... in utility terms, which is, like, the last decade, right?

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02:34:57.090 --> 02:35:02.269

Commissioner Andrew McAllister: And so, takes a while to kind of permeate. But there are some powerful...

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02:35:02.390 --> 02:35:17.669

Commissioner Andrew McAllister: You know, tools taking advantage of automation and, you know, the big data and digital economy kind of tools that can provide the kind of near-term visibility that would enable a distribution system operator to have a lot more,

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02:35:17.990 --> 02:35:31.039

Commissioner Andrew McAllister: sort of, degrees of freedom in terms of how you accommodate new load. And so, you know, certainly the Energy Commission, you know, we're working a lot on several different pieces of this puzzle, but, you know, it is a broader conversation.

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02:35:31.040 --> 02:35:38.739

Commissioner Andrew McAllister: that's got to be integrated with the utilities, and the PUC, and all the, you know, third parties, as you mentioned. So, I'm optimistic, but it definitely...

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02:35:38.750 --> 02:35:42.279

Commissioner Andrew McAllister: You know, to get to the level of reliability and predictability

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02:35:42.410 --> 02:35:52.079

Commissioner Andrew McAllister: That, you know, we all reasonably expect in a system that still is going to take some work, but, I think we'll get there. But, I don't know, SG&E, Alberto, do you want to...

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02:35:52.410 --> 02:35:53.820

Commissioner Andrew McAllister: Add anything to that?

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02:35:54.280 --> 02:36:01.749

Alberto Amparan Lozoya: Hi, yeah, for SG&E, we generally don't take this, rate consideration into the forecast.

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02:36:01.890 --> 02:36:18.490

Alberto Amparan Lozoya: One of the... one of the challenges is every time that we look at the, specific feeder loading, we take all of the things that are into that feeder and consider that if we get a new, no load, that needs to be added into this feeder.

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02:36:18.650 --> 02:36:22.409

Alberto Amparan Lozoya: We plan it accordingly without, any...

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02:36:22.530 --> 02:36:27.629

Alberto Amparan Lozoya: Any other things that would help us to, meet that need?

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02:36:29.830 --> 02:36:35.430

Commissioner Andrew McAllister: Appreciate that. I'm looking at the clock, we're at 3.35, so I know that was the beginning of the next...

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02:36:35.940 --> 02:36:38.979

Commissioner Andrew McAllister: Panel, so thanks, everyone. Really appreciate your...

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02:36:38.980 --> 02:36:41.080

Cristy Sanada: Well, we do want to turn to Q&A.

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02:36:41.080 --> 02:36:42.910

Commissioner Andrew McAllister: Oh, yes, I'm sorry.

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02:36:42.910 --> 02:37:01.890

Cristy Sanada: And then we'll jump to the next section, so if I could just have all the panelists stay on, we'll take a few of the questions. I don't think we'll have time to get to all of them, so we'll endeavor to answer your questions afterwards. So I'll answer the first two questions, one from Joshua Spooner.

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02:37:02.030 --> 02:37:10.569

Cristy Sanada: So, the question there is, curious if CC can provide more detail on how known loads that are incremental are not incremental to the baseline load.

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02:37:10.610 --> 02:37:30.669

Cristy Sanada: identified, for example, does the baseline forecast have an indicative amount of interconnection requests? So, the answer there is no, we're not able to derive a specific amount of interconnection requests from CC's baseline Forecast, and just want to clarify that our forecast is a top-down forecast, and as I mentioned earlier, our forecasts are based more on

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02:37:30.670 --> 02:37:36.079

Cristy Sanada: Indicators like economic, demographic projections, and not individual projects, so...

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02:37:36.080 --> 02:37:39.020

Cristy Sanada: Just wanted to note, though, that our...

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02:37:39.020 --> 02:37:55.269

Cristy Sanada: The load growth in our baseline is intended, or inherently is expected to capture new customer requests, but that said, we did seek to get more data this year to help understand, like, where there is overlap and better do that translation, but we're just not there yet.

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02:37:55.410 --> 02:38:06.299

Cristy Sanada: So I hope that answers your question, Josh, and then I'll read off Lauren Carr's question. So, does the CC use energization milestones or confidence levels when forecasting

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02:38:06.300 --> 02:38:10.649

Cristy Sanada: Known loads, as is done in the data center load forecast methodology.

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02:38:10.650 --> 02:38:29.049

Cristy Sanada: So we... we did apply cancellation rates, utilization rates, and ramp rates to the known load data last year before we, incorporated it into the local reliability forecast. But we didn't... we didn't develop different scenarios with different confidence levels like we do for the data center forecast.

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02:38:31.870 --> 02:38:48.710

Cristy Sanada: So I'll just read off two questions, whoever has an answer first, just go for it. But first question from Carl. So, is what downsides do customers face for requesting connections earlier or larger than they actually need?

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02:38:53.560 --> 02:38:57.869

Mark Jimenez: So is that... that's saying, like, well, if someone... can you just arbitrarily ask for whatever

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02:38:58.130 --> 02:39:00.670

Mark Jimenez: Capacity you want? Would there be a penalty?

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02:39:02.310 --> 02:39:03.610

Mark Jimenez: Sort of way to put it.

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02:39:04.130 --> 02:39:15.980

Cristy Sanada: Yeah, I mean, Carl can clarify in the chat, but, just reading off the question again, so downsides that customers might face for requesting connections earlier or larger than they actually need.

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02:39:16.770 --> 02:39:21.709

Mark Jimenez: I think from a customer perspective, you don't really only want to construct once, so...

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02:39:21.860 --> 02:39:28.389

Mark Jimenez: I think they're motivated to maximize, you know, the request, right, because it costs.

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02:39:28.860 --> 02:39:35.690

Mark Jimenez: So there's, you know, I think, I think they're asking for what that facility would need, ultimately.

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02:39:36.070 --> 02:39:40.700

Mark Jimenez: Not necessarily what they'll need in year one, so facility, you know.

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02:39:41.040 --> 02:39:51.570

Mark Jimenez: depending on how fast you're able to grow, right, it could take a long time. So I think that's kind of one of the things that is kind of in the middle of all this, right, is how long is it taking for them to really

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02:39:51.700 --> 02:39:54.150

Mark Jimenez: Full... utilize your... your energy.

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02:39:54.750 --> 02:39:59.379

Mark Jimenez: So, I think it's sort of limited, but it's not... it's not like a free...

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02:39:59.780 --> 02:40:06.940

Mark Jimenez: you know, checkbox or a free cell where you just say whatever you want. You know, we have teams that work with customers that

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02:40:06.950 --> 02:40:22.790

Mark Jimenez: you know, request, you know, equipment and, you know, details and panel sizing and, you know, engineering data that, you know, is ultimately gonna drive a number. So the customer doesn't really select the number, it's really a calculation based on what you have.

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02:40:23.190 --> 02:40:30.769

Mark Jimenez: And so that's... that's a number that kind of is needed to kind of size their service, and so that's where a lot of the data comes from.

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02:40:33.170 --> 02:40:42.059

Cristy Sanada: Thanks, Mark. And then I will read off one more question, and then I recognize that there's a few more, so we'll just... we'll try to answer via chat.

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02:40:42.280 --> 02:40:56.469

Cristy Sanada: But from Brooke from PC, so it sounds like the GNA is formulated based on the known loads. Are any proactive cancellation assumptions applied to those known loads before creating the G&A, or do all known loads contribute equally to the G&A?

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02:41:00.530 --> 02:41:19.990

Chris Ohlheiser: Yeah, so I would say, for purposes of creating our forecast, all known loads are treated the same, like, as far as whether or not they're an input into the forecast. We do look individually at each known load as it comes in, and may evaluate, based upon load schedules we have, various

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02:41:19.990 --> 02:41:38.820

Chris Ohlheiser: pieces of information. We may, also attribute some discount or D-rate factor to it based upon the type of connection it is. But, regarding whether or not cancellation, plays into whether or not it'll be included in the forecast, we do not,

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02:41:39.130 --> 02:41:55.670

Chris Ohlheiser: We do not consider that. I think I talked about that earlier, right? Like, if you have 1 out of every 15 customers, not connect, you can't not plan for a customer, because there's a chance they may not be there, if they've applied for a connection.

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02:41:56.710 --> 02:42:03.320

Mark Jimenez: Yeah, the whole... the whole thing is a customer-focused program. If you were the person requesting service.

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02:42:03.420 --> 02:42:15.519

Mark Jimenez: Right? We're treating you the same and saying, hey, we can connect you or can't, right? And I don't think you would want us to say, well, hey, are you gonna cancel, right? So we don't really look at it that way.

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02:42:15.610 --> 02:42:20.050

Mark Jimenez: We be... we're fair, and, you know, we... we try to connect to the greatest

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02:42:20.110 --> 02:42:26.840

Mark Jimenez: you know, ability in the fastest that we possibly can, given our processes and resources. So, every customer's treated that way.

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02:42:26.860 --> 02:42:45.449

Mark Jimenez: And then we inform customers if there is capacity issues. I mean, we do let them know, and if customers opt to cancel at that stage, right, then, you know, that's kind

of their choice, right, if they can meet the timeline or not. Or if the timeline works for them or not, because sometimes it doesn't.

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02:42:45.820 --> 02:42:59.059

Mark Jimenez: As far as a forecast, you know, as long as the application is active, right, I think we're in a connection mode for that customer. Now, we do use cancellation rates at a higher level when we do.

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02:42:59.060 --> 02:43:10.969

Mark Jimenez: system reconciliation against the IPR, so we do kind of look at our totals and say, well, okay, some of this is expected to cancel, so, you know, we don't expect all of these to come to fruition from a...

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02:43:11.190 --> 02:43:17.839

Mark Jimenez: hyperspatial disaggregation perspective. And, it's been a practice that we've been applying for a long time.

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02:43:18.100 --> 02:43:19.890

Mark Jimenez: And that's well vetted.

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02:43:22.140 --> 02:43:39.410

Cristy Sanada: All right, well, that is the end of our panel, so I just want to say thank you to all of our panelists today. So, we can close out, and I'm going to hand things off now to

Jeremy Smith, who's a Program and Project Supervisor with the Demand Analysis Branch, to lead a discussion on data centers.

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02:43:39.700 --> 02:43:41.189

Cristy Sanada: Over to you, Jeremy.

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02:43:43.930 --> 02:43:46.579

Jeremy Smith: All right, thank you, Christy, and good afternoon, everyone.

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02:43:46.870 --> 02:43:51.529

Jeremy Smith: I'm Jeremy Smith, the supervisor of the Spectre Modeling Unit in the Demand Analysis Branch.

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02:43:51.810 --> 02:43:56.880

Jeremy Smith: I'll provide a high-level overview of CEC's data center demand Forecast Methodology.

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02:43:57.030 --> 02:44:07.700

Jeremy Smith: used for the 2025 IPR, highlight some areas we're focused on for the 2026 IPR cycle, and share some takeaways from our recent demand analysis working group meeting.

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02:44:08.370 --> 02:44:22.879

Jeremy Smith: That should provide some context for the perspectives. We'll hear later from our other presenters from San Jose Clean Energy and PG&E, which you can see here on the screen, and I'll introduce them when their presentations are up.

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02:44:23.100 --> 02:44:24.879

Jeremy Smith: So we could go ahead and go to the...

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02:44:25.240 --> 02:44:27.340

Jeremy Smith: Next slide, and then one more.

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02:44:28.250 --> 02:44:29.210

Jeremy Smith: Thank you.

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02:44:30.940 --> 02:44:43.920

Jeremy Smith: As I mentioned, the CEC hosted a demand analysis working group meeting last week on August 12th to discuss data center data collection challenges and identify opportunities to improve CEC's demand forecasting methodology.

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02:44:44.200 --> 02:44:59.379

Jeremy Smith: We had excellent presentations and a roundtable discussion with PG&E, SCE, Valley Electric Association, City of Palo Alto Utilities, Silicon Valley Power, Vernon Public Utilities, San Jose Clean Energy, and Silicon Valley Clean Energy.

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02:44:59.790 --> 02:45:09.020

Jeremy Smith: I'll share some of the key takeaways shortly, but we'll first provide a shortened version of CEC's data center demand forecasting approach that was presented at the DOG meeting.

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02:45:09.390 --> 02:45:10.370

Jeremy Smith: Next slide.

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02:45:13.760 --> 02:45:19.080

Jeremy Smith: CEC's data center Forecast is developed using a bottom-up, project-based approach.

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02:45:19.550 --> 02:45:29.229

Jeremy Smith: First, we collect data center energization requests from utilities, including application status, requested capacity, timing, and location.

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02:45:29.690 --> 02:45:35.510

Jeremy Smith: Second, we apply a set of assumptions to translate requested capacity into expected demand.

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02:45:36.090 --> 02:45:39.910

Jeremy Smith: These include confidence levels that vary by project status.

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02:45:40.010 --> 02:45:45.970

Jeremy Smith: A utilization factor, and ramping assumptions that reflect when data centers reach full load.

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02:45:46.580 --> 02:45:56.759

Jeremy Smith: Finally, we apply an hourly load profile developed using interval meter data from existing data centers to estimate the project's contribution to system peak demand.

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02:45:57.510 --> 02:45:58.500

Jeremy Smith: Next slide.

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02:46:02.000 --> 02:46:12.289

Jeremy Smith: For the 2025 IPR Forecast, the CEC standardized data collection across utilities and categorized projects into three consistent groups based on application status.

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02:46:12.740 --> 02:46:17.490

Jeremy Smith: These groupings form the basis for applying confidence levels in the forecast.

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02:46:18.270 --> 02:46:27.259

Jeremy Smith: Starting with the blue bar at the bottom of the chart on the left, the first category of projects are those with a signed agreement for electric service with the local utility.

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02:46:27.670 --> 02:46:35.130

Jeremy Smith: These projects have completed an engineering study, which provides information on required grid upgrades and associated timelines.

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02:46:35.510 --> 02:46:43.999

Jeremy Smith: For the 2025 IPR, there were about 5.1 gigawatts of data center projects with signed service agreements across all reporting utilities.

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02:46:45.490 --> 02:46:54.049

Jeremy Smith: Moving up that same chart, the green bar represents projects with an active application for electric service with the utility, but no signed agreement.

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02:46:54.230 --> 02:47:02.130

Jeremy Smith: When we developed last year's forecast, there were about 9.6 gigawatts of potential data center projects with active applications for service.

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02:47:03.170 --> 02:47:12.220

Jeremy Smith: Finally, the orange bar represents the third category of projects, those that have submitted an inquiry for electric service but have not yet filed a formal application.

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02:47:12.470 --> 02:47:17.990

Jeremy Smith: For the 2025 IPR, there was about 8.6 gigawatts of capacity in this group.

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02:47:18.900 --> 02:47:26.049

Jeremy Smith: Moving to the right on this slide, because not all proposed projects ultimately proceed to construction and energization.

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02:47:26.150 --> 02:47:33.490

Jeremy Smith: We applied confidence levels to each project group to estimate the portion of requested capacity expected to materialize.

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02:47:33.720 --> 02:47:44.359

Jeremy Smith: These competence levels were informed by utility input on historical completion rates, application attrition, potential duplication of requests, and other factors.

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02:47:45.230 --> 02:47:50.679

Jeremy Smith: We developed different confidence levels for our low, mid, and high case forecasts.

1117

02:47:50.880 --> 02:47:56.399

Jeremy Smith: Where the mid and high cases are used for our planning and local reliability scenarios, respectively.

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02:47:57.240 --> 02:48:04.530

Jeremy Smith: Projects with signed agreements were assigned the highest confidence, while inquiries were treated as an indicator of longer-term growth

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02:48:04.720 --> 02:48:09.140

Jeremy Smith: Rather than near-term demand, and thus were only included in our high case.

1120

02:48:10.060 --> 02:48:16.079

Jeremy Smith: We then applied a utilization factor of 67% to all potential data center demand growth.

1121

02:48:16.200 --> 02:48:21.399

Jeremy Smith: Which means the maximum expected demand is two-thirds of the requested capacity.

1122

02:48:21.530 --> 02:48:29.990

Jeremy Smith: This is based on observed operations of existing data centers, and we did not hear significant concerns about this assumption at the dog meeting.

1123

02:48:30.600 --> 02:48:37.819

Jeremy Smith: Finally, we apply a ramp rate, so new projects do not reach full demand immediately, but ramp up evenly over time

1124

02:48:38.260 --> 02:48:41.110

Jeremy Smith: As observed in existing data centers.

1125

02:48:41.460 --> 02:48:42.470

Jeremy Smith: Next slide.

1126

02:48:46.080 --> 02:48:56.799

Jeremy Smith: Putting all that together, this slide shows the 2025 IPR data center demand Forecast under the planning and local reliability Scenarios, with results broken out by project status.

1127

02:48:57.270 --> 02:49:06.019

Jeremy Smith: The stacked bars illustrate how requested capacity at the different stages of the energization process contributes to the final demand forecast.

1128

02:49:06.440 --> 02:49:22.220

Jeremy Smith: Projects with signed agreements contribute the majority of near-term demand, while projects at the active application and inquiry stages are increasingly discounted using the previously described confidence levels to reflect uncertainty in timing and completion.

1129

02:49:23.290 --> 02:49:31.430

Jeremy Smith: Under the 2025 IPR planning Forecast, or mid-case, data center demand grew by about 4.9 megawatts by 2040,

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02:49:31.570 --> 02:49:37.819

Jeremy Smith: Under the local reliability scenario, or the high case, demand growth reached approximately 7,400 megawatts.

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02:49:38.730 --> 02:49:42.829

Jeremy Smith: You'll notice the growth flattens in the mid-2030s in both cases.

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02:49:42.970 --> 02:49:56.179

Jeremy Smith: This plateau does not mean we expect data center development to stop. It reflects the fact that our project-based methodology does not assume additional projects beyond those that are currently visible in utility energization queues.

1133

02:49:56.840 --> 02:49:57.820

Jeremy Smith: Next slide.

1134

02:50:01.150 --> 02:50:17.760

Jeremy Smith: The final step is translating the annual demand forecast into an hourly forecast. We used multi-year interval meter data from existing data centers to develop representative hourly load profiles, normalized to each facility's observed maximum demand.

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02:50:18.180 --> 02:50:22.959

Jeremy Smith: The chart on the left compares the average load shape between weekdays and weekends.

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02:50:23.170 --> 02:50:32.470

Jeremy Smith: Well, the chart on the right bears the average load shape for the 3-month period with the highest observed load factor to the 3-month period with the lowest,

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02:50:32.640 --> 02:50:42.410

Jeremy Smith: The data show relatively high and sustained load factors, with little variation between daytime and nighttime hours, and relatively modest seasonal differences.

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02:50:43.030 --> 02:50:44.030

Jeremy Smith: Next slide.

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02:50:47.820 --> 02:50:56.920

Jeremy Smith: To date, the CEC has used application status as the primary input for reflecting how much of the potential data center demand will materialize.

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02:50:57.400 --> 02:51:08.040

Jeremy Smith: As you can see in the diagram on the left, as projects progress downward along the many energization milestones, we have increased confidence that the project will be completed.

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02:51:08.330 --> 02:51:17.709

Jeremy Smith: We've updated our project groupings and associated confidence levels over time as we've learned more, and we're looking at whether we can improve upon this again this year.

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02:51:18.470 --> 02:51:26.110

Jeremy Smith: As I discussed earlier, last year, the Group 1 projects, which have the highest confidence, were all those with a signed service agreement.

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02:51:26.480 --> 02:51:34.969

Jeremy Smith: If data are consistently available, we're considering incorporating additional milestones reflecting a significant financial commitment from the customer.

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02:51:35.250 --> 02:51:41.459

Jeremy Smith: For example, when the customer has committed funds, and the utility has begun procuring equipment for the project.

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02:51:42.300 --> 02:51:43.300

Jeremy Smith: Next slide.

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02:51:47.320 --> 02:51:54.269

Jeremy Smith: Here are some of the goals and areas the demand forecasting team is interested in expanding for the 2026 IPR.

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02:51:54.660 --> 02:52:04.669

Jeremy Smith: We started the cycle by increasing engagement with utilities and CCAs so we can better understand what information is available and where we can improve the forecast.

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02:52:04.910 --> 02:52:12.320

Jeremy Smith: We really appreciate the engagement so far this cycle, including all the participation at our dog last week, and the workshop today.

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02:52:12.420 --> 02:52:15.240

Jeremy Smith: And look forward to continuing these discussions.

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02:52:16.070 --> 02:52:21.120

Jeremy Smith: We'd like to improve data center project tracking beyond signed service agreements.

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02:52:21.250 --> 02:52:31.060

Jeremy Smith: Whether that be more significant financial commitments from developers, or milestones outside the energization process, such as permits or proof of land ownership.

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02:52:32.540 --> 02:52:38.740

Jeremy Smith: We're interested in building a longitudinal dataset to track project progress over time.

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02:52:38.930 --> 02:52:47.269

Jeremy Smith: This would ensure we can map projects in queues from one year to the next to better quantify how long these projects take to develop.

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02:52:48.350 --> 02:52:59.939

Jeremy Smith: We'd like to ensure we collect information on projects that are considering bringing their own generation or power purchase agreements, so those are properly reflected in downstream planning and procurement processes.

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02:53:01.020 --> 02:53:06.340

Jeremy Smith: Knowing that data centers of the future may operate differently than those of the past couple decades.

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02:53:06.490 --> 02:53:20.879

Jeremy Smith: We want to continue developing load profiles for the various data center types, for example, differentiating those focused on AI from co-locators, so those characteristics are reflected in our assumptions and hourly forecast.

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02:53:22.420 --> 02:53:31.590

Jeremy Smith: And finally, we want to improve the visibility that CCAs and other load-serving entities have into emerging data center projects in their service territories.

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02:53:31.970 --> 02:53:38.570

Jeremy Smith: More timely information on project status, timing, capacity, and development milestones.

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02:53:38.700 --> 02:53:48.060

Jeremy Smith: should help LSEs make better informed procurement and planning decisions, and reduce the risk of unnecessary costs and helping protect rate payers.

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02:53:48.950 --> 02:53:49.980

Jeremy Smith: Next slide.

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02:53:53.410 --> 02:54:03.620

Jeremy Smith: Now that you have some context for where our current forecast methodology is, and the areas we're working on improvements, I wanted to provide some key takeaways from last week's dog meeting.

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02:54:04.030 --> 02:54:15.239

Jeremy Smith: Through the presentations and panel discussion, we learned that the availability of additional development milestones, including land ownership and permit status, varies across utilities.

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02:54:15.380 --> 02:54:21.539

Jeremy Smith: Where available, these data points could provide valuable information for assessing project viability.

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02:54:22.710 --> 02:54:34.140

Jeremy Smith: We heard that project attrition is common, particularly before signed service agreements are in place, as well as the risk of double-counting projects in the earlier stages of development.

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02:54:34.490 --> 02:54:43.840

Jeremy Smith: This reinforces the importance of incorporating confidence levels into the forecast, and continuing to improve those assumptions as we track projects over time.

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02:54:45.140 --> 02:54:52.019

Jeremy Smith: We didn't hear significant concerns with the assumptions we currently apply to utilization and ramp rates.

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02:54:52.240 --> 02:55:00.300

Jeremy Smith: However, the panelists also recognize that, despite California being a long-standing epicenter for data centers and the technology industry.

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02:55:00.410 --> 02:55:13.569

Jeremy Smith: We're entering a new chapter with AI-focused data centers, and we have limited historical data to tell us whether these facilities will develop and operate in the same way as those that are represented in our historical data.

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02:55:14.510 --> 02:55:21.379

Jeremy Smith: We also heard that while grid infrastructure constraints remain a significant barrier to energizing new data centers.

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02:55:21.480 --> 02:55:31.449

Jeremy Smith: Other factors, such as zoning, water availability, environmental impacts, and community opposition may also affect weather and when projects are developed.

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02:55:32.740 --> 02:55:45.420

Jeremy Smith: And finally, we had a brief discussion about data centers bringing their own power, including on-site generation and power purchase agreements, and this raised questions about how these arrangements affect downstream planning and procurement.

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02:55:46.160 --> 02:55:47.130

Jeremy Smith: Next slide.

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02:55:50.610 --> 02:56:02.160

Jeremy Smith: Finally, I just want to share some additional resources on data centers. This slide includes links to our 2025 IPR, the CEC Energy Planning Library with documentation on the forecast.

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02:56:02.300 --> 02:56:09.759

Jeremy Smith: The data center Forecast Methodology paper that was published on the planning library that goes over the approach I just described in more detail.

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02:56:09.890 --> 02:56:13.620

Jeremy Smith: And finally, CC's dedicated data center webpage.

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02:56:14.600 --> 02:56:15.600

Jeremy Smith: Next slide.

1177

02:56:18.030 --> 02:56:27.030

Jeremy Smith: So that's where we are heading into the 2026 forecast cycle. We have a project-based methodology that provides a consistent framework across utilities.

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02:56:27.160 --> 02:56:31.470

Jeremy Smith: But there are several areas where better information could allow us to improve it.

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02:56:31.860 --> 02:56:43.169

Jeremy Smith: We'll be collecting updated lists of data center projects and utility energization queues, and presenting preliminary results for feedback at upcoming dog and IEPR workshops later this fall.

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02:56:43.910 --> 02:56:58.769

Jeremy Smith: I wanted to give special thanks to Matthew Cooper, Heidi Javanbahkt, staff at our sister agencies, and all the utilities and various stakeholders for helping shape the forecast approach over the last couple of years, and look forward to your continued engagement.

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02:56:59.270 --> 02:57:13.589

Jeremy Smith: Last week's dog discussion gave us some useful perspectives on improvement opportunities, and now we're looking forward to hearing directly from two LSEs about what they're seeing in their territories, and how they're approaching data center demand forecasting.

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02:57:14.900 --> 02:57:25.249

Jeremy Smith: With that, I'd now like to turn it over to our next presenter. Heather Dahler is the Deputy Director of Regulatory Compliance and Policy at San Jose Clean Energy.

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02:57:25.430 --> 02:57:27.359

Jeremy Smith: Heather, I'll turn it over to you.

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02:57:28.600 --> 02:57:32.130

Heather Dauler: Great, thank you so much, Jeremy. Next slide, please, Raquel.

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02:57:34.100 --> 02:57:52.590

Heather Dauler: Thank you. You'll see a little bit about San Jose Clean Energy on this slide. I certainly won't speak to all of it, but I will just point out for context that SJCE is a single jurisdiction CCA, and that we are administered by a department embedded within the City of San Jose itself.

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02:57:52.590 --> 02:58:01.430

Heather Dauler: We began operations in 2019. We currently serve around 350,000 accounts, representing hundreds of thousands of residents.

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02:58:01.430 --> 02:58:04.780

Heather Dauler: And over 60,000 businesses of all sizes.

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02:58:05.130 --> 02:58:21.589

Heather Dauler: Our municipal code expressly states that San Jose Clean Energy will serve residents and businesses, and we have served data centers and large lobes since our inception. We're currently serving about 11 smaller data centers now.

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02:58:21.780 --> 02:58:30.339

Heather Dauler: We, through the city, carefully tracked each pending large load project through five phases, from mere inquiry to under construction.

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02:58:30.760 --> 02:58:32.169

Heather Dauler: Next slide, please.

1191

02:58:35.940 --> 02:58:53.450

Heather Dauler: The City expects more large load over the next few years, and a few headlines tell the story of why and how we're responding. The first clip you see speaks to LS Power's construction of two new transmission lines in our area. Each is 12 miles and 1,000 megawatts.

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02:58:53.450 --> 02:59:01.119

Heather Dauler: About 17 miles of those 24 are going to be in San Jose. Expect energization in 2028.

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02:59:01.120 --> 02:59:09.720

Heather Dauler: With a subsequent phase laying 7 miles of new line in 2030 to connect downtown San Jose with the city of Santa Clara.

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02:59:10.030 --> 02:59:25.759

Heather Dauler: The second clip notes our novel agreement with our IOU PG&E. I believe that we are the only city in the state to have an agreement with an IOU that tracks energization of large load, provides a dedicated sea energy development team.

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02:59:25.780 --> 02:59:32.039

Heather Dauler: It helps fund process improvements and permitting, joint trenching, digital tracking, and more.

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02:59:32.430 --> 02:59:49.269

Heather Dauler: At the request of our City Council, which is also our CCA's governing body, San Jose is crafting a proposed framework for uniform data standards to address issues such as energy demand and sourcing, water use and efficient cooling, air quality and backup generators.

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02:59:49.450 --> 02:59:51.730

Heather Dauler: GC admissions, and more.

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02:59:51.870 --> 03:00:11.350

Heather Dauler: And as you note from the third headline, the city is moving forward with our community, and we're now executing a detailed community outreach plan. Taken together, San Jose's history with data centers, careful tracking of their growth, state investments in new transmission infrastructure in our city, our agreement with PG&E,

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03:00:11.350 --> 03:00:25.690

Heather Dauler: and these new developing uniform standards for data centers, all this reflects how seriously the city and San Jose Clean Energy take the challenge and opportunity of reliably and affordably serving our flows.

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03:00:26.150 --> 03:00:42.159

Heather Dauler: Accurate forecasting is therefore critical, not only for San Jose, but for ensuring that all local development are properly reflected in statewide planning. We're

especially grateful then to CEC staff for their outreach, engagement, and continued conversations with us. Next slide.

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03:00:44.300 --> 03:00:46.649

Heather Dauler: Regarding our local forecasting.

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03:00:47.190 --> 03:00:55.970

Heather Dauler: We also apply confidence levels based on where a project actually is in its development process. Achievement of milestones is key.

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03:00:56.070 --> 03:01:04.249

Heather Dauler: These milestone indicators help us distinguish projects that have a credible path forward from projects that are still highly unsettled.

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03:01:04.740 --> 03:01:20.259

Heather Dauler: At the same time, we deliberately exclude phases, such as inquiries, stall projects, withdrawn applications, and customers that choose direct access to the extent they can. This helps us to avoid overstating future load.

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03:01:20.550 --> 03:01:34.510

Heather Dauler: We receive project-specific information from our colleagues in the City's Planning, Building, and Code Enforcement Department, our coworkers in the Office of Economic Development, and directly from prospective customers. Next slide, please.

1206

03:01:36.890 --> 03:01:44.070

Heather Dauler: In the recent past, when we've compared our locally derived forecasts to state forecasts, we've seen significant differences.

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03:01:44.330 --> 03:01:58.459

Heather Dauler: For example, by 2028, the CEC projected load in San Jose increasing by 40%. The CPUC sees that increase as 100%, doubling our load, and we see it as 10%.

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03:01:58.870 --> 03:02:10.689

Heather Dauler: The biggest concern to us is the risk of procurement orders from the CPUC that overstate the actual need. If we had to procure for more than is needed, customers would be the ones paying the price.

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03:02:11.110 --> 03:02:23.630

Heather Dauler: So we're glad to hear that this fall, CE staff are going to check that the data center application queue has changed significantly before finalizing the forecast for proposed adoption in January.

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03:02:23.740 --> 03:02:30.950

Heather Dauler: We suggest that it's not just the application queue that requires a second look, the status of all projects in the queue.

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03:02:31.150 --> 03:02:32.530

Heather Dauler: Next slide, please.

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03:02:34.040 --> 03:02:54.009

Heather Dauler: Regarding data sharing, we do not currently receive project-level data from our IOU, so we cannot make an apples-to-apples comparison. The opaque nature of our conversations doesn't allow us to agree on a forecast, and two different forecasts for the same territory are submitted to the CEC.

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03:02:54.660 --> 03:03:14.240

Heather Dauler: Luckily, last month, the CPUC mandated changes that will have IOUs providing CCAs with specific information, such as project identifier addresses and contact information, capacity requested, expected energization data, and ramping schedule. And this is all through the RA meet and confer process.

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03:03:14.330 --> 03:03:23.880

Heather Dauler: We believe sharing this information will go far in bringing IOUs and CCA forecasts closer together, and in showing the CEC a clearer picture.

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03:03:24.780 --> 03:03:40.400

Heather Dauler: The CEC, IOUs, and CPUC will soon start finalizing the details and the implementation sharing template to fully implement this decision. We strongly urge that a CCA representative be included in this process.

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03:03:40.400 --> 03:03:51.580

Heather Dauler: As CCAs are not simply recipients of IOU data, we must reconcile the information with local permitting, customer, and development data to produce accurate tests.

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03:03:51.580 --> 03:04:05.330

Heather Dauler: Designing the process with both IOUs and CCAs at the table will improve data quality, reduce potential disputes, and provide the CEC a more reliable view of which large loads are likely to materialize.

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03:04:09.200 --> 03:04:19.960

Heather Dauler: Lastly, there are three specific suggestions we have to bolster statewide loan forecasting, particularly for large, fast-moving, and uncertain projects like data centers.

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03:04:20.170 --> 03:04:24.230

Heather Dauler: First, Make full use of public data sources.

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03:04:24.520 --> 03:04:25.760

Heather Dauler: And this makes...

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03:04:26.240 --> 03:04:35.410

Heather Dauler: leads to a question that Commissioner McAllister had during the no loads portion. There's already a meaningful amount of information

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03:04:36.770 --> 03:04:44.810

Heather Dauler: available through city webpages. The City of San Jose, the City of Hayford, and the City of Fremont all have

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03:04:44.840 --> 03:04:59.439

Heather Dauler: Even more cities know the status of large developments on their webpages. Cities such as, again, San Jose, Oakland, Long Beach, Sunnyvale, Santa Clarita, Pasadena, and San Francisco all have this public information on their websites.

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03:04:59.570 --> 03:05:11.810

Heather Dauler: Additionally, sites such as U.S. Data Center Tracker attempt to identify the location of data centers and provide information such as expected online dates and estimated power usage.

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03:05:11.900 --> 03:05:24.819

Heather Dauler: While the accuracy and timelines of data available through national or third-party websites can vary, certainly, these sources may provide a useful independent reference point for evaluating load forecasts provided by LSEs.

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03:05:25.060 --> 03:05:35.360

Heather Dauler: In particular, they could help identify potential discrepancies, corroborate the timing and magnitude of anticipated load, or flag projects that may warrant additional follow-up.

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03:05:35.420 --> 03:05:47.780

Heather Dauler: Bringing these sources and similar data sets together could give the CEC an earlier and more complete view of projects developing across the state, especially in higher impacted cities such as San Jose.

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03:05:49.260 --> 03:06:04.500

Heather Dauler: Second, we suggest to require a clearer project milestone before incorporating large loads into the forecast. And as Jeremy just mentioned, the CC is already considering improving project tracking beyond signed agreements, and we support this effort.

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03:06:04.500 --> 03:06:12.669

Heather Dauler: An interconnection application or an inquiry alone does not tell us enough about whether we'll actually move forward or when.

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03:06:13.120 --> 03:06:25.050

Heather Dauler: Similarly, applying confidence levels to any and all stages doesn't account for projects that stall for years, dramatically change size, or discontinue operations altogether.

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03:06:25.050 --> 03:06:35.769

Heather Dauler: We suggest forecasting large load only when certain milestones are met, such as building permits, completed SQL review, executed leases, or construction activity.

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03:06:35.770 --> 03:06:40.659

Heather Dauler: This will help distinguish projects that are relatively mature from those that are still unclear.

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03:06:43.860 --> 03:06:56.030

Heather Dauler: Third, continue refining the forecast through local input. Cities and CCAs often have information about project status and timing that may not be readily visible in statewide data sets.

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03:06:56.720 --> 03:07:12.719

Heather Dauler: A more systematic feedback loop with local agencies could help the CEC validate assumptions, identify changes earlier, and better assess the likelihood and timing of projects. CE staff is already moving forward here, and we appreciate their efforts to create stronger communication pathways.

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03:07:12.720 --> 03:07:22.780

Heather Dauler: Taken together, these three steps could ground large load forecasts in real project activity, while still giving the state enough lead time to plan for significant new loads.

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03:07:23.190 --> 03:07:24.420

Heather Dauler: Next slide, please.

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03:07:26.230 --> 03:07:40.349

Heather Dauler: Lastly, thank you to the CEC staff for your collaboration and willingness to hear and learn from San Jose Clean Energy. Forecasting large loads is still new and challenging, and we appreciate staff's efforts to continuously refine processes.

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03:07:45.930 --> 03:07:55.400

Jeremy Smith: Alright, thank you, Heather. Our next presenter is Jenny Conde, an expert analyst on the electric load forecasting team at Pacific Gas and Electric.

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03:07:55.520 --> 03:07:57.129

Jeremy Smith: Jenny, I'll turn it over to you.

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03:07:58.240 --> 03:08:00.020

Jenny Conde: Awesome. Thanks, Jeremy.

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03:08:00.350 --> 03:08:07.939

Jenny Conde: Hi everyone, my name is Jenny, I'm a demand forecaster at PG&E, and today I'll be talking about PG&E's data center Forecast.

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03:08:08.350 --> 03:08:09.540

Jenny Conde: Next slide, please.

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03:08:11.370 --> 03:08:22.800

Jenny Conde: Just an overview of the material I'll be covering today. First, I'll be discussing our Spring 2026 data center Forecast Vintage, including our methodology and results.

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03:08:22.950 --> 03:08:33.689

Jenny Conde: And then after that, I'll go into some of our ideas for improving our forecast, including updating our data center pipeline, and also assumptions around utilization and ramping.

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03:08:34.100 --> 03:08:35.060

Jenny Conde: Next slide.

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03:08:36.720 --> 03:08:42.219

Jenny Conde: Okay, so first diving into our Spring 2026 data center Forecast. Next slide.

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03:08:44.150 --> 03:08:50.990

Jenny Conde: The scope of our forecast is large transmission and distribution-connected retail data centers.

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03:08:51.180 --> 03:08:59.960

Jenny Conde: We forecast out 20 years, and the forecast includes energy consumption, peak demand, and also hourly load on an 8760 level.

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03:09:00.280 --> 03:09:06.819

Jenny Conde: We assume no impacts from on-site generation, that is not for emergency purposes.

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03:09:06.930 --> 03:09:13.459

Jenny Conde: And we also exclude projects that are only seeking standby service from PG&E's electric grid.

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03:09:14.050 --> 03:09:23.799

Jenny Conde: We have two primary data sources for our forecast, and the process for each of these is outlined in the graphic on the left, so I'll walk through each of those.

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03:09:24.130 --> 03:09:33.139

Jenny Conde: The first data source we have is a project tracker that tracks data center applications in PG&E's large load study process.

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03:09:33.260 --> 03:09:50.520

Jenny Conde: And so, from this project tracker, we're able to take ramp schedules from each project and apply capacity materialization, which is the equivalent to CEC's confidence levels, and that allows us to convert from the applied capacity to materialized capacity.

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03:09:50.730 --> 03:09:55.550

Jenny Conde: And we also can adjust the timing of projects based on their stages in the interconnection queue.

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03:09:56.020 --> 03:10:06.099

Jenny Conde: And then after that, we apply a capacity utilization factor to convert from capacity to peak demand, and then a load factor to convert from peak demand to average demand.

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03:10:06.230 --> 03:10:11.890

Jenny Conde: So we get a forecast of this average materialized demand from our project tracker data source.

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03:10:12.290 --> 03:10:22.129

Jenny Conde: And then the second data source we have is a database of existing data center projects that are already connected in PG&E's service area and their historical usage.

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03:10:22.290 --> 03:10:31.970

Jenny Conde: And with this data, we're able to develop a linear regression model, which I'll go into more detail on, but the results of that regression model is also average demand.

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03:10:32.090 --> 03:10:41.590

Jenny Conde: And so we're able to combine the two forecasts for average demand from these different data sources, and then apply load shapes to get our final 20-year forecast.

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03:10:42.320 --> 03:10:43.270

Jenny Conde: Next slide.

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03:10:46.180 --> 03:11:00.359

Jenny Conde: So this slide goes into a little bit more depth on that regression-based component of our forecast. So this is primarily enabled by a new database that we have that tracks PG&E's existing data centers.

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03:11:00.640 --> 03:11:13.149

Jenny Conde: And this database has about 120 data centers that we're tracking, and from that, we're able to pull about 10 years of monthly load data, specifically from large data centers that are connected in our service territory.

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03:11:13.150 --> 03:11:22.889

Jenny Conde: And then we develop a linear regression out 20 years. So the graph on the right, you can see that we have historical data going back to 2016.

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03:11:22.890 --> 03:11:29.629

Jenny Conde: And then, starting in 2026, out through 2045, we have a pretty, flat but increasing

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03:11:29.660 --> 03:11:33.379

Jenny Conde: Forecast for... for that load from existing data centers.

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03:11:33.560 --> 03:11:49.280

Jenny Conde: And then the way that we're able to combine this with our interconnection queue is by making the interconnection queue capacity incremental to 2025, so that when we add them together, we are avoiding double counting any load from the two different data sources.

1267

03:11:50.200 --> 03:11:51.090

Jenny Conde: Next slide.

1268

03:11:54.760 --> 03:11:57.920

Jenny Conde: And so this slide is showing the results of the

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03:11:58.100 --> 03:12:16.220

Jenny Conde: combined total and cumulative forecast from our Spring 2026 vintage. So, starting in 2031, on the graph, we have 17,000 gigawatt hours of cumulative load, and that corresponds to about 3 gigawatts of new data center capacity.

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03:12:16.660 --> 03:12:29.890

Jenny Conde: And you can see from the graph that data center, data center load is ramping up through the mid-2030s, and then around 2038, it starts to mostly flatten out.

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03:12:30.250 --> 03:12:33.060

Jenny Conde: And also worth noting that

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03:12:33.290 --> 03:12:43.439

Jenny Conde: The percentage of load from existing data centers is, in the long run, pretty small, and you can see the numbers outlined in the table on the right.

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03:12:43.480 --> 03:12:54.659

Jenny Conde: But existing data centers do play a pretty large role in the short-term forecast. In 2026 and 2027, existing data centers actually make up the majority of our forecast.

1274

03:12:55.870 --> 03:12:56.830

Jenny Conde: Next slide.

1275

03:12:59.650 --> 03:13:04.269

Jenny Conde: Okay, so now I'll go into some of our ideas for improving the forecast.

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03:13:04.480 --> 03:13:05.350

Jenny Conde: Next slide.

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03:13:08.490 --> 03:13:13.259

Jenny Conde: Our first set of ideas revolves around improving, revolves around the data center pipeline.

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03:13:13.450 --> 03:13:28.659

Jenny Conde: So, as I'm sure many of you know, the data center pipeline is highly volatile, and so the table that we're displaying here is from PG&E's second quarter earnings call, and the data is as of the end of June of this year.

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03:13:28.660 --> 03:13:47.279

Jenny Conde: And you can see that between March and June 2026, there's been a substantial change in our data center pipeline, increasing from 5 gigawatts to 12.7, so that's an almost 8 gigawatt increase. And this is primarily due to applications that PG&E has received through the 2026 cluster study.

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03:13:47.460 --> 03:14:00.819

Jenny Conde: So not only is the total scale of applications increasing in the pipeline, but also projects are moving farther along in pipeline stages, so you can see that we have more projects now in final engineering stages.

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03:14:01.270 --> 03:14:10.660

Jenny Conde: And one more thing to highlight on this slide that particularly impacts our forecast is that we have a new definition for final engineering.

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03:14:10.770 --> 03:14:25.279

Jenny Conde: And whereas... so whereas before, we were using a signed preliminary engineering study to indicate that entrance into the final engineering stage, PG&E has now shifted our definition to be assigned work performance agreement.

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03:14:25.340 --> 03:14:34.860

Jenny Conde: And... or the signed WPA reflects a higher financial commitment from the customer, so we're hoping that this will also reflect higher certainty that the project will move forward.

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03:14:36.020 --> 03:14:36.910

Jenny Conde: Next slide.

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03:14:40.040 --> 03:14:49.289

Jenny Conde: Our second set of, ideas revolves around utilization assumptions. This includes both load factor and capacity utilization.

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03:14:49.410 --> 03:15:07.690

Jenny Conde: And again, updating these assumptions is primarily driven by the new data that we have access to via our database on existing data centers. And after analyzing this data that we have, we're anticipating lowering both load factor and capacity utilization, particularly in the near term.

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03:15:08.230 --> 03:15:19.419

Jenny Conde: Load factor we're able to calculate very well for all of the large data center... data centers in PG&E service territory. So you can see, in the graphs on the right that load factor

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03:15:19.540 --> 03:15:30.399

Jenny Conde: Ultimately, flatlines to 90% in the long run by 2031, but is decreased in the short term and increases up to 90% by 2031.

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03:15:30.710 --> 03:15:37.669

Jenny Conde: Capacity utilization is similar, but it's a little bit more challenging to analyze than load factor.

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03:15:37.780 --> 03:15:46.959

Jenny Conde: For capacity utilization, we have to have information on both materialized load, which we do through our database, but also capacity from applications.

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03:15:47.010 --> 03:16:00.230

Jenny Conde: And tracking down that capacity from the applications can frequently be very challenging, especially when data centers have already been online for several years before we had our really robust project tracker that we do now.

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03:16:00.540 --> 03:16:10.099

Jenny Conde: So, similarly, in the graphs on the right, you can see that capacity utilization ultimately is at the 75% mark, but increasing between 2026

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03:16:10.310 --> 03:16:11.590

Jenny Conde: to 2031.

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03:16:12.600 --> 03:16:13.500

Jenny Conde: Next slide.

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03:16:16.200 --> 03:16:21.809

Jenny Conde: Finally, just to talk about some ideas we have around updating our ramping assumptions.

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03:16:22.280 --> 03:16:29.649

Jenny Conde: So, ramp schedules for data center projects come to us through Customer Applications, or PG&E's engineering teams.

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03:16:29.730 --> 03:16:49.589

Jenny Conde: And they come to us at the annual level. So the table on the left of this slide shows an example RAM schedule for a 50MW data center. So just walking through this example, you can see that 25 megawatts come online in 2027, and then another 25 in 2028, making it a grand total of 50.

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03:16:49.830 --> 03:17:01.839

Jenny Conde: So under our original framework, we've been assuming that a project's incremental capacity will come online fully in the calendar year, so we spread that throughout the year, but under this alternate framework.

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03:17:01.910 --> 03:17:20.889

Jenny Conde: Where we also have new information around monthly energization dates, we're able to integrate that energization date and start capacity when a data center actually comes online. And so, looking at this example here, say that this fake data center comes online in November 2027,

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03:17:20.980 --> 03:17:36.300

Jenny Conde: This translates into the orange line and the graph on the right, where capacity starts in November 2027, and will ramp up in the 12 months following that for its 2027 ramp schedule, and then 12 months again after that for the 2028 capacity.

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03:17:36.490 --> 03:17:47.019

Jenny Conde: And so, you can see that the data center reaches its final capacity of 50 megawatts significantly later in this alternate framework than it does in the original framework.

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03:17:47.280 --> 03:17:49.389

Jenny Conde: And so we're hoping that this...

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03:17:49.510 --> 03:17:54.379

Jenny Conde: Change, specifically in the short term, will help to improve our forecast accuracy.

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03:17:55.510 --> 03:17:56.410

Jenny Conde: Next slide.

1305

03:17:59.030 --> 03:18:10.110

Jenny Conde: that's all of my prepared material for today. I'm happy to take any questions at this time, and we can also take questions offline, and here's the contact information for myself and the data center team at PG&E.

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03:18:12.930 --> 03:18:22.110

Jeremy Smith: All right, great. Thank you, Jenny. So that concludes the presentations for the data center portion of the workshop. I'll actually turn it over to, Vice Chair Gunda.

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03:18:22.270 --> 03:18:24.689

Jeremy Smith: For discussion and questions from the dais.

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03:18:33.540 --> 03:18:36.849

Commissioner Andrew McAllister: Not sure if bister Gunda's still with us,

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03:18:36.850 --> 03:18:38.070

Jeremy Smith: So I'll turn it over to you, then.

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03:18:38.070 --> 03:18:51.189

Commissioner Andrew McAllister: Yeah, well, let's see, I get... that was... those presentations were great, including yours, Jeremy, appreciate all of that. And, it does seem like, there's been...

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03:18:52.070 --> 03:18:57.189

Commissioner Andrew McAllister: Kind of more interest, or more applications, certainly, more sort of a bigger pipeline.

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03:18:57.420 --> 03:19:01.430

Commissioner Andrew McAllister: Since the last time we looked at this last year.

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03:19:01.480 --> 03:19:17.359

Commissioner Andrew McAllister: And I guess, any qualitative ideas, or any qualitative sense of why that might be the case? And just, I'll reiterate, I really appreciate the kind of complementary presentations, especially from the perspective of the

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03:19:17.360 --> 03:19:27.620

Commissioner Andrew McAllister: you know, I mean, the seriousness of the IOU is sort of, you know, how you have to do, you know, maintain this really, tight visibility, and I really appreciate the regression approach that you've developed.

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03:19:27.810 --> 03:19:45.619

Commissioner Andrew McAllister: And found the interesting... the capacity-load factor kind of comparison really interesting and instructive as well. But also, from the local government and the CCA, you know, side, San Jose, just, you're using all the tools in your toolbox to figure out, you know, what projects are real.

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03:19:45.730 --> 03:19:50.289

Commissioner Andrew McAllister: And should be really prioritized into which ones are maybe less firm.

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03:19:50.430 --> 03:20:05.719

Commissioner Andrew McAllister: But, sort of a qualitative idea of kind of what, what the nature of the data center, the interest in developing data centers in your respective territories, looks like right now, and how it's changed in the last year or so.

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03:20:08.330 --> 03:20:11.459

Heather Dauler: Well, I'll... I'll speak to it a little bit.

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03:20:11.760 --> 03:20:27.000

Heather Dauler: We're talking to a lot of data centers of various sizes, and so we have some that are going to be what we call co-located, where they're just building a shell and having different tenants that are data centers, so that certainly is going to mean different forecasting than it would

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03:20:27.000 --> 03:20:35.150

Heather Dauler: large load data center. We're interestingly hearing from potential customers that are interested in bringing their own PPAs

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03:20:35.150 --> 03:20:50.410

Heather Dauler: And having the CCA sleeve for them, or bringing their own generation of some kind. So we're speaking with them about that, and hoping to work with CEC staff about how do we forecast that. We're talking with them about various creative ideas.

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03:20:50.520 --> 03:21:06.440

Heather Dauler: That they could have any on-site generation and backup, so it's just... what we're seeing is just... it's so specific to the customer, and each data center wants something kind of new, and as a local government, we're trying to just meet them wherever they are.

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03:21:07.740 --> 03:21:08.530

Commissioner Andrew McAllister: Fascinating.

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03:21:09.360 --> 03:21:20.030

Jenny Conde: Yeah, I can add from PG&E's perspective, I feel like there's been continued high interest in developing in PG&E service territory. You can definitely go back to our prior

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03:21:20.030 --> 03:21:33.389

Jenny Conde: investor slides, and you can see that the data center queue has been pretty cyclical, especially as PG&E goes through the preliminary engineering study process, and customers may drop out of the queue.

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03:21:33.420 --> 03:21:47.090

Jenny Conde: I feel like PG&E has been really good about working with customers to identify where they can develop and get online quickly, and so we do see customers applying or reapplying in those areas with renewed interest.

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03:21:47.230 --> 03:21:49.199

Jenny Conde: So yeah, that's what I would add from...

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03:21:49.500 --> 03:21:50.370

Commissioner Andrew McAllister: Interesting.

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03:21:50.660 --> 03:21:59.399

Commissioner Andrew McAllister: That's fascinating and makes sense, and, you know, kudos to leadership at PG&E for sort of prioritizing the...

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03:21:59.730 --> 03:22:04.469

Commissioner Andrew McAllister: Figuring out where there's enough headroom in the grid to productively

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03:22:04.750 --> 03:22:15.130

Commissioner Andrew McAllister: direct folks who do want to interconnect, and, you know, develop. I guess there... I'm not sure you're going to have visibility onto this, but I guess I'm curious,

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03:22:16.000 --> 03:22:27.820

Commissioner Andrew McAllister: you know, California, we have such a key part of the digital economy, and, you know, obviously there are just lots of sophisticated customers with a lot of compute needs, in Silicon Valley and throughout the state.

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03:22:28.270 --> 03:22:37.789

Commissioner Andrew McAllister: Is there... do you have a sense of how... what type of compute these data centers are?

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03:22:39.450 --> 03:22:47.460

Commissioner Andrew McAllister: would satisfy, or are aiming to satisfy? Like, are things moving towards kind of an Agentic, like a real-time...

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03:22:47.660 --> 03:22:51.209

Commissioner Andrew McAllister: Applications,

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03:22:51.580 --> 03:23:04.740

Commissioner Andrew McAllister: Versus, you know, the sort of raw compute of LLM population kind of thing. Like, is there a particular reason you're seeing, that's driving data centers in particular towards this

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03:23:04.740 --> 03:23:13.389

Commissioner Andrew McAllister: towards California as, you know, urban centers, say, in particular, or, or just geographically, kind of, what is that looking like?

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03:23:13.650 --> 03:23:24.980

Heather Dauler: I can't speak to the computation question, Commissioner, but I will say that we do see a lot of data centers coming to San Jose because we're having those new transmission lines.

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03:23:25.090 --> 03:23:39.840

Heather Dauler: That I mentioned that are going to be online in 2 years, so the infrastructure is going to be here. Additionally, Silicon Valley, as you know, we traditionally have the tech talent and the tech facilities, so it's always been a hub.

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03:23:39.840 --> 03:23:46.859

Heather Dauler: for innovation, and so those are, I think, some of the two main reasons why data centers are looking at San Jose specifically.

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03:23:46.860 --> 03:23:50.129

Commissioner Andrew McAllister: The same agglomeration that we've been seeing for decades, really.

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03:23:50.930 --> 03:23:51.660

Commissioner Andrew McAllister: Yeah.

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03:23:52.100 --> 03:24:05.300

Jenny Conde: Yeah, I'll definitely second the proximity to customers, I think is huge for developing in PG&E service territory. In terms of the type of compute for data centers, I think we don't have great visibility into that yet.

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03:24:05.310 --> 03:24:19.500

Jenny Conde: But PG&E is working to understand the different types of data centers that are working to develop. I think, like Heather said, there is a lot of interest in co-located facilities, but additionally, our customer-facing team recently sent a survey

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03:24:19.500 --> 03:24:35.019

Jenny Conde: to data center customers to begin collecting that information on data center type. So, it'll take some time to gather that information from our customers, and it may not be comprehensive, but we're hoping to incorporate some type-specific assumptions into our forecasts in the future.

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03:24:35.020 --> 03:24:45.880

Heather Dauler: And if I could just add one more thing, Commissioner, what's... what we're seeing that's been interesting, and as you've probably seen in this, there are some cities within California that are banning data centers.

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03:24:45.880 --> 03:24:58.999

Heather Dauler: Some that are considering banded data centers, some communities that are very active around data centers, and certainly we don't know if data centers would even site in these cities, but to the extent they would have, now they're not.

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03:24:59.000 --> 03:25:12.259

Heather Dauler: And so maybe they would have gone from Southern California IOU to PG&E, maybe they're moving here, maybe they're moving out of the state altogether. This, to us, just adds to the uncertainty.

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03:25:12.840 --> 03:25:30.759

Commissioner Andrew McAllister: Interesting. Really specifically, I guess what I'm asking about is latency, like, is that driving, you know, the need for a quick turnaround compute? I mean, with fiber, it may be just... maybe it not even be a relevant question, you know, in the future, but, just kind of trying to understand,

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03:25:31.400 --> 03:25:44.180

Commissioner Andrew McAllister: California's position and whether there's sort of a distinguishing set of factors about who's, you know, what types of data centers are locating here versus, say, you know, Nevada or approximate states or whatever, but...

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03:25:44.180 --> 03:25:57.029

Heather Dauler: latency is a concern, but I don't have a sense, like Jenny was saying, it's difficult to understand what exactly they might be doing once they, are fully operational and ramped up, and... and so it's some... I have heard that it's...

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03:25:57.190 --> 03:26:07.010

Heather Dauler: an issue for some data centers, and by an issue, I mean it's something that they want to have to ensure that low latency. I just can't say that it's that for every single person who wants to come in.

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03:26:07.190 --> 03:26:12.289

Commissioner Andrew McAllister: Fair enough, yeah, great. Thanks a lot, really appreciate it, and then, pass over to Vice Chair Gunda.

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03:26:12.630 --> 03:26:26.509

Vice Chair Siva Gunda: Thank you, Commissioner. Thanks again for, this panel. Thanks, Jeremy, for, kind of walking through those questions. I think maybe, just kind of building off of the theme of the previous, panel and conversation.

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03:26:26.560 --> 03:26:33.910

Vice Chair Siva Gunda: Maybe kind of, Heather, starting with you, you know, just from the CCA perspective, you know.

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03:26:34.300 --> 03:26:40.039

Vice Chair Siva Gunda: The amount of data center load that we ultimately bake in has real consequences.

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03:26:40.100 --> 03:26:55.970

Vice Chair Siva Gunda: For, a CCA that's, you know... could you share a little bit on, you know, how do you see, the data access, that you have, you know, the visibility,

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03:26:56.270 --> 03:26:59.529

Vice Chair Siva Gunda: how can... I think, maybe the...

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03:27:00.090 --> 03:27:12.019

Vice Chair Siva Gunda: The through line for me is, like, how would you be best positioned to support data center development in a productive, constructive way, and be a part of the forecasting efforts?

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03:27:13.820 --> 03:27:17.849

Heather Dauler: when I think of that question, Vice Chair, and I think about data.

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03:27:17.970 --> 03:27:32.740

Heather Dauler: an ideal situation would be where we sit at the table with PG&E and we share project-level information, to the extent that we can, understanding customer confidentiality or privacy. But to be able to say.

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03:27:32.900 --> 03:27:56.519

Heather Dauler: we see Project X, and here's Project X, and to share that local information is invaluable, particularly because we have that on-the-ground intelligence. We can literally

drive by a site and say, it hasn't started construction, there's no way it's going to be online next year. So to be able to share that information and then take the shared information and deliver to the CEC,

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03:27:56.520 --> 03:27:59.800

Heather Dauler: The same forecasts, or very similar forecasts.

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03:27:59.800 --> 03:28:05.459

Heather Dauler: I think that will go really far in helping not only our future customers, but forecasting as well.

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03:28:06.240 --> 03:28:14.859

Vice Chair Siva Gunda: Yeah, thanks, Heather. Ginny, just kind of like to follow up on that spirit of, just kind of understanding the project timelines and feasibility,

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03:28:14.960 --> 03:28:28.699

Vice Chair Siva Gunda: Does PG&E have access to, permitting or other developmental milestones outside of the energization process that you collect to assess the viability of the projects?

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03:28:29.910 --> 03:28:40.019

Jenny Conde: Yeah, that's a good question. We don't have access to permitting data currently. We do track up until construction is started.

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03:28:40.790 --> 03:28:51.940

Jenny Conde: That's kind of the latest stage that we're tracking so far. I think tracking permitting data would be really nice, but kind of as Jeremy has alluded to as well, this is really challenging since

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03:28:52.010 --> 03:29:02.390

Jenny Conde: PG&E service territory is very large, and cities may have different data sharing standards, and so if we're trying to develop a single, streamlined methodology across

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03:29:02.460 --> 03:29:19.660

Jenny Conde: data that is not standardized, that is really challenging for us. And so, even without the permitting data, we are trying to refine our assumptions around the confidence levels and capacity materialization to try to be more accurate in terms of what will actually come online, and

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03:29:19.740 --> 03:29:23.200

Jenny Conde: Further develop our assumptions on those development timelines.

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03:29:23.450 --> 03:29:27.000

Jenny Conde: To just create an overall more accurate forecast, even without that data.

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03:29:28.130 --> 03:29:35.179

Vice Chair Siva Gunda: Yeah, great. Jenny, I think the other piece, you know, one of the pieces that came up in the previous conversation was

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03:29:35.230 --> 03:29:47.170

Vice Chair Siva Gunda: The nature of these large loads are changing, meaning, you know, that you suddenly get a huge charging station that is different, and then how fast it can be built, you know.

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03:29:47.170 --> 03:30:07.100

Vice Chair Siva Gunda: versus, like, how long it took previously. Are you seeing any meaningful difference in the historical way data center growth happened in the characteristics of how long it took? You know, what kind of energization process happened versus the more AI-centered, you know, data centers that are growing now?

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03:30:07.590 --> 03:30:09.959

Vice Chair Siva Gunda: Any meaningful difference in the last several years?

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03:30:10.650 --> 03:30:25.659

Jenny Conde: I think it's hard to speak specifically to AI data centers. I do believe that a lot of the data centers that are expressing interest in PG&E service territory aren't necessarily AI only, and so I think we still have a mixed variety of the types.

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03:30:25.920 --> 03:30:43.349

Jenny Conde: However, this might be an obvious statement, but development is changing significantly since these projects are so massive, and this is the first time we're seeing this really large scale in PG&E service territory. So even though we're tracking 120 data centers that currently exist, they're all pretty small.

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03:30:43.630 --> 03:30:48.360

Jenny Conde: Maybe a few tens of megawatts is the biggest one that we have.

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03:30:48.520 --> 03:31:03.420

Jenny Conde: And the applications that we're seeing are coming in significantly larger, and there's a lot of them. So, development timelines, because of that scale, are just rapidly changing, and projects are developing in new areas, so that's something that PG&E is

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03:31:03.640 --> 03:31:06.880

Jenny Conde: Continuing to... to study in the engineering process.

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03:31:06.920 --> 03:31:18.129

Heather Dauler: And I would agree with Jenny that it's difficult to know if development timelines have changed significantly, partly because I think a lot of the industry is changing significantly.

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03:31:18.160 --> 03:31:31.839

Heather Dauler: We have heard that one of the things that data centers, prospective data centers, are considering are technological advances in cooling, and in chips, and in some of the parts that they use. So that may affect

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03:31:31.840 --> 03:31:38.759

Heather Dauler: The service that they provide, which is going to affect how they're built, which is going to affect development timelines.

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03:31:38.820 --> 03:31:46.780

Heather Dauler: So that's something that we're tracking. I would say probably the common thread, though, is they would like to get online very quickly.

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03:31:47.520 --> 03:32:06.909

Vice Chair Siva Gunda: Got it, alright. So maybe there's a last question, and I'll pass it to Jeremy, Heather and Jenny, if you would entertain me on this. In terms of, you know, just kind of bring your own power, the flexible connection, you know, following the Rule 30, the efforts by PG&E, it does,

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03:32:07.200 --> 03:32:23.310

Vice Chair Siva Gunda: it becomes important for figuring out what load shows up for who, you know, whether it's for San Jose Clean Energy or it's PG&E. Can you speak to... I mean, I think we already spoke to this a little bit,

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03:32:23.560 --> 03:32:39.440

Vice Chair Siva Gunda: how is... how are those discussions coordinated, between, you know, maybe, Jenny, you can start with, like, you know, PG&E and all the different, you know, CCAs or others in your overall footprint, and how those...

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03:32:40.790 --> 03:32:56.450

Vice Chair Siva Gunda: applications ultimately hit who, and how... how prepared people are, right? Versus, you know... Yeah, just want to understand a little bit more on how it's coordinated, and are the, you know, what's working well, what are the opportunities to make it better?

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03:32:58.130 --> 03:33:09.829

Jenny Conde: Yeah, yeah, great question. So we do share data with the CEC and the CCAs. We have existing processes for both of those groups of entities.

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03:33:10.020 --> 03:33:23.359

Jenny Conde: And so, it's our understanding that PG&E is sharing the information permissible under the current customer privacy, data security, and market sensitivity rules, so we're kind of working in a confined space there.

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03:33:23.410 --> 03:33:34.210

Jenny Conde: But we do share all applications for transmission service with the CCAs. This was part of a Rule 30 settlement that was a few years ago, and then,

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03:33:34.210 --> 03:33:51.459

Jenny Conde: Also, Rule 30, there's a pending decision that would allow us to share more, specifically, an updated project list on a quarterly basis. So we're kind of waiting for that particular decision to come in, but in the meantime, the CCAs do have access to those transmission-level applications that we receive.

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03:33:53.200 --> 03:33:59.429

Vice Chair Siva Gunda: before we go to Heather, the constraint comes from PUC process, or where does the confidentiality constraint come from?

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03:33:59.970 --> 03:34:13.570

Jenny Conde: Yeah, it's a combination. So we do have, like, NDAs with customers that we sign where we're not supposed to share their information, and then we're just working under the PUC guidelines, and

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03:34:13.950 --> 03:34:20.370

Jenny Conde: we're, yeah, waiting for that Roll30 position to come in for us to send that data that is more granular and more frequent.

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03:34:22.210 --> 03:34:31.109

Heather Dauler: I would say, in response that while PG&E, as Jenny noted, has NDAs with customers, we have NDAs with PG&E, and

1398

03:34:31.320 --> 03:34:49.640

Heather Dauler: IOUs and CCAs have been sharing customer-level data for years, and so our position is a little different. Our position is that we can share that information now, but as Jenny noted, we have a proposed settlement agreement in front of the CPUC where we can share a lot of the information.

1399

03:34:49.640 --> 03:35:06.419

Heather Dauler: So we've sat down and we've talked about that. We're just waiting for that commission to rule. So, certainly, there is opportunity. We're, heartened by the latest CPUC decision that will have that specific project information being shared on the RA meeting confers.

1400

03:35:06.420 --> 03:35:14.610

Heather Dauler: We could also get that information through the ARI meet and confers, that would be great. So I think we're moving in that direction, but we're just not quite there yet.

1401

03:35:15.900 --> 03:35:33.559

Vice Chair Siva Gunda: This is great. Thank you, as always, for being accessible and, you know, being a part of these workshops. It's so great to hear directly from experts, and, you know, Jeremy, I'll just give you a chance to close us off with, like, maybe a quick kind of reflection on this panel from you, and, you know, how you see...

1402

03:35:33.570 --> 03:35:47.179

Vice Chair Siva Gunda: you know, you mentioned that CC is interested in looking beyond energization process. You know, anything you want to close us off with, like, you know, what you see those additional indicators are of project viability based on this conversation?

1403

03:35:48.640 --> 03:36:07.020

Jeremy Smith: Yeah, sure. First of all, I mean, just the participation and engagement from, you know, the utilities and other stakeholders has just been so great in terms of helping us improve our methodology, and if it weren't for that, we wouldn't be focused on, like, what else can we get outside the energization process. We're hearing that it is important, so...

1404

03:36:07.020 --> 03:36:13.569

Jeremy Smith: We are currently scoping a new work authorization to evaluate whether we can systematically identify

1405

03:36:13.630 --> 03:36:17.400

Jeremy Smith: And compile some of that information across jurisdictions.

1406

03:36:17.610 --> 03:36:23.239

Jeremy Smith: We've already seen how this can work in some areas, and we're just evaluating how well it works

1407

03:36:23.350 --> 03:36:36.169

Jeremy Smith: where development records are less readily available or structurally different. As Jenny mentioned, it could be, you know, very different, and we want to create a, you know, a cohesive and consistent process for that before

1408

03:36:36.190 --> 03:36:47.379

Jeremy Smith: We then consider or evaluate whether or not that information could be incorporated into our forecast, but we definitely are putting in that effort and our due diligence to see what's available, what can we compile.

1409

03:36:47.460 --> 03:37:01.929

Jeremy Smith: And then, look for feedback in the future, depending on the success of that effort to compile the information, how we should consider adjusting our confidence levels, or things like that, and incorporating that beyond just application status.

1410

03:37:04.780 --> 03:37:07.210

Vice Chair Siva Gunda: Excellent, thank you so much. Jimmy, back to you.

1411

03:37:09.530 --> 03:37:11.240

Jeremy Smith: Great, thank you.

1412

03:37:11.640 --> 03:37:25.720

Jeremy Smith: So, I know we're a little short on time. We did get some questions in the Q&A, and so I'll go through some of those. If you do have another question for any of the presenters, please submit that through the Q&A feature.

1413

03:37:25.910 --> 03:37:29.219

Jeremy Smith: I'll go through. So, I did actually answer one already, and I think it's worth

1414

03:37:29.410 --> 03:37:32.040

Jeremy Smith: Kind of saying out loud,

1415

03:37:32.260 --> 03:37:42.879

Jeremy Smith: I got a question about the hourly load shapes that were in my presentation. Where did those come from? So we've, collected hourly interval data from the IOUs.

1416

03:37:42.980 --> 03:37:55.340

Jeremy Smith: We have a sample of, I believe it's about 75 data centers that we used across several years of data, and we, aggregated that, to produce those hourly load shapes. We have not

1417

03:37:55.540 --> 03:38:03.709

Jeremy Smith: We don't have information as to the type of data center, so we can't differentiate unique profiles by data center type just yet.

1418

03:38:03.880 --> 03:38:18.110

Jeremy Smith: But as Jenny said, you know, folks are starting to survey and collect that information, and maybe if that effort is successful, we can go back in and incorporate that and look for meaningful differences. We've tested some things when it comes to maybe data center size.

1419

03:38:18.690 --> 03:38:28.290

Jeremy Smith: But again, the sizes of the data centers in our existing data are not as different as what we're seeing in the future energization queues.

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03:38:28.320 --> 03:38:44.849

Jeremy Smith: So, you know, a difference between a 5 and a 10 megawatt data center is probably not going to be as meaningful for our load shape analysis as, say, a 5 megawatt data center from a 100 megawatt data center, or something like that. So we'll continue to work on that, and share more as we figure that out.

1421

03:38:45.020 --> 03:38:47.530

Jeremy Smith: Let's see, we got...

1422

03:38:49.440 --> 03:39:06.469

Jeremy Smith: Got a question from Jesse. You noted the plateau in the data center load that emerges around, I believe, 2030 does not reflect the belief that data center growth will plateau, just a reflection of the methodology. I'm wondering if continued data center growth is then accounted for somewhere else in the forecast.

1423

03:39:06.640 --> 03:39:10.660

Jeremy Smith: Or if the methodology effectively does forecast a growth plateau.

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03:39:11.100 --> 03:39:12.819

Jeremy Smith: Thanks for that question.

1425

03:39:12.990 --> 03:39:28.030

Jeremy Smith: Yeah, so since the forecast is currently built just on these known existing projects in the queue, it does naturally plateau. We are not adding an additional sort of growth factor or anything like that on top of it.

1426

03:39:28.210 --> 03:39:38.139

Jeremy Smith: But I will note that the intention of including, you know, projects without signed agreements, say, just at the active application stage.

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03:39:38.170 --> 03:39:46.159

Jeremy Smith: Or, you know, something like that. In our, you know, higher case, the local reliability scenario is really meant to be a reflection of

1428

03:39:46.160 --> 03:39:59.129

Jeremy Smith: of what some of that growth might be. It is discounted, but that right now is the way that we're trying to account for potential future growth, is just looking at projects that aren't as far along in that process.

1429

03:40:00.190 --> 03:40:08.539

Jeremy Smith: Are there any data sources available to determine the portion of data centers that go from signed agreement to energization?

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03:40:08.590 --> 03:40:18.259

Jeremy Smith: for verifying and updating the inputs and assumptions. Haynes, thanks for that question. Not that I'm aware of outside of the data that we collect from the utilities.

1431

03:40:18.260 --> 03:40:29.129

Jeremy Smith: This is part of why we're wanting to improve our ability to track projects over time, so not just what's in the queue to be energized, but then also once it is energized.

1432

03:40:29.130 --> 03:40:39.299

Jeremy Smith: You know, having this database of existing data centers and their timelines and how they step through, and so that way we can sort of continue to update our assumptions about

1433

03:40:39.300 --> 03:40:52.219

Jeremy Smith: how quickly these energize, and other things like ramp rates and utilization. So that will only improve over time as we get more historical data, but as of right now, that's the basis for how we do that.

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03:40:53.620 --> 03:41:02.689

Jeremy Smith: Priya, for PG&E, will the work performance agreement, rather than the preliminary engineering study now be the criteria for a project?

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03:41:02.860 --> 03:41:16.640

Jeremy Smith: to be categorized in CEC's Group 1. I could actually answer this, but Jenny, if you wanted to add anything, we're still considering restructuring that. We've, sort of adjusted the thresholds

1436

03:41:16.800 --> 03:41:31.350

Jeremy Smith: for our groups from the 2024 into the 2025 IPR, we're going to collect the new project queues and what other available information the utilities have, and then consider where we want to draw those lines again for this year. So it may change.

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03:41:31.370 --> 03:41:39.020

Jeremy Smith: We are certainly interested in that highest group, or the grouping with the highest, you know, certainty.

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03:41:39.140 --> 03:41:44.509

Jeremy Smith: To be something with maybe more financial commitment on the part of the developer, the customer.

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03:41:44.530 --> 03:42:03.900

Jeremy Smith: And so, using something where there's already been funds committed to, you know, purchasing equipment for the infrastructure upgrades and things like that certainly is a higher level of confidence that that project is going to go through, so that's something that we're going to consider, but we haven't yet set on what those thresholds will be.

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03:42:03.920 --> 03:42:09.049

Jeremy Smith: For the new groups 1, 2, and 3, for this cycle. Jenny, did you want to add anything else?

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03:42:09.490 --> 03:42:10.590

Jeremy Smith: From PG&E.

1442

03:42:11.480 --> 03:42:24.390

Jenny Conde: No, I think you covered it well. I will say that, in our past forecasting cycle, we've tried to align with the CEC on their groups as well, so with our

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03:42:24.460 --> 03:42:33.420

Jenny Conde: changing definition of final engineering. We've been keeping CEC informed on how that may impact their forecasting groups as well.

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03:42:33.550 --> 03:42:46.950

Jenny Conde: And also acknowledge that the standardization across many entities and utilities can be challenging. So, yeah, we'll... we'll see where the CEC goes with that, but yeah, our definition of final engineering is updated.

1445

03:42:48.700 --> 03:42:58.460

Jeremy Smith: Great. Thanks, Jenny, and I'll actually invite Jenny or Heather, if either one of you want to help me answer this question. I can go last if you have something you wanted to say, but we got a question from Claire Broome that says.

1446

03:42:58.560 --> 03:43:07.040

Jeremy Smith: What do you know about projected daily load shapes for data centers, especially possible flexibility in managing load shapes or not?

1447

03:43:10.510 --> 03:43:12.099

Jenny Conde: I can... I can start on that one.

1448

03:43:12.520 --> 03:43:15.170

Jenny Conde: So, because...

1449

03:43:15.230 --> 03:43:29.550

Jenny Conde: PG&E does have a good database now on our existing data centers. We're able to analyze daily load shapes, and so we've started to do that analysis. This is something that we would like to do more in future forecasting cycles upon

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03:43:29.550 --> 03:43:42.389

Jenny Conde: our preliminary analysis, we found that there were actually more anomalies in daily load shapes than we might have anticipated. So something that we're keeping an eye on, and again, like, want to increase the robustness of that analysis.

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03:43:42.390 --> 03:43:55.179

Jenny Conde: But generally, our load shapes are about in alignment with the CECs in terms of load factor, and we also incorporate seasonality, but are generally relatively flat throughout the year.

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03:43:55.810 --> 03:44:05.210

Heather Dauler: I would agree with Jenny, it's something that we're continuing to look at and to speak with current and prospective customers about how we can work with them to flexibly manage that.

1453

03:44:09.190 --> 03:44:22.719

Jeremy Smith: All right, great. I don't have anything to add to that, and that looks like that's the last of our questions in the Q&A, so thanks again, Jenny and Heather, for presenting and supporting us in our efforts to continue to improve our data center forecast.

1454

03:44:22.960 --> 03:44:26.249

Jeremy Smith: So with that, I'll turn it over to Sandra.

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03:44:27.580 --> 03:44:46.810

Sandra Nakagawa: Thanks, Jeremy, thank you to all our presenters, moderators, and commissioners for making this workshop possible. We are now going to move on to our public comment period. So, one person per organization may comment, and comments are limited to 3 minutes per speaker. Please note that we will not be responding to questions during the public comment period.

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03:44:46.920 --> 03:44:52.579

Sandra Nakagawa: The Workshop notice provides information on how to contact us with any follow-up questions you may have.

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03:44:52.620 --> 03:45:11.229

Sandra Nakagawa: So at this point, if you would like to make a comment, you can use the raise hand feature on Zoom, and that'll let us know that you're gonna get in queue. We'll then call on you, open your line for you to make comments. If you've dialed in by phone, you can hit star 9 to raise your hand, and then star 6 to mute and unmute your phone line.

1458

03:45:12.890 --> 03:45:19.649

Sandra Nakagawa: For folks on Zoom, we're gonna go there first. I'm gonna look for people with, raised hands for public comment.

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03:45:27.090 --> 03:45:30.530

Sandra Nakagawa: Alrighty, first we're gonna go to Kate Morsoney.

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03:45:33.050 --> 03:45:35.860

Sandra Nakagawa: Kate, I've unmuted your line, can you see if it's working?

1461

03:45:36.010 --> 03:45:38.079

Katy Morsony: Yes, can you hear me?

1462

03:45:38.290 --> 03:45:44.869

Sandra Nakagawa: Yes, we can hear you. Alright, I'm going to start the 3-minute timer. You can see that in the upper right-hand corner of Zoom. Go ahead.

1463

03:45:44.870 --> 03:45:53.710

Katy Morsony: Great, thank you. Good afternoon, Commissioners. My name is Katie Morsoney. I am the Director of Policy and Senior Counsel at the California Community Choice Association.

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03:45:54.080 --> 03:46:13.949

Katy Morsony: CalCCA represents 24 community choice aggregators who, as load-serving entities, are directly impacted by the IPR Forecast as it forms the basis for resource adequacy and procurement allocations. CalCCA supports a load forecast that is accurate, transparent, and responsive to California's rapidly changing demand landscape.

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03:46:14.550 --> 03:46:27.460

Katy Morsony: First, CalCCA appreciates the Commission's increased coordination with CCAs on large load issues and encourages the Commission to engage with all CCAs to gather information that can be used to identify and forecast new loads.

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03:46:27.660 --> 03:46:37.389

Katy Morsony: CCAs, utilities, large customers, and other informed stakeholders may possess different and important information about the status, timing, and likelihood of a project.

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03:46:37.550 --> 03:46:55.940

Katy Morsony: CCAs are uniquely positioned to provide insight into large load developments within their communities through their relationships with local cities, counties, and large load customers. CCA load forecasts should be considered so that the IPR reflects the broadest and most informed assessment of prospective large load development.

1468

03:46:56.190 --> 03:47:16.030

Katy Morsony: In addition, the nature of data center loads necessitates a unique process for allocating procurement requirements associated with these loads to LSEs to ensure that these requirements are allocated fairly and do not result in over-procurement and associated unnecessary cost or under-procurement and associated reliability risk.

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03:47:17.020 --> 03:47:29.059

Katy Morsony: Second, the CEC should distinguish known loads from the broader universe of load interconnections and refrain from including them in the planning scenario and any future scenarios used to drive resource procurement

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03:47:29.060 --> 03:47:38.910

Katy Morsony: Until there is sufficient evidence of their likelihood, magnitude, and timing, and until their assurances that these loads are not already accounted for elsewhere in the forecast.

1471

03:47:39.010 --> 03:47:53.309

Katy Morsony: The Commission took a well-informed and measured approach to known loads in the 2025 IPR by excluding known loads from the planning scenario. One year later, the observed delays and known loads coming online shows that the Commission's approach was justified.

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03:47:53.330 --> 03:48:04.299

Katy Morsony: CalCCA continues to support this approach going forward until we have a process that provides sufficient confidence that such lows will materialize, when they will materialize, and at what magnitude.

1473

03:48:04.630 --> 03:48:22.709

Katy Morsony: The future is highly uncertain, and we need transparent, milestone-based approaches that incorporate information from all informed stakeholders, and clearly identifies which loads are included in which forecast scenario. That will give the state a forecast that is both responsive to economic development and credible for resource planning. Thank you so much for your time.

1474

03:48:24.220 --> 03:48:27.820

Sandra Nakagawa: Thank you, Katie. We're now gonna go to Michael Boccadoro.

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03:48:28.110 --> 03:48:33.489

Sandra Nakagawa: Michael, your line is unmuted. You'll have to unmute from your end. Do you want to check to see if that's working?

1476

03:48:33.490 --> 03:48:34.310

Michael Boccadoro: Yes.

1477

03:48:34.410 --> 03:48:35.009

Michael Boccadoro: Can you hear me?

1478

03:48:35.010 --> 03:48:37.819

Sandra Nakagawa: We can hear you loud and clear. I'm gonna start the timer now.

1479

03:48:37.820 --> 03:48:48.889

Michael Boccadoro: Perfect. Michael Boccadoro, on behalf of the Ag Energy Consumers Association, we represent agricultural, food and fiber processing, and water agency customers.

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03:48:48.890 --> 03:48:57.880

Michael Boccadoro: in PG&E and Southern California Edison Service Territories here in California. I just want to follow up on the question that I put into the,

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03:48:58.240 --> 03:49:21.769

Michael Boccadoro: chat earlier today, and that is we are very interested in making sure the implications of the Sustainable Groundwater Management Act are reflected as we move forward with energy demand and, load in California. We expect our preliminary analysis shows as much as an 18-20% reduction

1482

03:49:21.770 --> 03:49:31.269

Michael Boccadoro: In agricultural energy use, at least from a water pumping standpoint, to the degree that there is less ag land being,

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03:49:31.270 --> 03:49:49.859

Michael Boccadoro: Utilizing energy under production in California. There will also be a reduction, necessitated in food processing as well. There'll be simply fewer crops to process here in the state. So we look forward to working with staff to hone in on exactly what that reduction overall

1484

03:49:49.860 --> 03:50:02.039

Michael Boccadoro: will be, but we do not see load growing in the agricultural sector, similar to what we're seeing in some of the other sectors in California, and we want to make sure that gets reflected.

1485

03:50:02.170 --> 03:50:03.660

Michael Boccadoro: in the...

1486

03:50:03.670 --> 03:50:27.700

Michael Boccadoro: IEPR load forecast going forward. And then finally, I just wanted to comment briefly, hopefully we're not just looking for headroom in the utility grid when we're looking to site data centers in California that we're also taking into consideration this significant, water use of these facilities, and, you know, proposals to put those in the San Joaquin Valley in particular.

1487

03:50:27.770 --> 03:50:42.259

Michael Boccadoro: Where we're already facing a water supply deficit approaching 2.5 million acre-feet per year, is troubling, from a standpoint where taking a million acres of farmland, up to a million acres of farmland out of production.

1488

03:50:42.260 --> 03:50:53.009

Michael Boccadoro: We don't have enough water, we certainly don't have any for data centers, so we don't have a problem with data centers, we just want to make sure we're very smart about where we're siting those. Thank you.

1489

03:50:53.680 --> 03:50:56.749

Sandra Nakagawa: Thank you, Michael. We're gonna now turn to Brian.

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03:50:57.360 --> 03:51:01.090

Sandra Nakagawa: And I'm gonna unmute. You might need to unmute on your side as well.

1491

03:51:01.540 --> 03:51:02.969

Brian Biering: Wait, can you hear me okay?

1492

03:51:02.970 --> 03:51:04.929

Sandra Nakagawa: We can hear you, I'm gonna start the timer now.

1493

03:51:05.100 --> 03:51:05.950

Brian Biering: Thanks, Sandra.

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03:51:06.000 --> 03:51:11.619

Brian Biering: This is Brian Biering with the American Clean Power Association of California. We represent

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03:51:11.640 --> 03:51:29.990

Brian Biering: utility-scale wind, solar, storage, geothermal, and merchant transmission developers in California and throughout the West. I wanted to follow up on a comment that Vice Chair Gunda had made in response to Mr. Cooper's presentation earlier, specifically.

1496

03:51:30.060 --> 03:51:45.399

Brian Biering: Regarding variability and inputs and uncertainty, and the downstream impacts of that, particularly around managing affordability and reliability. And we see that as a key issue that's going to come up in the consideration of the IPR this year.

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03:51:45.540 --> 03:51:55.619

Brian Biering: We do not view the risks and the magnitude of the risks of planning as symmetric across, you know, over-planning and under-planning.

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03:51:55.670 --> 03:52:13.439

Brian Biering: While it is true that over-planning demand can result in a higher planning reserve margin, which would increase costs, the risk of under-planning for load has very significant costs, both in the resource adequacy pricing, load-serving entities we'll see in contracts.

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03:52:13.480 --> 03:52:29.590

Brian Biering: And in particular, downstream, even further, in terms of how demand forecasting is used in the planning processes. Utility-scale generators plan many years out in advance for, you know, trying to get into the interconnection clusters.

1500

03:52:29.590 --> 03:52:48.320

Brian Biering: And are relying on transmission planning that's done, you know, in some cases, 10 to 15 years in advance. And so when there's massive shifts in demand forecasting year to year, that can disrupt the availability of generation capacity resources, the planning for generation capacity resources.

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03:52:48.330 --> 03:53:03.970

Brian Biering: And ultimately, the availability of those resources and solicitations. So, there certainly is a very significant risk with under-planning for load, and we hope you'll consider that as you're, you know, grappling with these very...

1502

03:53:03.980 --> 03:53:13.140

Brian Biering: heavy issues, you know, around data centers and the greater variability of load than we've seen in years past. Thank you for consideration.

1503

03:53:13.780 --> 03:53:18.120

Sandra Nakagawa: Thank you, Brian. If anyone else would like to make public comment?

1504

03:53:18.490 --> 03:53:20.100

Sandra Nakagawa: Please raise your hand.

1505

03:53:20.350 --> 03:53:22.069

Sandra Nakagawa: Using that feature on Zoom?

1506

03:53:23.250 --> 03:53:42.500

Sandra Nakagawa: I'm not seeing any other raised hands, so I'll remind folks that we do welcome written comments as well. Those are due by close of business on Tuesday, September 15th, and you can find instructions on how to provide written comments and the Workshop notice, which is posted on the Zing's website, the webpage for this workshop.

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03:53:42.860 --> 03:53:47.759

Sandra Nakagawa: With that, I'll turn it back over to Vice Chair Gunda for any closing remarks from the Diocese.

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03:53:48.760 --> 03:54:12.460

Vice Chair Siva Gunda: Yeah, thanks, Sandra, and also thanks to the commenters, and so helpful to have that, you know, input as we move forward, with the forecast adoption. Just wanted to say, this was an excellent workshop, you know, really big kudos to the IEPR team and the Energy Assessments Division team that has done an excellent job today continuing to foster

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03:54:12.460 --> 03:54:33.089

Vice Chair Siva Gunda: a thoughtful approach to, building the forecast, and then, you know, improving on transparency and developing the methodologies that meet the moment, you know, of the needs today. So really, thank you, team. Super grateful for everybody, for joining us today, all the public who have, attended today, and then

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03:54:33.090 --> 03:54:46.739

Vice Chair Siva Gunda: the questions that were raised and the comments that were provided. Looking forward to continuing this conversation. With that, I'll see if Commissioner McAllister's still here. If not... yeah, there I see. Commissioner McAllister, do you want to close us off? Thank you.

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03:54:46.740 --> 03:55:02.860

Commissioner Andrew McAllister: I just would, echo your thanks, to the IEPR team and the staff, division staff, and, all the presenters, and obviously lots of people behind all the presenters and everybody who was front and center today, so just really appreciate the collective teamwork.

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03:55:02.940 --> 03:55:18.810

Commissioner Andrew McAllister: And, you know, clearly we're all rowing in the right... in the same direction, and hopefully that's the right direction. And, you know, we're all learning together, so I think that's, that's what we need here at this moment, and, getting a handle on all these new loads and all the interesting stuff that's happening out there on the grid. So, thanks for your leadership as well, Vice Trege Gunda.

1513

03:55:19.310 --> 03:55:31.850

Vice Chair Siva Gunda: Thank you, Commissioner McAllister. Just wanted to, uplift, Ching Tang from our office, who works on this tirelessly on the demand side. So Ching, thank you for all the work you do. With that, we are adjourned. Thank you.