[MUSIC PLAYING]

All right, good afternoon, you guys. Last session. So if you've been part of these sessions in the afternoon so far, you understand the approach. If you wouldn't mind, please, taking your phone and launch the QR code or type in the browser. This will be similar to the other sessions where the speakers are going to give some info and they're going to ask for input. And so we'd love, to sort of whatever level you're comfortable with, provide that input.

All right. Thank you so much. Oh, and sorry, a couple other things. There's a first question around your industry. If you wouldn't mind answering that. That helps us with segmentation. And in general, like the other sessions, you're going to have about three minutes to answer the question. So there you go. Sorry. Thank you.

Good?

All right. Testing, testing. All right. 4:00 o'clock, who's excited? Who's got the energy they had this morning at 9:00 o'clock.

[CHEERING]

All right, well, we are going to take you on a whirlwind adventure through the electric vehicle customer experience today and we're really looking forward to working with all of you all and a little bit of help from AI to solve, basically, the future of the EV customer experience. So thank you all for joining today. I'm Lydia Krefta, I'm the Director of Clean Energy Transportation for PG&E.

And I'm David Almeida. I oversee our strategy and policy team.

All right, so we're going to start off by talking a little bit about our overarching electric vehicle goals at PG&E, but to start, before we get there, I want to start by baselining on the status quo. So we're in Santa Clara County. So I want to see how many people know new market share of EVs in Santa Clara County. So raise your hand and then keep it up if you think that at least 1 in 10 new vehicles sold in Santa Clara County are electric vehicles. All right, keep it up if you think at least 2 in 10 are EV. 3 in 10?

Four in 10? Five in 10? Ooh, pretty good wisdom of the crowds here. Oh, I was about to trip over the chair back here. So the answer is it's between 4 in 10 and 5 in 10. It's about 45% new vehicle sales in Santa Clara County are electric vehicle. And actually, in June of this year, it was 50%, which is pretty cool. So 1 and 2 sales of vehicles in the county were electric.

So we're doing pretty well when it comes to EVs in our service territory, but we have a long way to go. We have some pretty ambitious goals. So today we've got about 600,000, 650,000 electric vehicles that we are serving every single day in our service territory. Our goal is to serve 3 million by 2030 and then close to 8 million by 2040. So you can see the ramp from today through 2030 and 2040.

Like I said, doing well but have a ways to go. In order to get to 2040, we've put together kind of, I'd say, a broad overarching strategy that I think really rely on a couple of items. The first, and I'll dive into this a little bit more in the next slide, is really figuring out how we, what we call, cross the chasm. So go from encouraging folks today who are early adopters to adopt EVs to moving into the early majority and really kind of convincing the masses to adopt EVs.

The second is to ensure that we're building charging infrastructure in a timely and affordable fashion that enables everybody to charge when they need to, where they need to. And then the third is really focusing on how we can drive what we call net beneficial vehicle grid integration. So how can we enable our customers to leverage the flexibility of their EVs to create value for them and create value for the grid, so we're not only making it more affordable for our customers to adopt electric vehicles, but we're making it more affordable for all PGA customers to support electric vehicles.

So focusing in on that first one, and that's really where we're going to spend a lot of our time today, is how do we cross the chasm? How do we move from where we are today, early adopters, into encouraging everybody in our service territory that is valuable, affordable, easy, and something that they are interested in doing to purchase an EV. So we just went through stats in Santa Clara County. We're in the mid 40s in terms of new market share for EVs.

Across our entire service territory, today, we're at about 1 in 4, or 25%, and so that very much is kind of right in between early adopters and early majority when you look at the product adoption curve or product adoption lifecycle. And it varies a ton. There's some counties where we have pretty low adoption, where we're at the very, very edge of early adopters. And then we've got some counties where we've got high adoption. Santa Clara, Alameda, Marin, a lot of the counties kind of around the Bay Area.

On average, like I said, at about 1 in 4. So as we look at this, we realize that what has worked to get us to 25% new EV market share in the past is not what we can rely on to go from 25% to 100% in the future. And so as we look at the types of customers that we're now kind of shifting to needing to be able to serve, we're looking at early majority customers.

And those customers are looking for simple, convenient solutions. They don't want to go to four different places to look for four different incentives to figure out how to adopt an electric vehicle. They want to really understand the value proposition. I am in charge of clean energy transportation at PG&E, and when I purchased an electric vehicle, I looked at my electric utility bill and I was like, why is it so huge? Like, it took me a minute to really understand that value proposition of like, oh, yeah, I purchased an EV and this fuel is more cost effective than gasoline fuel, but that's not super clear for a lot of our customers.

So we need to find ways to make sure that the value proposition of purchasing an electric vehicle is clear. And then we need to make sure that we are providing information from trusted sources and really helping people to understand what it means to drive an electric vehicle, giving them the opportunity to drive an electric vehicle. I should have the stat in my head, but I think it's like 70% or 80% of customers who drive an EV never want to go back, basically.

Like, how do we encourage our customers to really understand what it means to adopt an EV? And so as we're looking at this transition, going from the early adopters to the early majority, we're really focusing in on our customer experience. What is that customer experience that customers are experiencing today and how can we improve that to drive a more simple, better customer experience to make it just an awesome thing to adopt an electric vehicle and install an EV charger tomorrow?

So this is what our customer experience I would say looks like today. Some awesome people helped us take a really big, messy process map and narrow it down into what it looks like a somewhat streamlined process, but it's not. I mean, this process was built for, let's say, a different time. It was built for a different type of customer. What we really need to do is build it for an EV customer of tomorrow. So it takes today, let's say, up to potentially a year and a half, if you're looking to adopt an EV and install an EV level 2 charger at your home.

There's a lot of different pieces to the process. There's a lot of back and forth. There's a lot of waiting. Sometimes there's not a lot of transparency when it comes to what part of the process that you're in. And this process that you see here is just the simple, straightforward process. This is if I want to install a level 2 charger, maybe I need a panel upgrade, maybe I don't. Maybe I need a service transformer upgrade, maybe I don't, but this doesn't include if you're interested in potentially taking advantage of one of the many incentives we have for pre-owned electric vehicles, for chargers.

This doesn't include parts of the process for if you're interested in joining a load management program or if you want to sign up for an electric vehicle rate. And so there's a lot of different pieces to this process that are very siloed. There's a lot of different steps you have to take if you're an EV customer today and we're really trying to understand how can we take those steps and reduce many to one or a few. And how can we make it super simple for a customer to go on a load management program, get their incentive, and install their EV charger all at once?

Cool. Sorry, I'm going to take it over to talk a little bit about this. So I'm going to lay out a bit of where we're seeing the ideal state being and then we're going to show a couple of examples, then ask you guys some questions. And so if you came in a little bit late, you're going to see the QR code. Tap that QR code so you can get in the party and start providing some answers to us. So when we think about the future state of this, as Lydia mentioned, there's multiple different pathways for customers to come through.

There's multiple different applications they can go to to get an incentive. They can go on one website and get an incentive, but it doesn't necessarily tell them about another incentive that are available. It doesn't match through and maybe give them an offer of what are some best ways of doing this. Maybe you don't need to upgrade your panel. What are the solutions for that? So we envision a future where it's a much more unified experience.

We want to see a place where multiple different marketing channels can come into a central place where we ask the customer a few questions. Then we tap into the data that we already have about that customer and then we proffer up solutions for them with the personalized recommendation that benefits the customer, saves them some money, but also could save the utility some money, as well. So I'm going to give you a couple of these examples and then we'll go into some questions. All right. OK. I made some examples of these people that don't really exist.

But Jenny from Sonoma County, she's come in, she comes in to that central login page, we ask her a couple of questions in this. I've super simplified this for you guys. She has a 100 amp panel. Her house was built in 1940, much like a lot of our building stock. It's an older house that was built for a different time when we weren't talking about all the load or all the electricity that we consume today. She's not income qualified. She's looking for an EV charger and she's got a gas dryer. That information taps into our own information about Jenny, identifies that, hey, you know what? Jenny can really benefit from this.

We can mitigate a panel upgrade. We don't have to upgrade that 100 amp to a 200 amp panel, saving her some money, saving her some time, and saving the utility some money, as well, by enrolling her in a load management program where we're going to actively manage her charging so that it matches whatever the grid needs are at that time. And so we can do essentially more with less. So that's kind of the example we're looking at is this recommendation wizard. There's a lot that goes behind the scenes of this but provides that background information. So let's go into a couple of the questions we've got.

OK. So one of the questions we have is, what are the gaps or challenges we might be overlooking? And why are they important in this overall solution? So I think there's going to be some music played. It's going to be a little awkward for about three minutes where we are going to listen to that. Or maybe we don't have any music, but if you can get up your Slido, start answering some questions within that, that would be awesome.

If we don't have music, David can sing for you.

I can. So yeah, I mean, I'm recovering from a cold. I was at a concert last night. So I have a little bit of that, but if you want to hear this baritone, I can do it. Oh, no, it's playing.

[MUSIC PLAYING]

It's my favorite jam.

It's a good jam.

It's a good jam.

It's on my Spotify top five.

Yeah. Awkward music interlude music, volume three.

That is actually my favorite genre on Spotify.

Yeah, exactly. I don't think they're-- OK.

I think we have better music than the building electrification session, myself.

Yeah, it's a little bit more jazzy.

Yeah.

Yeah.

It's got a beat.

I mean, would you deploy jazz hands to this? I don't know. I might. I might. OK. We have one more minute and then we'll go into another question. If you haven't been to some of the other sessions, we're going to essentially tabulate all the responses, AI is going to be helping us do that, and then at the end of the session, we're going to run through the results.

Come on in, sit down, get your phone out, grab this QR code. OK. I'm going to go to the next one. All right. Sweet. All right. So building off of this also, we were interested in understanding the gaps and what we're missing within that, but we really want to understand what data and capabilities are essential to effectively execute this process.

So much of you are vendors. Some of you may be representatives from utilities. From your perspective, what is the data that we really need in order to provide these customized solutions to customers? And what are those capabilities that we need, as well? Let's bring back that music. All right.

I mean, three minutes can be a long time.

[LAUGHTER]

So let's just say that right now. When you're under the lights, it could be a little bit long.

Not when you've got tunes like this.

Yeah. Not if you got the music. All right. We've probably got another one minute for that. Dance off? Oh, maybe next interlude. I'm game. Got a mean running man that I break out for weddings. You know what I'm talking about?

The running man?

The running man. Go to move.

That's your go to move?

The half splits is my go to move.

Yeah.

That's the surprise move for everybody.

Then we do need to have a dance off. I won't lose.

Yeah, we can do that. Or the worm. The worm is also a big fan of mine. All right, we can move on to the next one. OK, great. All right, so let's go back to another customer. In this case, we have Sally. She's from Alameda County. She's going to go to that central login page. That gives us access to her information, which we have a lot of information about her already. We match that with the questions that we ask her. She's similar to Jenny we were just talking about, has 100 amp panel, very similar to the billing stack that we have in our service territory, where we have these older homes that will need to be upgraded unless we find some other solutions for them.

She is income qualified, which means she's qualified for some of our programs that we have. She's looking for an EV charger and she's got an electric dryer. That information comes in to the recommendation wizard, spits out a recommendation for her, matches her with a program. This is an actual program we have today. It's called the Residential Charging Solutions Program. It allows incentives for solutions that can do load management for chargers.

They can do load management as well as devices like an outlet splitter. A common one is called a Dryer Buddy that allows you to split your outlet, use your dryer when you need to use your dryer, and then plug in your charger and use that. It mitigates the need for a panel upgrade, again, saving Sally some money on her side, saving some time, and then also saving the utility some money, as well. So let's go onto the next question.

All right. One of the whole purposes of this event is talking about how we can leverage AI. And so in this case, what we're really trying to understand is what are some creative ways that we can leverage AI to deliver a better customer experience? Is that making it easier for the customer to engage with the utilities? Is it maybe you're working with a company that is helping utilities solve their internal processes with AI? We would like to understand from your perspective, how can we use AI to help improve that customer experience, either on that front end or on the back end? Let's bring the music back up.

[MUSIC PLAYING]

Bring it back.

Oh, yeah. That's right. You're looking for that dance off.

I know.

Waiting for the running man.

Oh yeah, yeah, yeah. Maybe. Nothing says wedding like running man, I'll tell you.

Do you remember in, like, 2014, when it was, like, all the rage to do the running man video with a whole group of people?

Oh, yeah. [LAUGHS] I missed that. That was really my sweet spot right there.

Yeah. It's all right. We can do it 10 years too late.

We can do it again. Yeah. It's a viral sensation. OK. We've got a minute more before we get into that, close to that, and then we're going to do a little turn on your guys.

Oh, yeah. We're about to bring a plot twist.

Yeah, midway plot twist.

Plot twist.

I don't know if you guys can understand this. I mean, I think the excitement is palpable. I'm looking at the audience. They are just--

Edge of their seats.

Yeah. Edge of your seats right now.

You guys can stand up and applaud. That's fine. We'll take it.

[CHEERING]

I mean, the energy industry is exciting.

It is.

Yeah. Wait till you guys see what we've got in store for you.

Oh, yeah, the beat's picking up.

We are-- oh. All right.

All right. Are you guys ready for the plot twist?

[DRUM ROLL] Oh.

All right. So in addition to working with our customers to encourage them to adopt electric vehicles, there's a whole other slew of electrification that we need to pay attention to. So we know that our EV customers very well may also be building electrification customers. So as a company, we have a goal to electrify 3.7 million space heaters and 4.6 million water heaters for customers by 2040. And if we focus on EVs in a silo, then there's opportunities to be inefficient, opportunities to miss the creation of a holistic and simple customer experience for all of our customers.

So we'll take you back to our example one more time. We're still with Sally from Alameda County. We worked with her on how to get a Dryer Buddy to help her install her EV charger, but what if this recommendation engine was able to know that Sally was in Alameda County and was able to know that last year there was a law passed that would require all new water heaters to be electric starting on June 1, 2025? I'm completely making this up, just so everybody knows that. This is not a fact, but what if? It's a what if scenario.

Wouldn't it be awesome if this recommendation engine could let Sally know that we have incentives for her to adopt a heat pump water heater and that she should size her panel differently. Or maybe there's a different load management approach we might want to take if she's installing an EV charger as well as a heat pump water heater. And so really, as we're thinking about the future, we're not only trying to move from that early adopter to early majority of EV customers, but we're trying to think holistically about our customers and understand that they're looking to adopt all kinds of different technologies as they move towards a clean energy future as well.

And we're really trying to understand how we can build this into the customer experience so you don't have a building electrification customer experience, an EV customer experience, a load management customer experience. It's one residential customer experience. So with that in mind, kind of asking somewhat of the same questions again, but now thinking a little bit more broadly, how should this process adapt to support home electrification needs? What steps would we need to take to seamlessly integrate building electrification into this broad approach we're considering? And I'd say, maybe similarly, are there AI solutions that we should be thinking about as we're thinking about this holistic future?

Let's bring up the music, guys.

[MUSIC PLAYING]

Awesome. I did not expect that. OK. Interesting.

Good one. [INAUDIBLE]

Oh yeah. Let's do that.

Oh, excellent.

OK. Great.

OK. While you're continuing to write your amazing, awesome, insightful answers, we also have, I think you guys have probably seen this if you've gone to another breakout, but fully optional, if you're interested in providing the name of your company or organization, that would be really helpful for us as we look through the answers and if there's any follow-up questions we may want to ask to reach out to you. So fully optional, but if you're interested, feel free to add the name of your company or organization and your title.

Cool. Cool. And I think we have questions one through three, too. Yeah. Yeah. So we can do a little of that if we want to. Maybe let's do it because we have some time.

Yeah.

Yeah.

Want to do it now?

Yeah.

All right, go for it.

All right. All right, so we're going to break it up a little bit and then we're going to go and do the results. Takes a little bit of time to tabulate all those results. So we want to do a little bit of audience work because you guys are so excited about this. I get some chuckles within this, keep you off your phone.

We're doing some live customer insights right now.

Exactly. So we're going to ask you a couple of questions to just understand the audience a bit more. Raise your hand if you have an EV. OK. Keep it up. No. Keep it up. Keep it up. Keep it up. All right. Keep it up if you've installed a home charger.

Oh, interesting.

OK. Some of you. All right. I want you to keep it up if you would rate that experience a three out of five or greater. So it was a positive experience.

Wow. I think every person kept their hand up.

Wow.

Problem solved. We're done.

We don't have to do anything. Awesome.

[LAUGHTER]

All right, I'm going to call on a couple people because I'm interested in just kind of getting your experience from this. Keep your hands up for this so we can see it.

It's also an exercise class.

Yeah. Yeah. Exactly. OK, gentlemen in the beard right ahead of me. Why was it a positive experience?

So I've got a 2019 Evo. So like 100 miles. It gets me to work and we just did it as a part of building a new house. And so because of that, it was fairly seamless.

Got it.

I was considering doing it at our old apartment before and essentially decided I was fine with the slow charger, but when we moved to the new house, it became much easier.

OK. So you bundled it with an existing build that you were doing. OK. Unique edge case. All right. I want to hear one more person--

Yes, can you repeat that for the livestream?

Yes, please. Sorry. And then maybe if we can get a mic, that would be great. But if not, no stress if you can't do that. So the answer was that he bundled his charger installation with a new build that he had. And so because of that, it was a seamless experience because he was already doing a bunch of other stuff with the home, so it kind of added into that. Let's do one more. Actually, let's raise the hand. Keep your hands up again if--

You guys were supposed to have your hands up this whole time.

Yeah, what's going on? What's going on? All right, let's do Zantha.

I'm using a level 1 charger.

OK. Boom. Easy because it's a level 1 charger. You don't have to do any installations. Cool. All right. Raise your hand again if you have a charger, you installed one--

Less people have chargers all of a sudden.

I know. So many people.

Oh, we're getting called on? I will not be raising my hand.

Keep it raised if your experience was less than a three. You didn't have a good experience. Whoa, there's no one?

Wow.

Wait. So, OK. Oh, yeah. In the back.

Yes. All right. $10,000 of undergrounding and trenching.

There you go. Yeah.

OK. So I'm going to say it again. $10,000 worth of-- oh, we got-- thank you.

$10,000 of undergrounding and trenching to get from the garage to the house.

Yeah.

Yeah, that's not great. That's the experience that we hear about, as well. And that's what we want to help fix within this solution within that. OK. All right. I think we're probably good on the results now. So let's maybe--

Not yet.

Oh, not yet?

One more.

One more. OK.

All right. Of everybody who had your hand up for who has installed a home charger, hands back up.

Please.

[LAUGHTER]

How many of you either have or are thinking about doing home electrification? Any type of home electrification? Like maybe like half.

Yeah.

One third to one half.

So let me pick the woman in the back.

Me?

Yes.

[LAUGHTER]

Can you hold on one second? We got to get the microphone.

I've been wanting to do one for a couple of years now--

Wait, wait, wait, wait, wait, wait, wait. Sorry. Sorry.

Hi.

Hey.

Hi, I'm Cherise Petker. I'm the founder of circularsolar.net.

Oh, hi.

So I'll maybe let you know on the AI chat. Maybe? I don't know. So I've basically sized out different variations, different panels, orientations for powering my electric hot water heater for a couple of years now. Did it all myself. Charger and everything.

Cool.

That's awesome.

That's awesome.

So what was your question?

No.

So why did you do-- like, what are you--

Oh, I use it on a floating solar innovation lab. And also, too, I'm doing negative emissions charging.

So the early majority customer we're talking about.

Oh, the majority of customers--

No, I'm kidding. I'm kidding. I'm kidding. No, like you're more of an early adopter in this is more--

Yeah, I was an early adopter and I use various solar panel sizes and I optimize it with super highly reflective material--

Oh, cool.

--that keeps everything else efficient, too. Like undergrounding of wiring. Excuse me. Sorry. Wiring the charger. Everything's just more efficient in the heat.

Cool. Awesome. Are we good now. OK, so let's look at the results.

Thank you for your participation.

Thank you so much, guys.

Hopefully your arms aren't too tired from going up and down. And for those of you who didn't raise your hand when we asked if you have an EV, your job is to go out and figure out which EV you would like to purchase--

Exactly.

--to be part of our early majority.

OK. So maybe-- OK. All right. So we're breaking these up into three categories, right? There's common, surprising, and then segmentation based off of how you identified yourself as an industry. So maybe--

I think this is the first one.

The first one. OK. Common. So I think there's a couple of things that are pretty interesting here that are not super surprising on this. Like, yes, customers lack technical knowledge about their electrical panels and infrastructure details. I think that's one of the things that we're trying to solve here is to give them information but do it in a way that is a much easier way for them to digest that. Take in information about their panel.

We have these slides-- we don't have a lot of time, so we can't go into too detail-- but some of the things that we're thinking about here is, how do we use images of panels using AI to help identify what's the capacity on the panel for a customer? Using that, building into this recommendation wizard, that's then going to match the information that we have about the customer and proffer up those solutions. So I think that's kind of on point within this.

Yeah, I think I'll just add. One of our goals with this future state vision is to limit the amount of knowledge a customer has. So they don't have to be an expert in this area and we can help leverage this recommendation engine and really help kind of drive decision making in a way that doesn't require everyone to know all of the details that somebody today would have to know when they're installing a charger.

Right. Yeah. OK. We'll do a little call-response here. This one was pretty interesting. Bitcoin miners masquerading as residential customers to qualify for panel upgrades. I did not expect that. I don't really have a response for it other than I didn't expect it.

We're looking for gaps and challenges.

And they brought it out.

We are overlooking that one, that's for sure.

Thank you very much. I haven't heard about Bitcoin miners in a long time. So AI suggestions could unintentionally mislead customers about their actual charging needs. I think that's a good one for us to kind of be careful about, is you don't want to trust the AI to basically mislead a customer within that. So that's something that definitely I agree with you. I mean, it's not always right. I think everyone's used ChatGPT or some sort of derivation of that and figured out that actually, no, you guys are wrong. Like, I shouldn't be doing that. Let me kick it over to you.

All right. So this is looking at the gaps and challenges again but looking at it segmented I think that very first bullet under academic and lab is something that we're really thinking about and thinking about the way to do it in a way that's maybe most affordable or cost effective for our customers. So how do we think about a customer who might be installing an EV charger today and consider that they'll be adding additional load and find a way to enable that future without adding too much cost today?

And so I think that that's a big challenge that we're working through, but it's something that's very much on our mind of how do we think broadly about this challenge. And then I'll also maybe call out under government and regulatory language and technology, accessibility barriers prevent equal program access. I think that's a big one. Like as we look at going from early adopters to early majority, the amount of customers that we need to reach is much broader and it's very diverse. And I think it is really important for us to think about different barriers or different ways that we can communicate with all kinds of folks throughout our service territory.

Yeah, I think it's good. All right. OK. What data and capabilities are going to be essentially effective? Again, this is now the common. Customer load data and usage patterns. I agree with you. I think that's kind of useful for us to understand. How do we proffer up a solution like a load management solution? Is it going to make sense for them? Will it work for them based off of their usage? And we have a ton of data from customers about how they use electricity. We also can forecast kind of changes to that usage, as well, based off of what we know about EVs.

I think the grid capacity transformer level loading. Yeah, that's essentially our capacity information. And kind of what I was alluding to is on the back end, how do we match solutions once we understand what the customer is providing to us? Because we don't necessarily have all the information on their side, but we can match it with our side, as well. So I think that's definitely appropriate.

All right. Surprising responses. I really like the explainable decision making algorithms for V2G systems to build customer trust. And whoever put that one on there, hopefully you put your name and organization because I think that's exactly what we're trying to do with this, right? Is think about how can we make good decision-making algorithms that help us to enable this future that's both installing EV charging, but leveraging those the flexibility of those EVs, both from a unidirectional managed charging perspective but also in the future V2H-- vehicle to home-- and eventually vehicle to grid. That's like, I'd say, exactly what we're hoping to do.

All right. So let's look at the different categories we've got. Interesting on the academic and lab and not surprising. Comprehensive customer profile, including usage patterns, devices, preference economics. And I think that's something where, again, we're kind of matching what we already know about the customer, but then filling in information that they're providing to us.

Streamline permitting processes.

Yeah, I've seen that actually come up in a couple of these. And I think it is a huge component to the residential side, not just for single family, but also for multifamily as well. I think the state's doing a lot of work right now to help streamline that, but there's a lot of work that needs to be done in order to clean that up. OK. AI. Interesting. AI chatbots as personalized EV advisors answering specific customer questions and concerns. Yeah, we're actually exploring how to do that beyond just kind of what we're talking about right now.

And as a company, we're using chatbots already to help with of basic questions that customers have. And so I think we're moving more towards looking at how do we use that technology, like every industry, to make it easier for customers to get more real-time information.

And I think load disaggregation is another one that we've been really focused on in the last year. It's difficult. It can get us part of the way there, but not all the way there right now. And so we're really looking for ways to be able to get a little bit better understanding of both where the EVs are today, where we expect a propensity to adopt tomorrow, and then what those load usage patterns look like for our EV customers and more broadly.

Yeah. One more thing I think that is interesting, the third bullet, automated program matching to identify and enroll customers in relevant incentives. I mean, that's essentially the wizard that we're talking about here, folks.

It's the wizard.

I think we've got a home run right there. All right. Let's maybe move into the other.

We should have had a logo contest for the wizard.

A naming contest?

No, a logo. See who could have given us the best logo for the wizard.

Oh, that would have been really cool if we could do that.

Next time. If you come back next year--

Yeah. [LAUGHS]

--logo contest.

All right. So surprising responses. Target electricians as key EV educators who need AI support and resources. OK. Use smartphone photos of electrical panels to instantly assess upgrade capacity. Awesome. That's something that we are exploring.

I like the county parcel data. I think that's an interesting one.

Yeah.

There's another one that talked about charging deserts, as well. Similar kind of concept. Like, how do you find out where there's less charging infrastructure to support customers who may not be able to install home solutions.

Yeah. We have an epic project. We're exploring a little bit of like, how do we find solutions for multifamily customers, which is going to leverage not just traditional charging infrastructure at a location, but how do we enable charging near a multifamily location as well?

The second one is really interesting, I think, as a broad concept. EVs can create value, right? I think EVs can create value just by connecting to our system. They can create downward rate pressure. And then if we leverage the flexibility of those EVs, they theoretically can create more value. And so how can we capture that value in a way that can help drive down the upfront costs for customers today? I think just that broad kind of concept is a really interesting concept and one that we're definitely exploring.

Virtual smart home.

Had a lot of chat bots in there.

Yeah.

Perfect.

Lots of predictive language chat bots. Streamline. Oh, focus on backend improvements rather than customer-facing AI interfaces. I think that's a really critical thing for us to focus on. I think when you saw the steps that Lydia was sharing, that was just the energization process. As she mentioned before, it doesn't include all of the incentives that we have available. It doesn't include interconnection process if you're going to install a battery or you want to go through V2G. So I think we need to figure out how to streamline-- and we're working on that-- how to streamline our processes to better serve our customers.

All right. I think this is our last one. The plot twist. Oh!

Oh.

The plot twist plot twisting me. There we go.

There we go. OK. OK. So, similar threads here.

A lot of data-driven--

Yeah.

--threads.

The customer usage data. I agree with that. In order for us to really help Sally, if she needs to upgrade her panel or not, is to do that customization based off of her usage profile, based off of the grid capacity that we know about. Oh. Hot take on the first bullet right there.

I like it.

Target gas cooking bigots and understand psychological barriers to spivoc appliance changes. OK. Went there. Went there.

If you can encourage those who are least likely to do it, then you've won.

It's true.

You've won the war.

It's true. It's true. I mean, I think there's an old adage about how the best EV salesperson is your neighbor that has an EV because you trust that person more than you trust, say, a car salesman or salesperson. And I think it's probably the same thing.

Somebody needs to invent a sexy induction stove that's really cool. When you bring your neighbors in--

I'm telling you, I think it is--

--and say, check this out.

Little side note. We rented a house last Christmas and it had an induction. It was the first time I used it. And man, that thing boils water faster than I've ever seen before.

So it's already been invented. It's invented.

You've got to start showing the neighbors.

It's there. It's there. It's there, Lydia. Oh, wait. Can we go back to one more. Install temporary load meters and analyze circuit usage patterns with AI. OK. OK. I'm not sure. Yeah. OK. All right, let's go to the summary.

Actually, I'll do one more. This is an unformed thought because we talked about this yesterday, but there was this concept of, could you leverage load management of EVs to reduce local system peaks and then the V2H or V2X capabilities of those EVs to cover the increased incremental load from building electrification? I thought that was a really interesting concept and kind of goes with bullet number four here, of ways you can leverage different types of VGI to support both EVs and broader building electrification.

Credit our friends down south, Southern California Edison, with that idea.

Yes.

Because that's where we were yesterday. All right. OK. Create opt-in platforms to collect data points for personalized recommendation. Gauge underserved customers with digital literacies to support and tools. Yeah, I think that's critical. How do we find the right channel to deliver to the right customer or to support customers where they're at? Let's see.

Building codes, I think, is super important. And then just the concept of load balancing broadly as a standard feature. I think as folks are installing these appliances, having a load management-first perspective I think is a way to really kind of future proof how we're thinking about adding this load while also managing this load at the same time.

I think the tricky thing about that is to do it in a way that is easy for a customer to understand, because it's not the most straightforward thing. So I think that's the challenge as we start going towards an all electric future, is how do we provide these solutions to customers in a way that is palatable to them, it gives them the information and certainty that they need, and do it in a way that it's a solid customer experience? OK.

I think that's our last one. I'm going to wrap it up with one more question for the audience.

Oh, my God, this is a plot twist I didn't even know about.

It's an uplifter. All right. Does anybody know the amount of emissions reductions that the state of California experienced as a direct result of transportation electrification between 2021 and 2022?

Come on. Someone here.

Any guesses? Yeah.

30%.

30%. Any other guesses?

Lydia is just flexing over here with that knowledge.

Flipping out the facts. You anchored us high. The answer is 2.4%. I thought that was really cool.

[LAUGHTER]

It's very cool, I think. We talk about this future that we're trying to build and I really think it's important to celebrate the wins that we have today. And it's pretty awesome that the state of California has been able to-- it's the largest emitting sector in the state of California, transportation. And the fact that between '21 and '22 we were able to drive down emissions 2.4% I think is pretty cool. And we saw even more adoption in 2023. So I'm really looking forward to seeing those numbers, but I think it's just a celebration of the progress we've made. And then there's a lot of opportunity for us to think about how we can do this bigger and better and just make this something that's awesome for all the people who are adopting this technology and all of PG&E's customers.

Which is statewide emissions, too.

That's correct.

Not just the vehicle emissions. That's statewide. So it bends industry down based off of the adoption of electric vehicles.

Well, this was just from EVs. I think there's a broader emissions reduction.

Damn, guys.

Exciting times. You guys are in exciting times with us. Thank you for your participation today.

And I think we're going to-- thanks, guys. Before you clap, we are going to stay here for the next session. It's going to start promptly in one minute and 20 seconds, so don't leave the room. Stay here and we'll get started right after that. Now you can clap. Thanks.

[APPLAUSE]

[MUSIC PLAYING]