

Please welcome Vice President, Utility Partnership and Innovation, PG&E, Mike Delaney, and Senior Director, Grid Innovation R&D, PG&E, Quinn Nakayama.

[MUSIC PLAYING]

OK. Woo. So Patty really outlined the challenges we face and the opportunity we have to solve them. I actually want to go back to the last quote and spend a moment on that. So blessed are those who plant trees under whose shade they will never sit.

And this caused me to go and look and discover how many acorns an oak tree can produce. 10,000. Up to 10,000 in a year. And it got me wondering. And by the way, I grew up in a forest in Michigan. So that's pretty accurate, tracks with my experience with raking and doing all that.

And it got me wondering, so how many of those acorns become successful trees? 1, 2, maybe none in a year? And so there's something special and important in this act of planting, in creating the conditions for success for a tree to thrive. The same is true for innovation.

And so what I want to talk about and spend a few minutes on is that what we're doing to create the conditions for success, for innovation to thrive here at PG&E. And I want to talk about the three ingredients that we have landed on for impactful innovations here at PG&E. And I want to share these, one, to talk about why they're the right ingredients for our needs and for the challenges that we face. And Patty did a wonderful job of outlining the why for us.

Then I also want to share this so that you understand the intention behind our actions. So as you hear Quinn talk in more detail about AI, talk about the problem statements that we're focused on, you can understand why, why we're showing up the way we are showing up.

So number one, ingredient number one. Don't go it alone. We heard about the challenge, the highest level. It's about 100% clean energy. It's doing it safely. It's doing it reliably. It's doing it at the lowest possible cost. And this solving the climate crisis is not-- there's not one silver bullet. There's not one single answer. What do we have? 67 problem statements. 70 problem statements.

So it's not a quick thing that one company can solve, has all the resources to solve this challenge. It's not just one of us that's going to do this. And that's why we're doing this together. That's why we're inviting you online. We're inviting you here in the room to be part of this.

We created the R&D strategy report to openly acknowledge these gaps that we have, the things that we need to go solve. And that we invited you. We invited this world to join us and to be part of this in the 2023 Innovation Summit. And the one thing I want to share, for those that are here in the room today, spend a little time in the innovation showcase out there, because that is a great case study in what we've done together, taken it from an idea to action.

You can hear wonderful case studies from our partners out there about how they're solving the challenges that we outlined in last year's R&D strategy report. And I hope that you all will spend a little time there, and then we'll be able to talk about the challenges that we solve together next year.

Number two. So it's important for us to remember that our challenges are big. Our solutions need to be bigger. You've all probably heard the phrase, too many cooks in the kitchen. The biggest risk with innovating together is that we'll all start running in different directions, doing things a little bit differently.

And so we can't do is lose sight of our goal and lose sight of the timeline that we have to make this happen. So at PG&E, we've made a commitment to be net zero by 2040. We're seeking to be climate positive by 2050. We need to do that safely. We need to do it reliably. We need to do that as lowest cost possible, so we don't have time to work on incremental solutions.

The things that we need to focus on are those things that are delivering 10x customer value for us and for our customers, so that when we're making investments, they're the big things that are making a big change. They need to be repeatable, they need to be scalable solutions.

And one of the things that we talk about with our team is to fall in love with the problem, not the specific solution. So while we're talking about AI today, while we're talking about specific solutions, what we really focus on is solving this challenge, solving the challenge of getting to 100% clean energy.

The last one is for us to have fun on the journey. So when people ask me what my mission in life is, I say that it's to change the world and have fun doing it. And I say that because having fun enhances learning and creativity. Having fun encourages us to experiment, to try things out, to fail fast, to try something else, to maybe look a little silly doing it.

But most importantly, if we tie it back to what we're trying to do, this is a challenge that we're in for the long haul. Getting to 100% clean energy, doing this in a way that's safe, reliable, that's at a low cost, is a serious, and it's important challenge. And it's going to be something we're going to be working on, for many of us, for our whole careers.

And so what we need to do is to have fun, to keep from burning out, to be able to be in this for the long haul. And so that's what we're going to do. That's why we're going to change the world and have some fun doing it. I couldn't ask for somebody better to have fun doing it with than Quinn Nakayama.

Quinn and I have a big service territory, and we've gone on multiple road trips together, which if you want to have fun, go on a road trip with Quinn sometime. Couldn't ask for somebody better to do it with than him. So with that, I'm going to hand it over to you, Quinn. You can share more about our journey.

[APPLAUSE]

What is up? Woo. San Jose. You can't ask for an Innovation Summit to be in a better place than right here in Silicon Valley. Innovation, the actual word, actually almost got invented here with the things that have been brought together by what the technology companies have been able to do right here. And to be able to talk about energy innovation in this city with all of you is amazing.

Last year, when we came out and did the Innovation Summit and introduced the R&D strategy report to the world, it was a lot of discussion and talk about what we needed to do. Where did we need to go? What help did we need from all of you to be able to decarbonize our energy system for the lowest societal cost?

This year, I want all of you, if you can, to go throughout this entire area over here, and you're going to see the technology, the partners, the vendors who are making that a reality. We have drone vendors out there.

We're Skydio? There we go, Skydio. There we go. We have Rainlon. Where's Rainlon at? Here we go. They're right over there. We got Boreworm. Where's my Boreworm people at? Here we go.

These are projects that we are currently either in commercial arrangements with, continuing to develop and innovate against, or they are things that are at the cusp that we're co-developing with to be able to make this journey possible. It's a demonstration of what we've been able to achieve over the years through the R&D strategy report, through things like the Innovation Summit, through Pitch Fests, and through our various partnerships with all of you to be able to make that happen.

And the things that you're going to see around this area aren't even the half of it. We had to turn some things away. And we're like, oh, I only got space for only so much. I mean, real estate is a little expensive these days in San Jose. I understand that too.

But that is a culmination of what we've been able to achieve. And it's thanks to partners like you. It's thanks to partners Distributech. Now, John Engel. I love you, brother. But I remember that conversation very, very differently. And it was a Microsoft Teams call. And the other unfortunate portion is I was in my pajamas. I guess that's the new way of working these days. But it's through these type of partnerships that we're able to bring this all together.

So our R&D strategy report, this is a living document. We talked about this last time. And that certain things are changing. We have two new themes in our R&D strategy report. Climate resilience. We're not just talking about wildfires. As climate has changed, we are seeing more and more significant events occur throughout the entire nation. And that has been so recently as the fires that are happening down in Los Angeles.

But not just that. We're starting to see major hurricanes occur on the eastern seaboard, low snow events that are occurring here in our service territory. Massive rains, massive heats that are occurring altogether. Climate resilience is something that is going to need to happen to create a safe, clean, affordable, and reliable system through any of our challenges.

Net zero energy system and environmental stewardship. How do we think about things like carbon? And how can we continue to innovate in ways that reduce and allow us to meet these really difficult goals to take carbon out of the energy system, scope 1, all the way to scope 4 and beyond.

Now Patty talked a little bit about this, about some of our problem statements and how they've been updated. So we'll talk a little bit about that. There are 17 new problem statements. And some examples of this is applying climate data to utility scenario-based planning and risk assessment.

How do we take this ecosystem of data that occurs out there on climate data and blend that into how we plan? Because climate is changing annually. And that means our planning and our risk processes need to also change annually as well. We need to streamline design and estimation for routine projects.

Right now, we have people and engineers, highly qualified engineers doing pole replacements, cross arm replacements. How do we automate that in a way that frees them up to work on the really complicated problems that we have to be able to de-energize, get to 100% clean energy net zero goals requires a different type of grid, and those engineers are going to be key to be able to do that.

And finally, graduated problem statements. Where's my Gridware people at? There we go. Tim Bedford, are you here?

I'm here.

There we go. Tim Bedford and the Gridware team have been able to create sensors on every single poll that we have and starting to put that out there in these high wildfire areas to do basically an ability to look at faults, look at problems that are occurring online right where they occur.

Ubiquitous sensing, smart poles. Call it whatever you want. And this ability has been able to graduate one of our problem statements through technologies like that that we've been able to scale, improve right here on our grid. It is amazing.

Now I will say, the R&D strategy report is not a light read. It is 190 pages. So I'm going to give you a little bit of a cheat sheet. Stephen Collins, principal manager of strategy and innovation over at Southern California Edison, has decided to put our 194-page strategy report through a generative AI software and created a, I think it's like a 12-episode podcast?

I kid you not. And I listened to this, and I was like, I don't understand how you did this. It's two people talking to each other, but they're not really real. And they're talking about our R&D strategy report. So I think we'll have a link on our line, on our website. Spotify.com I think is housing this one. Go check it out. It's amazing what the technology to do. If you're traveling here back to your home areas and need something to listen to, that might be something to take a listen. Then you don't have to actually maybe read the report.

All right. Let's talk a little bit about AI and the enablement that AI will be able to have on our industry. Our True North Strategy is the foundation for the innovation that we're doing here. And I'm going to read to you a little bit. I was listening to a podcast, actually, as I was on my way here.

There is a podcast out there called *Using AI at Work*. Chris Daigle is the host of the podcast. And he's talking to an individual, his name is Jeff Woods, who has a book called *The AI-Driven Leader* and talks about what exactly is required to have AI make the transformational changes that are required to really harness the power?

And he says this. Most people are like let's figure out the tool, and then we'll circle back on the strategy. He says, no. You'll be out of business in six months. He says, because AI is a tool, but one that answers a problem for the company's strategy. And that's exactly the approach that we've taken here today.

On our R&D strategy report, you're going to see outlined our True North Strategy. If you have a chance to go to the Breakout of Travis Britannic, he's going to talk a little bit about how we've taken this True North Strategy, and it is the driver for value for AI. Solving problems baked into your actual strategy is where AI lives, breathes, and transforms.

AssetAI. Being able to sense and look at data and identify assets before they fail, so that you can do preventative maintenance on it. ProcessAI. Leveraging things like drones to take a look at photos that enable you to determine, hey, are your assets correct in your registry, and can I see the degradation and calculate the degradation from photo-based computer vision?

CustomerAI. The ability to take a look at your data and provide insights that are directed to you as a customer. And then WorkforceAI. The ability to take gen AI and potentially do some of the simple estimation work that we need to design our system to allow our workforce to be able to work on the really meaty, challenging problems that we have on our grid, will actually create more joy for that workforce.

And our commitment to stabilizing our customers bills can be realized through the power of AI. There's two real simple ways that we can stabilize bills. One of them is increasing throughput. If we have more energy flowing through our lines, then the cost that it takes to be able to get that energy through our lines, rates will drop.

And if we have the ability to continue to lower the cost of doing business to maintain and operate and construct our grid, rates will drop. And I can fundamentally help, in all of those areas, figure out how we can create. A grid that is decarbonized. A grid that is safe, a grid that is reliable, and a grid that is affordable.

Because ladies and gentlemen, if we cannot get stabilization of our customer bills and the cost of electricity exceeds the cost of petrol and gasoline, this fails. And we need to be able to tap into all of you from an innovation perspective and an AI perspective to be able to help us identify ways that we can do both. Increase our throughput at the lowest cost, reduce our cost to operate, and that is all being possible.

And it is through things like putting more data centers and finding new load, being able to take AI and put it into places like our inspection processes. Put it into places like preventive maintenance. All of this, AI will help us with that duality of not just bringing in the load on the throughput but utilizing that compute power in order for us to be able to get to the grid that we need.

I am so honored to be here for the second year in a row, to be able to talk to you about ways that we can accomplish the decarbonized future. It is here. It is now. And I believe events like this, events like Distributech, partners like yourself, will echo and create the grid of the future for not just us here today but for the generations to come, and let that be our legacy. Thank you very much.

[APPLAUSE]