

Please welcome Chief Technical Officer and Chief Information Officer aes, Ashley Smith, Senior Vice President, System Planning & Engineering SCE, Shinjini Menon, Senior Director, Wildfire Risk Management PG&E, Andy Abranches. And welcome back, John Engel.

[MUSIC PLAYING]

All right. Well, hello again, everyone. And you think Quinn likes this stuff? I think it's pretty obvious that this is his natural element. As you just heard from the voice of God, I'm Editor-in-Chief of DISTRIBUTECH, John Engel. I'll be moderating our next panel, AI as the catalyst for the utility of the future. I'll begin by introducing our panelists. From my left, Ashley Smith is the Chief Innovation Officer at aes. She's good at information, too. But innovation is her main responsibility.

Then we have Shinjini Menon, Senior Vice President of System Planning & Engineering at Southern California Edison, and Andy Abranches, who has never spoken to me from the car, which I can say, from PG&E, Senior Director, Wildfire Risk Management. That's going to get me in some hot water down the road. So in this panel, we really aim to lay the foundation for what you're going to hear throughout the day here at the Innovation Summit, how utilities should be thinking about AI, planning for AI, and really setting up the processes to facilitate sound AI implementation, and so on.

So I'll start off here. We've spent several years in this industry talking about AI now and how exciting it is, and it's going to revolutionize our industry. And then comes the time for implementation and setting up the teams and internal processes for wide-scale adoption. So I want to start there with you, Ashley. How are you thinking about this at aes in terms of aligning the internal stakeholders, making a plan, and really putting that playbook to use?

Yeah. Thanks a lot for the question, John. And thanks for having me. At aes, we have a three-pronged approach to AI. The first, and it bears saying even though it's not an application internally, is providing the power, and frankly, providing the green energy for data centers across the country and in fact, across the world in aes's case. So we provide about six gigawatts of energy directly to data centers, as well as further half gigawatt to utilities that then in turn are serving data centers with that electricity.

So we're always first and foremost thinking about what we can deliver to our customers and AI/hyperscalers are a big part of our customer base. Secondly, we think a lot about applying AI internally to enhance our productivity, our operations, et cetera. And I'll spend just a minute on culture. Sometimes, that can feel like a more hand-wavy less-specific part of an AI rollout. But we've actually found, at aes, that it's one of the most important parts of successfully launching AI applications.

We've got a range of cultural programs, from rolling out Copilot to ideation sessions to-- I'll just give one example. We have what we call AI squads, where basically people who are a little bit more interested from across the company, regardless of what function they sit in in applying AI, can think of applications-- so as one small example, we had an early career employee who, amongst other parts of his responsibility was responsible for filing all the engineering drawings and permits, et cetera, for a given project.

And it was, suffice it to say, not his favorite part of his job. And so being part of this AI squad, he was able to, over the course of three weeks, develop an AI-enabled program that does the automatic filing for him with 90% to 95% accuracy. So just encouraging small things like that across the grass roots of the company has been pretty critical. And then very briefly, finally, we are also looking at AI applications for our products for our end customers. So with that, I'll turn it over to you to talk a little bit more about it.

Sure. Well, thank you for having me here. So I was thinking about this. It's interesting, with AI, you hear it so much all the time. And people who know me, I love analogies. And I couldn't come up with a good one, so forgive me. It sometimes feels like you're really hungry for something, and you go into this. And there's this buffet with so much, you don't know where to start.

That's how it felt with AI, because there's so many offerings out there from incumbents, from startups. So we really need to step back and say, how do we think about AI. So the way we have been thinking about it at Southern California Edison is two big things to start with. One is in the future, grid operations, real-time grid operations, will be much, much more complex.

Today, we have, maybe, a couple of 100,000 smart devices on our grid. In the future, we're going to have millions of smart devices on the grid, which need to coordinate with millions of smart devices behind the meter. The human in the loop of way that we do things right now is just not going to work. So that's one place AI really comes in to say, how do we not just detect issues but really anticipate issues, decide what action needs to be taken, and then go ahead and send the control signals to take that action. So that's the real-time piece, and then there is the front end of it.

When we look at every aspect of grid planning and operations, starting from the system planning side, how we come up with the scope of work, how we do field engineering, how we translate the scope, the engineering scope, into the CAD designs that go to our construction forces, vegetation management, inspection, all of that, either, in many cases, it takes a very long time to do or it's extremely manual or we are not gleaning all the intelligence that we can from the information that we have available. So that's another big area we are systematically thinking about how to apply AI.

And the foundational element of that, when we're looking at it, is data. So that's a big part of our focus to look at it. And, Ashley, you mentioned the organizational part and the culture. That's huge, getting the right kind of skill sets in. It's a different skill set from what our engineering forces have, what our field forces have. And then also getting over this, somewhat of a hesitation, to say, hey, can I really trust AI? So working on that culture piece is also a big part.

So, Andy, let's take the ball then from the playbook to validation. And I would love your perspective here, because I think AI is making some of the biggest near-term impacts on the wildfire mitigation front. So how do you look at taking that from ideation to validating these tools before deployment?

Yeah, John. I think both what Ashley and Shinjini were saying, the two aspects, and I'll talk on two aspects of what Shinjini was mentioning. One is making the maximum use of the information we currently have. When a human does it, they're using the intelligence, they're making the cross-references. This AI allows it to be a lot more comprehensive.

But in the early stages, as it gets that comprehensiveness, there needs to be checks and balances. So the validation piece really still requires a human or a couple of people to look at it, and just test it. I mean, we hear about AI models that have hallucinations. And the challenge on that is the AI is searching and using a very different way of thinking to come to the conclusion. But we want to check it, and make sure it validates with what the industry practice, what the common knowledge is, and how is it playing out.

You do get insights more from that. A good example, actually, is-- we have in California now-- by all the utilities have contributed partnering very closely with Cal Fire. And Cal Fire uses the AI cameras to dispatch, very quickly, when a smoke signal is detected. But there's an enormous amount of processing that takes place in those machine learning models before the signal gets to them. But even in that case, Phil [? Seelig ?] from Cal Fire will tell you, you get the signal, it goes to a dispatch.

They want the point and shoot cameras to do a little bit of that visual confirmation just so that they don't dispatch an aircraft or something in the wrong manner. Because the moment you do a dispatch, whether it's a crew or it's someone else, you've got to think about, you're putting them to do some work. There's an aspect of cost and all involved, but there's a bigger aspect. You're putting people at work and there's their risk, their safety risk when they go out there to do something. And you don't want to do that in error.

So the validation comes really is that joint, the AI plus the human interaction, at this stage of the game. I think of it from a validation perspective. In my own case, I drive a Tesla Model 3, it's got full self-driving. And while I put it in full self-driving, we're still at the stage where you've got to pay attention at the wheel. And that's, I think, where we are in the stage of the validation with these AI tools.

And I'm glad you threw out the AI detection cameras example too, because oftentimes, when we talk about AI, it's such at high level that we don't have that tangible link to what is actually happening and how are these tools being used. So Ashley, I'd love to hear about how aes is approaching some real applications here.

Yeah, absolutely. And speaking of the AI cameras, I'll give a single example. So one of the things that we always try to force ourselves to do is look at just challenges that we're facing across the business and try to reimagine how we can approach them with the assistance of AI. So as one example, a couple of years ago, as aes's solar development pipeline was growing, it became very clear that getting enough individuals to site to actually construct the projects that we were promising to our customers was increasingly difficult.

The remote locations, not necessarily the most pleasant working environments. So we looked at all the different tasks on our construction site and identified in particular the mechanical installation of solar panels. Sometimes, you do a million of those and these big utility scale sites. As a repetitive task that could be transformed by the use of robots to assist human operators, that led us to create a product and, soon, a company that we call [? Maximo, ?] which does the fully automated mechanical installation of solar panels.

Now, to your point about computer vision and cameras, a few years ago when we were looking at this computer vision was not as developed as it is today. So part of our development and our leap of faith was assuming, on a forward-leaning basis, that the technology, or recognizing, rather, that the technology would improve. And now, we're looking back. We've got our first couple of robots in the field, and we're scaling up.

It's not only a more efficient way of doing things, but it's also creating higher-quality installations and is much safer because you're eliminating the 200 to 400 times a day picking and placing of panels that are 60 to 70 pounds, which in turn has meant that the breadth of people who are able to do these construction jobs has widened on the basis that not everyone can pick up a 70-pound panel. But many more people can drive a skid steer or operate a robot that doesn't require the same amount of physical strength. So there's all sorts of applications of AI even in places where it wouldn't necessarily naturally occur to you.

And you'll get a lot of those examples, too, walking the hall out here in the exhibition. Shinjini, anything to add there, on some of the practical applications of AI that you guys are looking at SCE?

For sure. Yeah, actually, we have a booth outside with a couple of examples that are already deployed. This goes back to the culture change. Yes, we can have a big strategy around AI, but let's get the work going right now in pockets where there are clear and high-priority needs. So we are using it for system planning. So for example, building propensity models on where we might have EV charging coming up so that we can plan earlier to energize them.

The examples outside are looking at our inspection photographs, and using that to improve the data quality, the geolocation, of our overhead structures. There is another example of using our substation data, our AMI data, and other [? SCADA ?] data to identify faults earlier, including incipient faults. So there are a lot. It's even being used outside the grid space and the customer service space to anticipate what kind of calls we might be getting when a customer calls in so that we can respond faster and also doing the insights after the calls.

So there are a lot of applications across the board, and image recognition is a big part of it, now that we're taking pictures during all our jobs, especially inspections, including from the ground and with drones. And that's such a rich source to get much better information without having to do all the manual work, and doing it much faster.

And I know PG&E has done a lot of that too, around customer engagement and educating customers on rate design and programs that they could be eligible for, and using that in conjunction with asset health, and the EV adoption challenges is right there, front and center. Andy, we so often, in these settings, in conferences, and including DISTRIBUTECH, talk about the great opportunities and how there's so much growth and how engaging this space is.

Now, we don't always talk about the pitfalls and the potholes to avoid. So I'm curious if you've got any insight to layer in here on the AI journey and making sure that we don't step in one of those potholes along the way and, maybe, how PG&E thinks about that.

Yeah. I think the way we think about it is there's so much promise in AI, but you've got to do it gradually, such that you're validating across the way. A good example is this-- our industry is heavily regulated, and we filed rate cases. We do discovery processes. So where we are right now is we're working closely with a company called HData that will help us in these regulatory filings.

And what that means is-- let's take our wildfire mitigation plan. It's a 1,700-page document. How do we rewrite that document in a way that's simpler and easier to understand? That's an example where you can use AI right up front. It also allows you to quickly search all the wildfire mitigation plans that have been place by PG&E, by SCE, by Bear Valley, and all the utilities, and then look to see if there are opportunities that you're missing.

So those are the things that you can-- you can use it gradually. You don't have to go all in on it. But then as you get practice using it, you learn what works, where the AI is kind of misleading, how do you have to course correct, how do you have to reference to make sure that you're validating things correctly. So those are some of the-- it's not really a pitfall. I think we're getting better at doing it.

And the best example I can give, actually, is back to my Tesla, which is-- you know, we have our office in Oakland. And it took me 16 times to let full self-driving drive me all the way from the parking lot at OGO, in Oakland General Office, all the way to my house. It started, it would navigate down the ramp, and then if I was scared, I would stop. And so it took me 16 times before it actually did it all the way.

And that, to some degree, I feel, is a microcosm of the journey we're on. We'll start. We kind of feel uncomfortable. We stop. You know? We go back to the old way, and then when we feel comfortable again, we get back and say, OK, let's let the AI do it for us. Let's see. Let's learn. Because I think the cultural journey is us as well as the tools that are getting better.

And right after we conclude here, Andy's going to be offering ride-alongs in that--

[LAUGHTER]

--out on Market Street.

Can I add just one--

Please.

--one thing to that? I think the human-in-the-loop part that both of you mentioned is really important. Sometimes we forget, when we're applying [? at ?] AI, that humans also make mistakes. So we, ourselves, are not infallible. And therefore the expectation that the AI will be perfect right away is the wrong approach. That may allow us to too easily dismiss the technology.

And so a lot of the programs that we're implementing are very similar. I mean, I realize your Tesla is not a PG&E program. But having humans in the loop for some of our vegetation management applications or our customer service applications that can sense-check things-- but exactly as you say, Andy, over time, the AI gets better and better, and then the amount of human in the loop needs to be reduced a bit, and the humans can take on more creative and meaningful work.

We've got two minutes left. The yellow light is on, so I believe that means go quickly. So rapid-fire here, as we land the plane and set this foundation for AI and utility. [? Shinjini, ?] how you're thinking about this at a high level, and the opportunities, near and long term, here.

A lot of opportunities. It's really up to us to figure out a systematic way to go about this. And to me, affordability-- I think Quinn was talking about it-- is a big thing. And the only way we're going to get that level of operational efficiency is through AI.

Perfect.

Andy?

I think it's just the small wins. I think every day, if you can think about, how do I use AI to make myself a little bit more productive? And if each of us does it in our teams and with each other, that just accelerates our own level of cultural adoption as well as improves the tools.

And [? Ashley, ?] would you like to close this out?

Sure thing. I am going to plus-1 to what Andy said and borrow from Nike and say, just do it. If each of us in the room tries to apply AI-- let's just call it once a week, to start-- what we do is not only give ourselves more confidence, but also as leaders in our organizations, provide an example. And a small thing that we did at AS is we update our board about every six months on our AI strategy, and then there's various things that we talk about with the board in between.

But we, early on, just had a session where we literally had them get out their laptops in one of our committee meetings and said, all right. Use ChatGPT to-- it was a wine pairing at a restaurant, in this case. But just do it ourselves. There's a ton that we can do. And if we do that, it'll get us that much closer to application.

Sounds like a fun board meeting. Please join me in thanking our panelists, [? Ashley, ?] [? Shinjini, ?] and Andy.

[APPLAUSE]