Paul Lau, Leader of California Large Public Power Utility

Conversation with Sacramento Municipal Utility District
General Manager Paul Lau
with PUF's Steve Mitnick and Guidehouse's Chris Rogers

Large public power systems in the United States altogether serve some thirty million consumers across twenty-one states and Puerto Rico. These not-for profit utilities are owned by and accountable to the customers served.

The Sacramento Municipal Utility District is the nation's sixth-largest community-owned electric utility and serves some 1.5 million customers within nine hundred miles in and adjacent to Sacramento. It was one of the first large utilities in the U.S. to make a zero-carbon commitment in its electric supply by 2030.

Public Utilities Fortnightly's Steve Mitnick and Guidehouse's Chris Rogers caught up with the busy General Manager of this municipal utility, to find out how he is handling the decarbonization transition and many other issues. SMUD's Paul Lau has much to say on how he is successfully guiding the company.

PUF's Steve Mitnick: How do you see the current state of the utility industry and SMUD's role in it?

Paul Lau: This is a transformational time as the U.S. and the whole world are transitioning to a zero-carbon economy, and we're proud to be leading the way.

We were one of the first large utilities in the U.S. to make a commitment to zero-carbon in our electric supply by 2030. This is the most aggressive goal of any large utility in the U.S.

Our zero-carbon plan triples our renewable energy resources, electrifies homes and vehicles, closes and/or retools our natural gas power plants, and brings new technologies to market. It also expands customer-owned resources such as rooftop solar and battery storage.

Currently, SMUD's power supply is on average about fifty percent carbon free. We expect that with current plans and technologies, we can get to ninety percent carbon free. Closing the remaining ten percent gap relies on new and emerging technologies and partnerships with our community, and local, state, and federal regulators.

Our zero-carbon plan accelerates the development of new and emerging technologies, such as virtual power plants, biofuels, thermal/battery hybrids, pumped storage, and carbon capture, storage and sequestration. It also moves forward hydrogen and methane technologies.

Our plan includes more than three thousand megawatts of renewable power, which will power about eight hundred thousand homes.

Specifically, we're going to add eleven hundred to fifteen hundred megawatts of new local utility-scale solar. We're going to add seven hundred to eleven hundred megawatts of local batteries, three hundred to five hundred megawatts of wind, one hundred to two hundred megawatts of geothermal.

We just signed a contract to give us one hundred megawatts of geothermal, and we're on track for one hundred megawatts of regional solar, five hundred to seven hundred fifty megawatts of rooftop solar, and fifty to two hundred fifty megawatts of customer-owned battery storage.

In fact, right now we are offering customers a two thousand five hundred dollars-incentive to install solar and batteries. We're partnering with our customers to optimize what they're installing and using for the benefit of the entire grid.

Though it's a small percentage of the norm, we must strengthen the grid to plan for those extreme cases, which in the past we never had to do. This is a paradigm shift for the industry.

If customers allow us to optimize their battery and use the energy, we'll give them five hundred to two thousand five hundred dollars, depending on how much energy we draw. We're thinking about expanding some of those incentives.

We have a new vehicle-to-grid project, where we are working with a school district in a historically under-resourced community to use their electric buses and batteries to send extra power back to the grid.

Another one is a partnership with ESS to pursue long-duration battery storage. This is moving from two to four hours of battery storage and going to six- to eight- to ten-hours of storage. Long-duration battery storage will be a game changer in accelerating carbon reduction.

These are some examples of how we are partnering with our customers and others to reduce carbon emissions to benefit the entire Sacramento region.

What's interesting is buildings and vehicles are the largest carbon emitters in the state. To aggressively support decarbonization in these sectors, our plan encourages aggressive electrification of buildings and transportation. We're committing two billion dollars through 2030 to those efforts.

Reliable electric service and affordable rates are the foundation of our plan. Those are our guard rails. We will not compromise on either and have committed to aggressively reducing carbon emissions, while keeping any necessary rate increases below CPI. Currently, our rates are forty-five percent cheaper than our competitor next door.

PUF: SMUD has the capacity to move fast in many directions and it's not the biggest utility in the state.

Paul Lau: We're big enough that we have resources to do a lot of cool things. But with the way we are structured, we are small enough to be nimble.

We are not governed by the California Public Utilities Commission or the California Energy Commission. We are a community-owned, not-for-profit electric utility.

We are governed by a seven-member elected board who makes decisions in the best interest of our customers. This allows us to site and run power plants, bring on new resources, and adopt new rates and programs that are in tune with what our community wants and needs.

Chris Rogers: What do you see are the greatest challenges facing the industry and SMUD particularly over the next three years in this journey?

Paul Lau: The greatest challenge in the industry is climate change and the impacts of severe weather events. For example, last summer we saw the hottest day on record in Sacramento, one hundred sixteen degrees on September 6th. This was one day within a string of days over one hundred degrees.

During the heat wave, power resources across the state were significantly constrained, with some utilities resorting to rotating outages. But with the help of our customers, we saved about two hundred twenty megawatts of electricity during the peak time, and were able to avoid rotating outages, which we haven't had to do for decades.

We're fortunate for our partnerships in the community that allowed us to call the city, county, airport, major commercial customers, and ask them to voluntarily pre-cool their buildings, turn off lights, send people home, run some load on backup generators to help us avoid a power shortfall, and they responded.

I was fascinated when the Governor asked the California Office of Emergency Services to issue an emergency alert and within twenty minutes CAISO dropped two thousand four hundred megawatts, and we dropped an additional one hundred forty megawatts.

We were even able to export power during CAISO's peak, because our customers and community partners all came through.

Then, in January we saw a series of extreme storms that again set records in terms of damage to our grid. For the first twelve days of the year, we had six storms hit us with wind speeds between sixty to seventy miles per hour. This is my forty-first year with the company and I've never seen anything like it.

We had more tree damages than I've ever seen. Trees were everywhere. We responded to more than one thousand tree-related jobs. Big trees were uprooted from the concrete, hitting houses and bringing down our poles and wires.

During that period, five hundred ninety-nine thousand of our customers experienced an outage.

We were able to get ninety percent restored within the first twenty-four hours. And we had mutual assistance from throughout the state and beyond to help us. Prior to this, the biggest storm we had was the big windstorm in 2008.

During the January storms, we replaced four hundred twenty-five poles and one thousand eight hundred downed wires within the first ten days. Compared to one hundred fifty poles in 2008, which was our previous worst storm.

One of the biggest challenges is making sure our customers are prepared and understand those are extreme cases. It's only a few hours of the year.

Though it's a small percentage of the norm, we must strengthen the grid to plan for those extreme cases, which in the past we never had to do. This is a paradigm shift for the industry.

Our zero-carbon plan triples our renewable energy resources, electrifies homes and vehicles, closes and/or retools our natural gas power plants and brings new technologies to market. It also expands customer-owned resources such as rooftop solar and battery storage.

In the old days, we would build the grid to meet customer load. Now, with renewables, with the variability, the customer must be part of that solution.

We must partner with our customers to optimize customer resources like solar, battery storage, smart thermostats, and EVs. We must educate our customers about load shifting, precooling homes before peak, and charging EVs during nonpeak hours.

PUF: How do you prioritize your several strategic initiatives?

Paul Lau: We believe there is no one silver bullet that will solve this. It will take many tools in the toolbox.

That's why we are taking a comprehensive approach to carbon reduction. I'm proud that for the first time ever we are implementing a comprehensive enterprise strategy and prioritization process to help us stay focused, efficient, and innovative while achieving our goals.

Our goal is to deliver reliable, safe, and clean power at affordable rates. We are customer focused, working to bring value to our customers and improve the quality of life in our region.

PUF: That community equity and affordability are so important.

Paul Lau: That's one of the reasons why our rates are forty-five percent lower than our neighbor.

This allows us to keep about $1.3 billion dollars in the local economy, which is crucial because every dollar you take through rates, you take from customers' pockets and therefore you take

from the economy. It's important to lower the bill burden as much as we can because we have about ninety thousand people who are low income.

Equity is also a key priority. In the transition to the zero-carbon economy, we want to make sure no community is left behind and we are making sure of that through our Community Impact Plan.

One of the key priorities we're looking at is, how to get the local workforce from historically under-resourced communities to participate in this zero-carbon transition.

We are partnering on inclusive workforce training and inclusive economic development. We want to make sure all those jobs – when we're installing EV chargers, electrifying buildings, installing rooftop solar – come from the local community.

We've spent a lot of time working with NGOs and the labor unions to make sure that we provide a pipeline from training to jobs, so when people go through training to get certification, there's a job at the end because that's where the economy is headed.

The priority is bringing the community along, making sure they're part of the solution, and creating partnerships with the state, our policymakers, legislature, California Public Utilities Commission, Energy Commission, Air Resources Board, the local Air Quality Management District, and others.

We are not big enough to do all the things ourselves, but we believe if we get everybody to partner together, we can go far. We're also focused on diversity, equity, and inclusion in our workforce.

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PUF: Within the company?

Paul Lau: Yes. Within our company and outside the company. We said we want to create a culture of high trust where everybody feels like they belong and support our employees from the time they enter the door. We want a diverse workforce that represents our diverse community.

If they're a new employee like I was forty-one years ago, hopefully one of them will become a CEO forty-one years later. How do we recruit and retain a diverse workforce and make them feel supported?

Chris Rogers: Are you optimistic about how the industry will perform over the next ten years or so?

Paul Lau: I'm extremely optimistic. I've been here forty-one years and it's the first time my kid is interested in what I do because of the work we're doing to transition to a clean energy

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Exelon, AWS, EDP

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PUF: Talk about your partnerships.

Sandhya Ganapathy: From a utility perspective, many of our large-scale projects are delivering energy to our utilities. We have a relationship with almost all the top utilities, whether it's here in the U.S. or Canada.

We also are a big supplier of energy to corporate customers. I'm specifically thinking about big tech, and now we are breaking into the manufacturing segment.

We also bring investors directly into our projects. Think about a pension fund or an infrastructure fund that wants to invest in equity. They can directly come into our project saying, "I have a two-hundred-megawatt facility. I want to own eighty percent of that."

Then we bring that investor directly into that project, so a lot of partnerships are on the investment side. Then of course on the supply chain side, with the OEM, whether it's on the wind, solar or battery side, or across the value chain.

We also need that because we can't do it alone. We need all of these aforementioned stakeholders in addition to our stakeholders in the communities and more to help us make our renewable future happen.

PUF: What is the most rewarding for you in this job?

Sandhya Ganapathy: It's the successes that the people and employees in EDP can relate to. A lot of time, effort, commitment, and perseverance goes behind each project that we build. That's how I look at it.

When they start getting involved in a project, it's six, seven years of their lives that go into it, and it's their pride. It's as simple as that, and to see them overcoming the challenges, whether it's permitting, transmission, an off-take, financing, construction, or supply chain, that is rewarding.

Over the next 4 years, we are investing close to 11 billion dollars in the U.S. Imagine the expansion we're talking about here, if over the last 17 years we made more than 17 billion dollars of investment.

They're getting it done and their happiness and feeling of accomplishment when they pass each milestone is fantastic to see.

It's amazing when I hear people saying, "Hey, I got this permit done. I got this county abatement done. All the landowners are supporting us."

That kind of happiness from having done something because they truly believe in doing what they're doing, is the difference. You have people who believe in doing what they do, who walk the talk, a company that walks the talk. That's the fun part of my job. PUF

Paul Lau

(Cont. from p. 10)

future. Getting the next generation involved in helping combat climate change and what we're doing with equity and bringing value to the community is exciting.

We are drawing the line in the sand and saying climate change is one of the biggest challenges facing mankind right now, we don't have any time to waste.

This is a once-in-a-lifetime opportunity to make a difference. There are so many people working toward the same goal, from our customers to our board, all the way to the Biden Administration.

There are so many smart people around the world tackling this challenge. Japan is all in on hydrogen. You're seeing the breakthrough now on green hydrogen. The Department of Energy is putting the gauntlet down and saying that by 2030, hydrogen will go from six dollars to one dollar.

We're going to solve the electrolysis efficiencies and the piece about the technical challenges of transport. When we talk to Mitsubishi or GE, they know that the challenge is to go to one hundred percent green hydrogen turbines and their engineers are working feverishly at it.

There are people in Japan and Germany. You have a lot of alignment, not just in the U.S. but globally trying to address this challenge, so I'm very optimistic. PUF

REQUEST FOR PROPOSAL: FOCUSED MANAGEMENT/FINANCIAL AUDIT OF MONONGAHELA POWER COMPANY and THE POTOMAC EDISON COMPANY – The Public Service Commission of West Virginia has issued an order for a focused management audit involving financial accounting to be conducted of MonPower and Potomac Edison. The scope of the audit extends from 2018 through 2022 in connection with an upcoming rate case to be filed in April 2023. The audit needs to be expedited due to the Companies' upcoming rate case. Visit https://bit.ly/3Ao2Iqw for the full scope of work. Proposals are to be submitted no later than 5:00 p.m. EDT, May 22, 2023.