Michael Heyeck

Photo: Michael Heyeck

> Distribution gets the last dime and donut. We need to transform distribution, and regulators in the states really need to make sure that they're funding the distribution.

Founder of The Grid Group LLC; **VP Finance & Treasurer** at CIGRE; **Chairman** of Westerville City Council

Interview with **Michael Heyeck**

Alan Ross: I'm Alan Ross, the managing editor of APC Media and APC Technologies. We are at the CIGRE 2023 Grid of the Future Symposium, and these interviews are with the leaders at CIGRE and the industry. I hope you enjoy. My next guest is Michael Heyeck. You are a sole proprietor now of your own consulting group, but before that, you were with AEP for years. But first of all, you're an engineer.

Michael Heyeck: Yes.

AR How did you get into the industry? How did you decide to become an engineer? Because back in the day, it wasn't the sexiest thing to do, but you got involved in it.

MH Well, it was a sexy thing to do because I was born during the space race, putting a man on the moon.

That got me involved with engineering. I wanted to be a teacher, but my mother said, no, you should be involved in engineering.

I like math and science and stuff like that, but power engineering is electricity, utility work. That's public service. I'm glad I stepped into electrical engineering and into the utility business.

[ENGINEERING] WAS A SEXY THING TO DO BECAUSE I WAS BORN DURING THE SPACE RACE, PUTTING A MAN ON THE MOON. THAT GOT ME INVOLVED WITH ENGINEERING.

AR Were you with AEP your entire career?

MH Yes.

AR What did you do for AEP? What did you do when you started? What did you do when you left?

MH I was involved with transmission planning, and then I got involved with putting a budget system in, because I got an MBA as well. I was a budget director for AEP, then I got into transmission operations, and then I headed up transmission.

AR This is a significant problem today. We're asking more of the grid today than we ever have. The grid of the future has to be a hardened grid, but it needs to be a moderate grid, and it needs to be a flexible grid, and it needs to be resilient and reliable. And, oh, by the way, we need to solve the problems of diversification, decarbonization, digitalization, fix the world, because we're now going to be an electrified world. That's really what we're facing now. There's more change, I think, in the last five years than in the last hundred years. We've gone from a fairly growth-oriented, but static world, to now a rapidly changing one, everywhere. A lot of great challenges in it. Without going into transmission, pick an area and tell me what you think one of our biggest challenges is for engineers today.

MH Isn't it exciting? I'm hoping we get more engineers coming in because the energy transition is exciting.

We could focus on renewables and transmission, but everybody talks about that. I'm going to talk about distribution.

Distribution gets the last dime and donut. The reason is, if I'm going to invest a dollar, I'll invest it in transmission, because I got one regulator. For distribution I got 50, and it's 150 basis points less than transmission. We need to transform distribution, and regulators in the states really need to make sure that they're funding the distribution. That makes the utilities talk to the regulators and educate and inform them as to what we need to do with respect to distribution. With all this electric vehicle charging, the distribution system is not ready for it now in mass proportion. So we got to transform distribution. I'll probably be the only person talking about that.

AR Well, and it happens to be my love. Distribution is how I was retired as the president of the Electric Power Reliability Alliance. We heavily focused on distribution. And we believe kind of like what you believe. You got 50 regulators, but you also have 50 problems. Everybody doing it a different way. People trying to say, do *my* thing. Technology companies were saying it was proprietary, and it doesn't fit, this my thing doesn't fit with this thing. So we've got a lot of misfit in the distribution systems out there. Now we're trying to bury cables everywhere - nobody wants an overhead cable in their neighborhood, because it'll cause a fire and burn houses down. We've got a lot of things that are going on at the distribution end that we haven't had before, as much as generation is now at the distribution end. I agree with you.

Given that you've just mentioned one of the problems is you've got 50 different regulators

Photo: APC Media

on distribution, but there is not going to be one size *fits all*. If you were talking to a utility as I'm sure you do in your consulting role, but as you talk to them about how do they bring about the best, most reliable, most flexible, how do they build it today for the future, what are the things they should be looking at?

MH From a regulator's perspective, electricity is becoming unaffordable, so affordability is very important. It's the challenge for the engineer, the utility executive, to talk to the regulator about how they can improve distribution in order to save money. I just saw a presentation on distribution automation and you could see the opportunities to save money with respect to making sure that the load duration curves are in the right order. Right now, the load factor on the grid is probably the worst it's ever been, probably around 50%. You could take opportunities to utilize that load factor that's inefficient and spread out the load, and you could do that at the distribution level given you have DERs, distributed energy resources. You plug in your car; you got a battery right there. There are opportunities where the electric utility can inform the utility regulators on how they could save money and keep electricity affordable.

AFFORDABILITY IS VERY IMPORTANT. IT'S THE CHALLENGE FOR THE ENGINEER, THE UTILITY EXECUTIVE, TO TALK TO THE REGULATOR ABOUT HOW THEY CAN IMPROVE DISTRIBUTION IN ORDER TO SAVE MONEY.

AR A lot of the distribution in this country is with the co-ops and municipalities, and there's a different level of regulation even for them. And there's a kind of an insular approach. I know that NRECA is really doing a lot of work to bring in some concepts and ideas that help at the rural level, because the rural electric is no longer rural. I mean, I'm a member of one in Marietta, Georgia. When it was started, it was a small rural thing. Well, it is now one and a half million population. It's right at the city of Atlanta and it involves different complexities than Georgia Power had. Talk about that a little bit at the distribution level, because it's a different level of regulation.

MH I'm an elected official in Ohio. I've been on Westerville Ohio city Council for 30 years.

We're a municipal electric system. And guess what we did on Saturday? We talked about rates and how we can keep rates affordable, not just at the energy level, but at the distribution level. And I know NRECA, the National Rural Electric Cooperative Association and the American Public Power Association, they are great venues to bring in the experts to make sure the membership knows what's going on in the industry. At the municipal electric power level, it's easier than with a regulator. Basically, you have a city council, that's your rate-making body. You don't have to go to a regulator. On the other hand, it could become very politicized.

Here's an example. Energy. Do we go for renewables, or do we go for blocks of energy? We maintained that we are going for blocks of energy, because the cost is the most important.

Those blocks of energy already include renewables and they're growing. We got to be very careful on how we approach not only our energy business or brokering, but also on the distribution automation level. We're introducing distribution automation in our 16,000 meters city and trying to peak shave so that we don't get the capacity charges in the PJM market. And it's nice. It's interesting. You don't have a regulator. You have a legislative body called the City Council. And the electric utility manager could actually drive that experimentation and then keep costs down a lot more effectively than large utilities sometimes. Especially a multi state utility.

AR The headaches that you avoid by being a municipality type, self-regulating, self-rate-setting is amazing.

Let's just say ten years from now, 20% of your former ratepayers, now consumers, become *prosumers*. That's going to change a lot of what you have to do, because now as a prosumer, they want to sell you power only when they want to sell it to you. And then they're going to buy power when they need it. How are you handling that approach? Or are you even thinking about that approach? Westerville is a very forward-thinking community right outside of Columbus, and it's going to happen there. You're going to get a bunch of EV adoption. You're going to have solar panels on the roof and some guy will put a wind farm in his backyard.

How are you going to handle your rate payers moving to prosumers?

MH That's a great question, because do we handle it as an aggregate of 16,000 meters or do we handle it at the meter level? And right now, it's a hybrid. We try to avoid the capacity charges by peak shavings. We provide opportunities, such as the nest thermostat going into the thermostats and reducing the load, also providing subsidies if a commercial building changes out their LEDs or changes out their lighting for HVAC, but also puts in solar panels. If they provide us the opportunity, us being the municipal electric system, to actually gate their load on their demand, you can see how we could peak shave in that environment.

Michael being sworn in for the city council, 1993

Michael being sworn in for the city council, 2021

WE TRY TO AVOID THE CAPACITY CHARGES BY PEAK SHAVINGS. IF THEY (THE CUSTOMERS) PROVIDE US THE OPPORTUNITY, US BEING THE MUNICIPAL ELECTRIC SYSTEM, TO ACTUALLY GATE THEIR LOAD ON THEIR DEMAND, YOU CAN SEE HOW WE COULD PEAK SHAVE IN THAT ENVIRONMENT.

The same goes for EV charging. It if we are allowed to get to the EV charger and say *not now, or now is a good time to do it*. So it is going to be at the device level. The issue is going to be: when they become prosumers, how do we interact with their actions? I think we're at the leading edge and it's really not a big leap to go from proactive at the aggregate level and then reactive at the prosumer level. I don't think it's a leap for us.

AR That's good. Excellent. Last question I've got for you:

CIGRE. What's the value of CIGRE to you personally and what was the value in your career?

MH CIGRE is a lot like sitting at a table filled with experts. And the United States is not the only expert country in the world. So you find out what they're doing. Thailand rebuilt their transmission grid, for example. What is the UK doing with respect to charging? How about Italy? What's Greece doing? You're sitting at the table with experts beginning to talk and trade information. And that knowledge exchange is really what CIGRE is all about.

The tagline is for power system expertise. But imagine you're sitting at the table with experts from around the world in any space that you're in. From a career perspective, if you're in transmission or distribution and you want to know what's going on in the UK or in Italy or in Australia, you likely know somebody that you could talk to. You also know the information through E-CIGRE, our searchable site, to go to technical brochures to figure out what's distribution automation like in Melbourne, in Australia, for example. It's a knowledge exchange and it's also a career development perspective. Now, I've been fortunate that I was the U.S. National Committee president from 2010 to 2016. I'm now the CIGRE VP Finance and Treasurer in Paris. I don't reside in Paris.

We got through COVID and we're doing quite well with respect to our marketing and branding campaign. We just got approved a strategic plan to grow our membership and to evolve our technical base to deal with the energy transition.

AR You talked about marketing and growing the membership. There was a sense, I don't think it's true, but there was a sense that IEEE and CIGRE are kind of moving to different parts of the world trying to become the more dominant event. But in truth, they play different roles.

CIGRE IS A LOT LIKE SITTING AT A TABLE FILLED WITH EXPERTS. AND THE UNITED STATES IS NOT THE ONLY EXPERT COUNTRY IN THE WORLD.

MH CIGRE was born in 1921 out of the IEC, which was a standards body, and CIGRE became a technical collaboration to help develop standards for the IEC. IEEE is a standards body. IEEE is worldwide. CIGRE is worldwide. I see them as complementary, and I don't like to call them competitors. I really like to see them as complimentary. IEEE does have an academic side in their standards development as well as the industry side. CIGRE tends to be more on the industry side with policymakers and decision makers at that technical level. I see them as handing glove.

CIGRE IS A KNOWLEDGE EXCHANGE AND IT'S ALSO A CAREER DEVELOPMENT PERSPECTIVE.

AR I think there's a memorandum of understanding that has just been signed between the two organizations, because standards, and that's CIGRE to me, is knowledge of practical application. These are the people that actually put the power into the homes and into the factories and make the world run. It's a good collaboration.

MH Two heads are better than one.

AR Much better.

MH If I'm looking at distribution automation, I got IEEE, I got CIGRE and I got a lot of opportunity not only at career development, but also in technology *en mass*.

AR I appreciate you doing this. Thank you for doing the interview.

Photo: APC Media, Michael Heyeck