

MARTY ROSENBERG
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THOMAS KUHN INTERVIEW

Hi and welcome to GridTalk. Today we're very pleased to have with have with us, Tom Kuhn, who until the end of the year remains the president and CEO of The Edison Electric Institute which represents our nation's investor-owned utilities keeping the lights on for 235 plus million Americans.

Q: Hi, Tom.

A: How're you doing Marty?

Q: Very good. I'm very pleased to have you here. You and I have talked many times over the years and I really have some pressing questions I want to talk to you about that everybody's interested in and so I'm sure this will be a runaway best seller.

A: Well, I don't know about that Marty. You've been very kind to me throughout the years and that's probably the only reason why I'm still around, you know.

Q: You joined Edison Electric Institute in February 1985. It was about that time as a young reporter that I joined *The Kansas City Star*. They were building the Callaway and Wolf Creek Nuclear

Plants in Kansas and Missouri and that was a very different era. Talk about what the electric utility industry was like in 1985 and in 1990 when you became president of EEI and then we're going to do the segue into the present and the challenges of today.

A: Well, the electricity industry has always delivered an incredibly essential product to boost the economy and improve peoples' lives so it's always been a very exciting place to be. But on the other hand, back then, we were looked upon as being the most polluting industry in the country and also from the standpoint of sulphur and nitrogen particulates, etc., and so I think that it was the remarkable changes I've seen over my period of time is just how quickly we've moved to address those issues and to get in front of them and to move to being the solution to environmental and climate issues.

Q: So, why don't we just jump right in and say right now or as of recently, electric utilities contributed 30% of greenhouse gases to the environment. How fast will that percentage change in your view and what kind of effort will it require?

A: Well, I will start out by saying that I'm very, very proud of our company's records of; when I first came on board, the first legislation that we confronted was the Clean Air Act of 1990 and since then we have reduced our emissions of those things that I've mentioned, sulphur and nitrogen particulates are

created by more than 90% and about a decade ago, we were still the highest emitter of carbon and we really set goals to change that and have done so dramatically. I don't think anyone would have guessed that we would be 40% lower on emissions as quickly as we have gotten to where we're at the lowest level that we've been since 1983 and 40% of our generation outcome comes from zero carbon energy sources such as the nuclear and hydro power, and wind and solar energy so it's been a very, very exciting transition that we've seen.

Q: I don't think many people outside the industry are aware of the financial clout and the financial resources of the utility sector. Just from your own pages, last year, utilities were going to spend upwards of 150 billion dollars on capital expenditures. That's slated to rise 12% to close to \$170 billion by 2025. Now your members don't serve every American but if you just spread that over the U.S. population, that's over \$500 for every man, woman, and child in this country. Talk about what that money is going towards right now and how that's the mix of what investments are being made has changed over the last few years, over the last few decades?

A: Well, Marty, you are correct. We are the most capital-intensive industry in the country and the investments that we make are obviously to make sure that the electricity we provide

is reliable and affordable and able to be there when people need it and we've gotten a great deal cleaner as well so there's been investments made there, and we've also made tremendous investments in adaptation, hardening, and resilience as we've seen the storms we face as the result of climate change, have been much more impactful and damaging and so we've had to harden those systems quite a bit to withstand those storms so that we can get the electricity back on as fast as possible and so hopefully that they also mitigate against the problems that we might have as a result of those storms to turn off the electricity.

Q: How deep will penetration of renewables be in your members' generation portfolios and the generation that they buy from other providers?

A: Well, renewables have been the largest source of new additions that we've had over the last decade. It's been 60% or so Since 2020, it's been more than that; it's been almost 80% with the new generation that's come from renewables. At the same time, we need since renewables are sometimes intermittent, we need the steady sources that you need to back up the renewables; the natural gas which has been a clean energy reliable partner and has helped us and has been a big part of our emissions reductions that we've achieved over the last 15 years or so, it

has been the replacing of heavier emissions sources with natural gas. Nuclear energy has been a key part of that as well and again, sits a good part of those investments are going into transmission and distribution and technologies we need to put in there to make the system more resilient from storms and other situations like that.

Q: So, we'll come back to storms in a minute but I want to talk to you a little bit about electrification of transportation. A lot of automakers have announced that by the mid '30s, they're going to largely stop producing fossil-burning vehicles. That means there's going to be an awful... awful's the wrong word...a tremendous growth in electric use. Are your members prepared for that and what kind of troubles might be anticipated gearing over to keep all our vehicles powered in coming decades?

A: Well, we are seeing great increases in electrification. Marty, I own one of the first electric vehicles ever. It was the General Motors EV1; had a range of 12 miles, but I believe that that situation was going to change. It took about 10 years for the first million electric vehicles to be purchased; three years for the next million, and now, it's accelerating greatly as every automobile manufacturer produces EVs around the world. So, I think that the electrification of transportation is a very, very exciting thing. It might be situations in the future where we

might have electric vehicles as backup storage devices for houses and, but I think that the industry has always; we've handled very, very strong electricity growth and the beginning of this industry it was double-digit at one point in time and I think that we are certainly going to be able to handle it this time as well but it will be challenging.

Q: If you look at the oil sector right now that provides the gasoline to our vehicles, it's a huge sector of our economy and if you start bolting that on to electric utilities, that kind of revenue, that kind of impact, how's it going to change the business and the culture of electric utilities do you think?

A: Well, I think that the electric transportation along with data centers which are big users of electricity, artificial intelligence, heat pumps, electric heat pumps, building electrification is all going to change it quite a bit and I think as the use of electricity accelerates, it's going to be more important for us to maintain that reliability that is so very important, and to maintain the affordability. We are very cognizant of how important electricity is to every household in this country so it's very, very important for us to maintain reliability and affordability but what is going to have to change is obviously our response to increasing growth and the need to maintain reliability for our customers so the culture of

companies is going to have to change a little bit so that we can adapt to the challenges that we're going to face.

Q: What kind of leaders are you working with? You and I have talked to the giants of the past, the John Rose, the Jim Rogers. How are the new generation of leaders emerging and how are they different from their predecessors?

A: Those were giants but we have new giants and they are a very exciting group of people who really, I think, are bringing changes to the industry and bringing a sense or urgency to these new challenges. I am very, very optimistic about our new leaders and we've got some really terrific people in our industry that are going to help us transform this business and transition to the new global inflection point that we're in now.

Q: So, your offices, if they're still where I remember them to be, are on Pennsylvania Avenue allowing you to look out on the White House and Congress and there's been a lot of action there since COVID of spending on Inflation Reduction Act and infrastructure that has particular bearings on the electric utility sector. How have those funds made a difference? Are you pleased the way they've been spent? Would you like to see them spent faster? Talk to us a little bit about how your assessment's going.

A: Sure, Marty. I also look across the Pennsylvania Avenue at the National Archives which has those words inscribed in the building that those who forget the lessons of the past are doomed to repeat them, so hopefully we will remember the lessons that will help us to achieve success in the future as well. The Congress and the White House led the charge on the Bipartisan Infrastructure Bill that we got a few years ago and clean energy tax credits, the Inflation Reduction Act. They were historic pieces of legislation that our infusing-needed capital into this business to help us to help us to achieve this clean energy transition and to enable us to bring on new technologies that will help us address those challenges that you mentioned.

Q: Let's talk about weather now from what happened in eastern Canada and the smoke that's come down into the United States to the horrible situation in Maui and fires in California before that. Really unanticipated problems and we don't know if that's the new normal of a harbinger of things to get worse. How are utilities assessing the risks and how are they responding to it?

A: Well, you bet. So one thing, Marty, that I am very, very proud that has happened is we have great partnerships with the federal government to address the storms and record hurricanes and tornadoes and wildfires and even things like cyber issues so that we have formed this partnership with the federal government.

We have the Electricity Subsector Coordinating Council which is made up of the highest level of people in the administration as well as our industry that works closely on these issues. A number of years ago, we added wildfires to that list, and we have again a CEO-level task force working on wildfires and to address all the aspects of wildfires. The technology changes that we have to bring onboard to help us be more predictive of wildfires and also to help prevent them and to help deal with the aftermath of wildfires so that's one example of a very, very important thing. We've got a partnership with the Department of Energy, Department of Interior, Agriculture Department, etc., to address this very, very important issue and we are committed to address it very, very aggressively now. Most wildfires are not, don't have any cause with respect to electric companies; they start somewhere else and they sometimes do it, electric lines, but they're not usually the principal cause of the fire. But again, I think with new technologies and other solutions, we'll be able to greatly reduce the risk from wildfires.

Q: But they do raise the liability questions about whether power lines might have sparked a fire and do you think there are new ways approaching that or covering the risk that your members face so that the problem could be more broadly addressed?

A: Oh, I think so. I think there's definitely very, very new ways to do it. Again, number one I would say is with new technologies which are being employed in California where some of the issues started originally and we're working with the National Labs, too, on some of those technologies. California set up a fund that with the government in California, with the state government, and that's been very, very helpful too out there and we can look at some of those models as we figure out solutions here that might be partly applicable in other places and western regions and other areas that are being impacted, so again, it's a combination of technologies and public policies and working collaboratively to figure out solutions.

Q: What about new technologies like using hydrogen as a carbon-free source of energy? How promising does the industry view that and where is it being tried early and possibly successfully?

A: Well, you probably saw over the last week I think some 17 American companies got grants from the Department of Energy for hydrogen hubs. The Bipartisan Infrastructure Bill and the Inflation Reduction Act really kind of focused on technologies, longer term technologies like hydrogen, advanced nuclear, carbon capture and storage, long term energy storage, that can really be tremendously impactful to meet clean energy goals and the growth of electrification that we see coming with the economy. In

addition, you probably remember about 10 years ago people were saying electric companies were in a death spiral because we were too slow and we were not being responsible. We were unable to introduce new technologies and we said, okay, maybe we're not the fastest companies to introduce new technologies but we can team up with technology partners to make things happen quicker and you're seeing that in such a broad scale right now where so many technology companies are partnering with us to make some huge changes in this business and again, I think that review says is going to be one of the more exciting things to watch over the next decade.

Q: So, I'm hoping the next question will see you freer and more open to embrace a controversial stance than you might have been in the past given that you're headed for a new assignment at EEI but we're governed by a system in this country where state regulators, diverse regulators, set policies at a time where as you just pointed out, faster and faster changes of embracive technologies is important. Should the system be changed or looked at, at what's possible? And feel free to say something that you might not have said two, three, four years ago on that.

A: Well, again, I think that some people would criticize that system and say that, well, it may be too slow to adapt to change. I don't see that happening right now. I do see our regulators

changing along with the companies in the industry and I think that I believe that the business model that we have protects the customers better than any other business model with regulation, with the state regulators and federal regulators, we are probably the most heavily regulated industry in the country, but the regulators are there for a good reason, to be kind of a judge on how fast we bring on these technologies, whether or not we protecting the customers from an affordability and a reliability standpoint, we are obviously in addition to new technologies for, to address the clean issue. We're also bringing on a lot of new technologies for resilience and adaptation and hardening of the system so it's a balance but it's been a balance and I've seen again industry change and the companies change as well as the regulators so I don't think I would recommend any major change in the overall model. I think that it's one that enables us to get the job done and to protect our customers.

Q: That being said, how would you way the business model of the utilities has changed? What are the values they're being asked to embrace? You yourself said emission is incredibly a cleaner environmental imperative now where they might not have been earlier in your career. How did they change the business to reflect these new cultural values?

A: Well, I mean, there are a lot of new cultural values that we've adopted and I think that the first one is that we are, I've seen us to be quicker to react, quicker to adapt new technologies, the customer's always front and center in our mind but also, we've changed other parts of our organizations to reflect important, I think, cultural values like diversity, equity, and inclusion, the Justice40 Initiatives, things that we have doing to make sure that our companies are reflective of the customers and the communities they serve. So, but I also see a situation where because we have gotten so much cleaner and we are so much committed to it, we are attracting really a tremendous number of young people into this business right now and they're coming because they see a purpose in life. They see a situation where they can be very, very proud of the companies with which they serve and I think that's a wonderful thing to see happening.

Q: When you reflect on your career now, what do you think has been your greatest success? What are you proudest of? And what do you wish you could have done over or would like to do over?

A: Well, you know, life doesn't give you a do over and so I'm not one that looks back a whole lot with major regrets. I am very, very proud of, again, the leadership of this industry. You talk about the past leaders that helped us address the challenges of going from an industry where again, we were an essential

industry, but we were the highest polluting industry in the country, to one where we are now, a major part of the climate solution. And, I'm also very, very proud of the system that we set up for mutual assistance in our industry so that when you have hurricanes, for example, you see people evacuating maybe from Florida or whatever. You see caravans of our companies that are coming into the storm to get the electricity back on and we're doing it faster and faster and with more efficiency. We have a fantastic workforce of which I am so very, very proud that does that. That through the pandemic, they were out there in the field through every kind of adverse situation they're out there restoring power. The IBEW, the International Brotherhood of Electric Workers, and our unions are hand-in-hand with us to try and continue to improve this business so I think that this is something that I'm very, very proud. In the meantime, we've kept the industry financially sound and we've kept electricity rates actually increasing at or below the level of inflation for the most part so that electricity has remained reliable and affordable so overall, I think has been a tremendous success story.

Q: So, if we strike a personal note or two, extrapolating from a byline story in *The Washington Post* that gave your age in 2002, I'd say you're about 76 now. Am I close?

A: No, you're...77 and it is not true that I knew Thomas Edison.

Q: But it is true that you knew George Bush?

A: I did know George Bush, oh yeah, yeah, absolutely...

Q: And you and he talked at all about the current situation in the last year or two about what's going on in the world? What's going on in America?

A: Well, as a matter of fact at our last CEO meeting in Colorado, Dan Yergin who was the author, Pulitzer Prize Winner, author of *The Prize*, *The Commanding Heights*, and other things, was also a classmate of ours. He and I interviewed George W. and had a very, very great conversation. I don't... I wouldn't even call it an interview. It was just a great kind of conversation between three people who happened to be in the same class at the same time and just how much the world has changed including the energy role.

Q: So, back in 2000 in that same *The Washington Post* article, you were quoted as quoting Machiavelli saying, "The appearance of power is power." Is that still true today and how do you adapt it to your waning power at EEI?

A: *Laughing*. Well, at EEI we have a different phrase, it's...and I don't mind you going back and finding things that I said back 23 years ago but I think it's still true obviously and we're

seeing that play out throughout the world and world leaders, some of them are not exactly great examples of leadership but we have a saying at EEI as the call to power by association, the power that we have when we come together on issues when we work together. I think again Thomas Edison and Bill Ford were examples of people who really had a situation where they came together, they said they came together, coming together as a beginning, working together as progress, and staying together as success, and our industry has stayed together very, very well and I think it's led to a tremendous amount of success for our customers and the communities that we serve so I am very, very proud of that.

Q: So, the last question that I do want to ask you even though you are 77 and you are bowing out as president and CEO of EEI. You tell me you're going to be involved in technology issues. Tell me a little bit about that.

A: Well, before I came to EEI, I was in the investment business and we focused on energy and we focused on technologies and I think though again as I've said, you have seen such a growth of new technologies that are coming into this business, not only on the generation and the distribution side of the equation, but also on the customer side of the equation and that I find extremely exciting. I am not a person that really wants to go off to the beach or the golf course and so I hope to continue to

remain actively involved in that side of the equation. I am on the board of our foundation and our foundation started a new Institute for the Energy Transition to go along with the Institute for Energy Innovation that we already have on the customer side and I think those two parts of the equation are going to continue to again, report in to the main EEI as to advance the technologies and public policies that will continue to amaze our customers in the future.

Q: So, is there any one technology that really rings your bell? One emerging technology that you're really excited about?

A: Well, very currently some of the amazing technologies I see are on the transmission side of the equation, Marty. We have concentrated a whole lot on generation. I think that one technology I'm very, very excited about is energy storage. I think that's seen tremendous growth now. Some people think it's a generation technology. I think it's generation, transmission, and distribution because it solves all parts of that system. And on the transmission side of the equation, I see a number of technologies that are going to enable us to utilize our current transmission system a whole lot better because we're only about 50% efficient on the transmission system right now and I think that some technologies will come along to help us put more throughput through the transmission system. Also, perhaps de-

energize power lines from a fall so that they will mitigate wildfires so, I guess I said a lot more than one there but in fact, I have more than one that are truly exciting and there's going to be a whole lot that we haven't even thought of.

Q: Well, Tom, it's always a pleasure talking to you and best of luck as you engage those and other new endeavors.

A: Marty, thank you and thanks for being a great through leader for our industry. It's really been a pleasure working with you. Thanks. We've been talking to Tom Kuhn, still president and CEO of The Edison Electric Institute.

Thank you, sir.

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END OF TAPE