

## Viewpoint—EPRI CEO Goes Time Traveling; You’re Invited

As we head into 2016 and mark the 40th anniversary of *EPRI Journal*, I ask this question: If I could travel back 40 years to 1976, what would I tell the dedicated EPRI employees about today’s electricity sector and today’s research and development?

Here is a “top 10 list” of things I’d tell them (I invite you to read through the *Journal* to find the articles and interviews that touch on these areas):

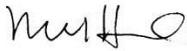
1. The power system is becoming more like the Internet, a vast communicating network of computers, sensors, processors, controllers, people, and machines that collectively produce and deliver power, and integrate diverse energy resources. “The Internet” would require a lot of explanation in 1976—and imagine how much time I could spend just on “digital.”
2. I’d follow that by introducing cyber security and the imperative to make it effective for everything on the system, including [nuclear plants](#), power delivery systems, and customers’ homes, businesses, and factories.
3. I’d give them the good news that EPRI’s research over 40 years contributed to effective controls to reduce emissions of nitrogen oxides and sulfur oxides. I’d follow that with the news of the global effort to reduce emissions of carbon dioxide. I’d use the opportunity to highlight technical challenges and the [powerful analytical tools](#) we are now using for both science and strategic planning.
4. To give my audience a slight break from future shock, I’d turn to electric vehicles. They’d be eager to learn about Volts, Leafs, and Teslas. But I’d use these also as a vehicle for describing distributed energy resources and [The Integrated Grid](#). After putting them mentally behind the wheel of an electric car, I’d shift gears to load control and grid resilience. And what a great way to showcase the growing consensus that [“the future is electric.”](#)
5. From EPRI’s earliest years, we have focused on batteries and energy storage technologies, so I’d expect ready interest in these for my 1976 Time Travelogue. I’d spotlight [lithium](#) to show how different elements and materials can become essential and highly valued as the power system transforms.
6. From our beginning, EPRI researchers have worked to develop and advance wind, solar, hydropower, and other renewable energy sources. I would enjoy the opportunity to describe not only the scale of their deployment today, but also their diverse settings, applications, and configurations.
7. I would also emphasize that much in the far off future of 2016 is familiar. Many EPRI people in 1976 were working to ensure the safe, reliable operation of nuclear and fossil-fueled baseload plants. They would be pleased indeed to see our long-term contributions to extend the life of these plants, to improve virtually every major aspect of their performance, and to reduce their environmental impacts. They would take a keen interest in how the U.S. nuclear industry’s mandate to store spent nuclear fuel now extends for decades, requiring [important R&D from EPRI](#).
8. Following that I’d offer a back-to-the-future description of how the [“mission profiles”](#) of baseload plants are being changed to integrate effectively with more dynamic loads and contributions from wind and solar. The old-time “plant guys” would be fascinated to learn how we are helping plants ramp production up and down more rapidly, even though they were not built and engineered to do that.
9. Speaking of people, I’d take the opportunity to thank the more experienced career people in 1976 for their pioneering contributions to EPRI (founded just four years earlier), and then I’d focus on the early-career people in the room. I’d remind them that I traveled from the 21st century—their retirement years. I’d share today’s imperative to gather their knowledge and accumulated wisdom, for use by thousands of people worldwide who (in 1976) aren’t even born yet. I’d come back to the word “digital” to describe how we’re working with members to [record many kinds of expertise and knowledge](#), including crucial “hands-on” knowledge in the plants. I think some of the early-career “baby boomers”

of 1976 would like the idea that their images and words could be stored and called up for decades to come—on a computer that fits in their pocket.

10. And that brings me to the final point I'd share in 1976 with my future colleagues, collaborators, and mentors: the privilege of talking with them early in our long march of progress. I have always emphasized my personal appreciation of EPRI's history and the people who make it. They understand more fully than most how every "eureka" moment is built on years of patient and painstaking work.

I mentioned at the beginning that my thoughts were prompted by the 40th anniversary of *EPRI Journal*. We now provide an [online archive](#) of the magazine, and I encourage you to check it out. While we cannot travel back to 1976, *EPRI Journal* can now bring to the present the people and work of EPRI stretching back 40 years. That's time travel in the right direction: *Moving forward*.

Mike Howard



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