VIEWPOINT

by Steve Specker, President and CEO, EPRI

The Prism in Action

One of the great things about my job is the opportunity to take field trips all over the world to see firsthand the technologies that can enable the decarbonization of the electricity infrastructure over the next 40 years. During just the past six months, I have seen almost every element of the EPRI Prism in action:

- driving plug-in electric vehicles;
- watching the testing of the latest energy-efficient lighting technologies at EPRI's Knoxville laboratory;
- touring utility-scale solar thermal plants and a renewable control center in Spain;
- walking around the Shin-Kori site in South Korea, where four advanced light water nuclear reactors are under construction; and
- participating in the commissioning of the carbon capture and sequestration (CCS) project at the AEP Mountaineer plant in West Virginia.

At the solar thermal plants, I was dazzled by the trough and tower technologies, somewhat surprised by the size and scale of the balance-of-plant equipment, and sobered by the cost-reduction challenges required to make these technologies a viable part of the future low-carbon generation mix. It shifted my own thinking toward solar thermal hybrid plants, where solar-generated steam can be provided to fossil plants, delivering the benefits of solar without the additional balance-of-plant complexity and costs.

At Iberdrola's renewable control center, I watched wind turbines from all across Spain being monitored individually but appearing to the system operator as a single, "virtual" power plant. The visual impact of hundreds of megawatts of wind-generated electricity flowing on to the grid really helped me appreciate the reality and potential of large-scale wind resources.

To those who argue that we cannot decarbonize the electricity

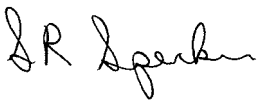
infrastructure while continuing to have low cost (or lower cost) electricity, I say, go to South Korea! They are doing exactly that through the sustained, repetitive construction and operation of standardized advanced light water reactors. I came away from my week long visit to South Korea with great respect and admiration for what they are accomplishing with nuclear power, but sobered by how difficult it may be to duplicate this success in the United States.

At the Mountaineer CCS project, I saw the first-of-a-kind integration of CCS technology into an operating power plant. This was particularly gratifying because of EPRI's critical role in helping accelerate the commercial development of the chilled ammonia post-combustion CO_2 capture technology used at Mountaineer. However, as I took in the scope and complexity of this 25-MWe CCS project, I was again humbled at the daunting challenges that lie ahead in getting the scale up and the costs down for this and other CCS technologies.

I wish that more people could or would see firsthand what it really takes to develop and deploy cost-effective technologies at the scale needed to achieve an 80% reduction in GHG emissions by 2050. Perhaps if they did, there would be fewer ivory tower analyses that prematurely declare the winning and losing technologies and mislead policymakers and the general public into believing that we have the luxury of discarding technologies such as nuclear and CCS.

I certainly did not see everything in 2009, so I'm already putting together my 2010 field trip wish list. At the top of the list is a visit to a shale gas field to see firsthand the technologies that are revolutionizing America's natural gas industry and that could have profound impacts on the electricity sector. Also on the wish list is to drive one of the first production plug-in electric vehicles to come off the assembly line of a major automotive company.

I'm sure I'll be adding to the list. Field trips are so much better than sitting in the office!



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