

Powering the People

KEY TRENDS DRIVING CHANGE

A Bold New Energy Vision

By **LISA WOOD**

Powering the People, the Institute for Electric Innovation's (IEI's) annual celebration of change in the electric power sector, brought together more than 150 industry thought leaders in March to discuss the key trends driving that change. Make no mistake: America's electric power industry—which powers our everyday lives and is vital to our nation's economy—is in the midst of a profound transformation. While much of this change is happening quietly, it is widespread and is driven by technology, public policy, and changing customer needs and expectations.

During this year's event, industry thought leaders delivered "TED-like" talks that demonstrated the transition to the energy future that customers want—clean energy, a more connected power grid, and tailored services to meet specific customer needs. This new energy future also will deliver electricity that remains affordable and reliable for all Americans. The three key trends discussed at Powering the People were:

- the digital and distributed power grid;
- individualizing customer services; and
- smart cities.



IEI Executive Director and Edison Foundation Vice President Lisa Wood welcomes guests to the 6th annual Powering the People event.



PSEG Chairman, President, and CEO Ralph Izzo discusses his vision of the future of energy.

Our Energy Future

To kick off the event, PSEG Chairman, President, and CEO Ralph Izzo and Arizona Corporation Commissioner Bob Stump provided their views, informed by their responsibilities as an energy company executive and a state regulatory commissioner, respectively, on the trends shaping our energy future. Izzo addressed the realization that reliability alone is no longer sufficient—Superstorm Sandy taught us that lesson—and that a key driver of the future energy system is developing system robustness and resiliency. A second major driver is the movement to power sources with less of an environmental impact. Each of these objectives has a price tag and a solution that resides in technology advancement and adoption.

PSEG envisions a future where customers use less electricity to achieve the same outcomes (comfort or economic output), or they use more to achieve a higher outcome. However, energy efficiency cannot be the only solution. No matter how efficient customers can or want to be, there has to be a reliable and clean supply of energy. "We have to invest in the grid in a way to make sure that once we right-size the amount of energy people need, and once we optimize the environmental impact of that energy, then the delivery system is flawless," said Izzo.

Stump warned to "not abandon diversity for the next shiny new thing," while acknowledging that "together solar and energy storage can indeed go a long, long way." Striking a balance between investing in clean energy resources and their impact on system reliability and cost to customers was a common theme at Powering the People.

Digital and Distributed Power Grid

Today, U.S. electric power companies are building the smarter energy infrastructure that customers want—a more dynamic and more secure power grid that provides customers greater control and efficiency, and more connection and interaction with thousands of distributed energy resources and devices. The implications for grid management are tremendous.

“Having spent the last century-plus as a planner, to still having a central role in maintaining a smart grid but recognizing that much of that planning in the future will be done by customers themselves, is a fundamental mind shift” for electric power companies, said Southern California Edison (SCE) President Pedro Pizarro.

Adapting to a customer-driven model is both challenging and necessary. California has a quarter of all distributed generation installations in the United States, and SCE is helping customers install private solar on their rooftops at a rate of more than 5,000 a month.

Pizarro said that the first step to developing a distribution grid that can deliver more customer choices is making investments in physical assets to allow for more resources to connect to the grid.

The second step is investing in new control systems and analytic capabilities that anticipate and quickly respond to local and broader system needs by using all of the resources in the toolkit—both on the supply side and demand side—to provide least-cost and best-fit solutions. SCE’s recent diverse resources competitive procurement, which included 260 MW of storage, illustrates the company’s commitment. Advanced Microgrid Solutions CEO Susan Kennedy described how her company is providing an innovative storage solution to SCE.



IEI co-chair and NorthWestern Energy President and CEO Bob Rowe moderates the discussion and connects the dots.



Arizona Corporation Commissioner Bob Stump describes the growing connections among energy resources, regulation, and innovation.



SCE President Pedro Pizarro explains the importance of grid modernization to support customer choice.

Individualized Customer Services

In an era of active customers, the first step is to listen and understand their specific needs. If energy companies don't take the lead, other companies will. Some large customers—like data centers and major corporations—want 100-percent renewable energy to meet corporate sustainability goals. Some residential customers want tools to manage and control their energy use.

“The utility needs to show agility, and that's really important in this digital age,” said Berkshire Hathaway Energy Vice President Jonathan Weisgall. Switch, a data-storage company based in Nevada, approached NV Energy to request 100-percent renewable energy to meet its electricity needs. As a result of collaboration and negotiation, Switch was NV Energy's first southern Nevada customer to receive 100-percent renewable energy under the green tariff. NV Energy is holding an open season in May to gauge the appetite of other customers for 100-percent renewable power.

Tendril's Chief Technology Officer Chris Black discussed reimagining demand management with residential customers by using data-based approaches that analyze real-time fluctuations of demand inside a home and make continuous adjustments that focus on the customer's desired outcome. “Next generation demand management is an opportunity to truly delight the customer,” according to Black.



Advanced Microgrid Solutions Founder and CEO Susan Kennedy highlights the role of energy storage in an evolving grid.



Avista Development President Roger Woodworth details how smart grid infrastructure can support smart city initiatives.

Smart Cities

Cities and towns around the world are establishing smart city initiatives—clean energy infrastructure, improved transportation, networked smart street lighting, efficient buildings, and more—as a basis for economic development. As the costs to sense, store, and compute data decline, cities are examining how they can use technology for cross-sector achievements. Most are at a conceptual stage—still determining the central players and users in a smart city initiative, possible uses of data, and the design criteria of the system so that it performs as planned. Energy companies have a central role to play because the smart grid can serve as the platform for a smart city.

In Spokane, WA—Avista is seizing the opportunity to build out the power grid to support the future needs of its electric customers, the City of Spokane, the university, and others by forming partnerships and working with technology companies such as Itron, Cisco, and Bosch.

“Smart cities give us a chance to rethink, refresh, and reimagine the role that we play as an industry in the service to communities to empower people to do great things,” said Avista Development President Roger Woodworth.

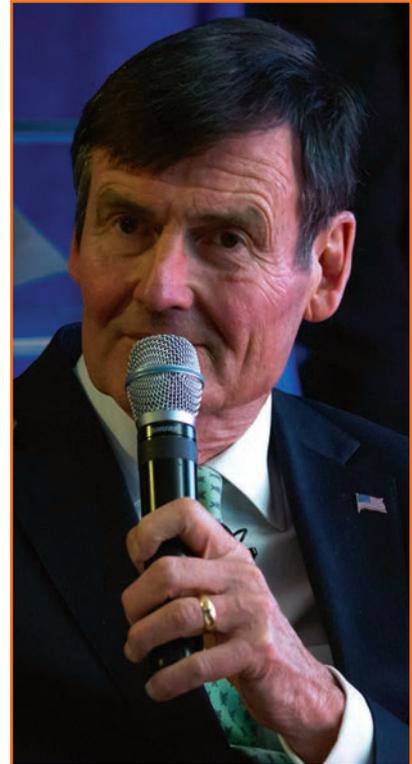
Smart cities represent a different way of thinking for the electric power sector. The notion of adding more things and devices to the power grid is not new, but sharing the power grid with others to achieve their objectives (even some not yet defined) is new, and that is part of the future for the electric power sector.

Building a Future for All Customers

Electricity is essential to our economy and our way of life. Collaboration, progressive public policy, and appropriate regulatory policies will be critical for the successful transformation of the industry—a transformation focused on a clean energy future, more distributed energy resources, greater reliability and resiliency, and more individualized customer services. As customers interact with and think about their energy use in new and innovative ways, electric power companies are excited to partner with them and find new ways to meet their needs. **EP**



Berkshire Hathaway Energy Vice President of Government Relations Jonathan Weisgall (right) and Tendril Chief Technology Officer Chris Black discuss new approaches for customizing energy services.



EEl President Tom Kuhn reflects on how the electric power industry is driving innovation and change.



Essense Partners CEO Mei Shibata discusses survey results on the value of electricity.



Rocky Mountain Power President and CEO Cindy Crane describes her company's Subscriber Solar Program for residential customers.

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