

powering the people

CONNECTED CONVERSATIONS

Providing an Essential Service: The Road Ahead

By Robert Marritz and Lisa Wood

The Institute for Electric Innovation's 5th annual Powering the People event, "Connected Conversations," offered a probing discussion of the nation's most fundamental industry—one in profound transition—the electric power industry. With 25 mini, TED-style talks and no lectern, the conversation among utility leaders, technology company executives, and policymakers was rich, abundant, and connected. The program took off with a keynote from Pacific Gas and Electric Company (PG&E) President Chris Johns and touched down with a lively "Connected Conversations Dialogue" led by Northwestern Energy President and CEO Bob Rowe. Many of the high-flying discussions came in between and during four breakout sessions that ran on two tracks: "Grid Talk" and "All Things Connected." Ideas seemed to fall into the following groupings.

Electricity Is Magic!

This wasn't a topic, but a consensus. We forget how much we depend on electricity. Without it, we can't pump gas or water, and we can't access our money or use our computers. Words like "ubiquitous," "essential," and "necessary" were used frequently in discussions. Both a service and a commodity, electricity comes as a 24/7, worry-free, plug-and-play service that most of us take for granted.



PG&E President Chris Johns delivers the keynote address on the expectations of the 21st-century customer and the evolving Grid of Things™.



IEI Executive Director and Edison Foundation Vice President Lisa Wood welcomes guests to the 5th annual Powering the People event.



EEI President Tom Kuhn reflects on innovation in the electric power sector.



Monica Martinez, principal at Ruben Strategy Group, discusses customers' growing interest in grid reliability and resiliency.



Assistant Secretary of the Navy Dennis McGinn highlights the value of flexible power systems.

Distribution Grid and the Grid Edge

The grid is really two grids: a web of local distribution grids and a bulk transmission grid. The distribution grid is where we're now probing new opportunities and facing new challenges. It's the platform for a diverse set of distributed energy resources such as rooftop solar, electric vehicles, storage, demand response, and energy efficiency—and it fosters increased interaction among utilities and customers, as well as utilities and third parties. The former one-way grid is now becoming a grid network. The Internet of Things has a parallel in The Grid of Things™.

The grid edge, which lies between the distribution utility and the customer, holds opportunities for both. It's where microgrids may make sense—for corporate, academic, and medical campuses; for commercial and residential developments; and for military bases. The grid edge is rich with opportunities for mutually beneficial utility-customer interactions. But it also can pose operational challenges, as California's "duck curve" and Hawaii's experience with massive rooftop solar installations have shown.

Managing the integrated grid platform will require utilities to continue to maintain, upgrade, and modify their distribution systems, to invest confidently in technology, and to maintain close connections and open dialogues with customers. This new business environment relies increasingly on utilities collaborating with and balancing the interests of three key strategic stakeholders: technology companies whose innovative products and services plug into the grid; regulators who define appropriate business models for the grid platform; and customers/communities with specific wants and needs.



Throughout the day, graphic scribes record the discussions.



Arizona Commissioner Bob Stump describes the evolving relationship among utilities, technology companies, and customers.

What Customers Want

As customers, we want it all: the best service and the lowest prices. Maximum flexibility. Maximum choice. Maximum value. Uninterrupted service and affordability. If we cut our usage to benefit the system, we want it to be easy, and we'd like to be compensated. We want solar panels on our rooftops, but we also want reliable electricity even when the sun doesn't shine. Ultimately, we need a better understanding of the system that provides the electricity we want when we want it.

For customers, this is the beginning of a new era of choice and control over energy that's unlike anything we have seen before. People now have access to tools and technology that give them unprecedented visibility and control and allow them to tailor their energy usage to personal needs and wants. The key question for utilities is, how can they help customers unlock value?

The Utility's Role

Utilities today know they need to become "more liquid," as one Powering the People participant put it. They need to be more attuned to the needs of their communities, more customer-focused, and more open to collaborative problem-solving. There's no one single role for an electric utility today because there are many types of utilities: traditionally regulated, vertically integrated companies; wires-and-service companies that also are default electricity suppliers; and wires-and-service-only companies. But all are regulated and share one overriding duty: to provide customers with safe, reliable, affordable, and increasingly clean electricity. Utilities' ability to do that depends on their corporate culture and the effectiveness of regulation to both reward and penalize electric utilities for their performance.

Change is afoot and visions of the future are starting to unfold. For example, Xcel Energy is engaged in a bottom-up voluntary approach to develop a vision for a 21st-century energy system (called the e21 Initiative) by working with a coalition of businesses, state and local governments, regulators, and utilities, as well as environmental and low-income advocates. After listening to customers, peers, and stakeholders, the company moved forward and submitted a "transformational filing" to open a dialogue on rate-making principles with the Minnesota Public Utilities Commission. Xcel Energy then filed a new resource plan that laid out a path to reduce carbon by 40 percent by 2030 with less than 3-percent customer impact over that 15-year period.



Kevin Fitzgerald, executive vice president and general counsel at Pepco Holdings, Inc., highlights new energy technologies, such as rooftop solar and electric vehicles.



Philip Dion, senior vice president, public policy and customer solutions at UNS Energy, facilitates a breakout discussion on how microgrids and diverse resource solutions can meet growing electricity needs.



Itron President and CEO Philip Mezey discusses a dynamic grid with real-time response.



Brad Williams, vice president at Oracle Utilities, explains tying data analytics into real-time systems to optimize the grid.

Regulation 2.0 or Evolving Regulation

The power grid is evolving. Utilities are changing in response to competitive pressures, voluntary efforts, and policy directives. But evolving regulation? Not so much. State regulators are dedicated, hard-working public servants, but the statutes they administer may not give them the tools to induce both efficient and innovative behavior by the industry or its customers.

For example, some of what utilities are asked to do—promote energy efficiency, demand response, and distributed energy resources—may cut against their motivation under the current regulatory structure. These issues are well recognized but are typically addressed piecemeal—such as by decoupling revenues from sales—and not by truly evolving the regulatory paradigm. Even an authority that regulators do possess—for example, to prescribe rate structures that induce better decisions by customers and improve system load factors—rarely has been used. Regulators, often unseen by the general public, are the critical link between the utility and the customer, with the overriding duty to uphold the public interest. It's never been an easy job. Today, it is perhaps the toughest job of all.

The Future

Today's competitive pressures bring both opportunities and challenges. Conversations among utilities, regulators, technology companies, consumers, and other stakeholders in a few states have shown major benefits. This progress has occurred through collaborative processes—not adversarial proceedings. Four words were uttered near the close of Powering the People that could point the way forward: Collaboration. Cooperation. Understanding. Leadership. [EP](#)

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Marvin McDaniel, EVP and CAO at Xcel Energy, elaborates on how electric utilities are embracing technological innovation and customer-centric outcomes with facilitator Bob Rowe, president and CEO at NorthWestern Energy (right).