



Plugged In

Issues impacting the power and utilities industry



Part 1: External forces on utility operating models

In this edition of KPMG LLP's (KPMG) Global Energy Institute's *Plugged In*, we asked Todd Durocher, Kelly Stephenson, and Michael Piotrowski about recent disruptive technology within the power and utilities industry. This three-part issue explores the journey from a national distribution utility to a network integrator. In this first part, we discuss how industry changes continue to impact utility operating models.

1. What do you see as some of the major forces impacting the utility operating model over the next three to five years?

We see utilities experiencing disruption from several forces, including:

- **External investment** – Technology companies, large retailers, and others have partnered to develop distributed renewable energy options both to reduce power costs and to enhance power reliability. Grid-scale storage is emerging as another option for reliability and is receiving investment from the military and from companies invested in energy management, such as building equipment and management companies. As energy is increasingly viewed as a strategic asset, these investments are likely to continue, and utilities will face what are essentially competitive forces.
- **Technology** solutions in this industry have been evolving and are being deployed even more quickly. Renewable energy sources, monitoring and control systems, and energy efficiency devices such as LED lighting are improving at a rapid pace. Batteries are allowing companies to deploy products with greater storage capacity. These rapid changes require utilities to develop standards and governance programs for how the devices connect to the grid.
- **The aging workforce** has been a challenge for years, but technological change now makes it more attractive for younger workers to join the industry. One added benefit is that these workers bring new skill sets that can help drive innovation—they have grown up with technology, so bringing this talent onboard will help utilities better understand, integrate, and deliver new services.

Welcome to KPMG Global Energy Institute's *Plugged In*. Specialists address key issues in the power and utilities sector. *Plugged In* offers insight from KPMG thought leaders on the trends that are driving and shaping power and utility companies today.



Todd Durocher
Principal, Advisory



Kelly Stephenson
Director, Advisory



Michael Piotrowski
Director, Advisory

About the GEI

The KPMG Global Energy Institute (GEI) is a worldwide knowledge-sharing forum on current and emerging industry issues. Launched in 2007, the GEI interacts with its over 30,000 members through multiple media channels, including audio and video Webcasts, publications and white papers, podcasts, events, and quarterly newsletters. To become a member, visit www.kpmgglobalenergyinstitute.com.

- **Greater customer awareness** of energy consumption has driven an increase in customer interest in and demand for energy-related products and services. New services will open up new revenue streams that could help utilities offset the declines in overall energy consumption over the past several years. On top of that, customers have come to expect intuitive, customizable experiences from all of their service providers, and utilities are poised to deliver them.

2. Are changes needed or in process on the regulatory front?

Yes, regulatory action is driving a lot of activity, although jurisdictions are experiencing change at different paces. In some states, regulators are taking a cautious approach to expanding the energy ecosystem, but in many others, they are actively involved in working with investor-owned utilities to transform energy delivery. For example, Renewable Portfolio Standards have been responsible for 60 percent of the growth in renewable energy generation since 2000. The Clean Power Plan is driving changes in coal plants and in utilities’ approaches to their generation mix, encouraging many to integrate more renewable sources. New York’s Reforming the Energy Vision plan is designed to transform utilities into distribution system platform providers, whose main role is to interconnect distributed energy resources (DERs) and manage reliability. The plan also focuses on helping utilities develop new businesses with nonutility partners—a significant shift from the traditional model.

3. How do you see these changes impacting the utility business model?

These changes confirm our view that utilities will evolve into network integrators. While the transformed distribution utilities will continue to perform many of the same functions, they will also need to serve as air traffic controllers, coordinating all of the participants in the value

chain. As network integrators, utilities will be delivering value at different points within the system and customer environments. For example:

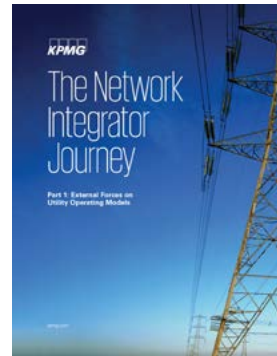
- **System supply** – Utility-scale renewables will become more pervasive, requiring utilities to invest in the processes and infrastructure to monitor supply levels and safely integrate the most efficient load into the grid.
- **Market/Wholesale** – DERs will require utilities to build the models to identify, manage, and dispatch load from other providers, in addition to billing for those services.
- **Customer** – The customer-side interface with the distribution system will become the ultimate driver of strategic investment and the development of operations and infrastructure. Customer requirements not only for electricity but also for the power to engage new products and services will be more predominant. The future utility will shift its thinking from serving ratepayers toward coordinating services for energy customers.

4. Are there some foundational capabilities you suggest utilities start adopting?

Foundational information architecture investments are required to give utilities the capabilities to modernize the grid and handle the growth of distributed generation, storage, microgrids, grid-connected electric vehicles, and other elements. These investments include smart grid communication networks and advanced grid applications, which are driving the pace of evolution toward the emerging value chain. Communication networks are critical for data collection, monitoring and control, and integration with customers, suppliers, and markets. Utilities have been expanding their networks to achieve the breadth, reliability, and latency required for advanced applications that help make sense of the new data. These foundational capabilities require new investment and business cases on which utilities, regulators, and customers must work together during planning.



Expand on Part 1: External forces on utility operating models by viewing this video.



Dive in deeper to Part 1: External forces on utility operating models by viewing this Brochure.

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

© 2016 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved. The KPMG name and logo are registered trademarks or trademarks of KPMG International. NDPPS 573173

kpmg.com/socialmedia

