The Edison Foundation
INSTITUTE for ELECTRIC INNOVATION

IEI National Dialogue

Data Analytics and Access

Key Takeaways
November 2016

IEI National Dialogue Series Meeting – Data Analytics and Access
Key Takeaways

IEI HELD ITS SECOND NATIONAL DIALOGUE SERIES MEETING at CenterPoint Energy in Houston, TX, on September 27, 2016. Roughly two dozen electric and technology company executives met to discuss advancements in using data to better operate the energy grid and to provide services to customers.

The U.S. electric power grid is in the midst of a digital transformation, and data analytics are enabling new technical capabilities and new customer-centric products and services.

The September 27th dialogue focused on three distinct but interrelated topics – using data for customer services; using data for advanced grid management and DER integration; and using data in the grid of the future. Participating industry executives all shared a sense that electric companies must continue to invest in new capabilities and work in close partnership with technology companies, because the potential of advanced data analytics is still largely unrealized.

To realize this potential, electric companies will need to prioritize flexibility to adapt to new technologies. Electric companies also will need to incorporate advanced data analytics to develop insight into customers' needs and wants for the next generation of energy products and services.

Based on the discussion, IEI identified 10 key takeaways and questions for the future, which are summarized below.

Role of Data in Customer Value Creation

- *Using data across the organization as a company-wide asset.* Data is a critical asset, and data analytics is an ongoing driver for value creation – not a "one-off" project. Leveraging all types and sets of data, whether for real time operations, forecasting, long-term analysis, or customer services and call center optimization, requires a flexible

analytics platform. Electric companies are beginning to implement organizational changes to fully integrate analytics across business units.

- *Using data to better understand customers and meet rising expectations.* An integrated analytics platform that overlays customer energy information with demographics and other non-energy information helps electric companies deliver a tailored customer experience that can increase customer satisfaction and loyalty. This means seamlessly offering the right products and services to each customer.

- *Developing a supportive regulatory environment for cloud computing and 'as-a-service' investments.* Developing value from smart grid technologies and delivering customer-centric energy services is increasingly tied to the cloud. Regulators, electric companies, and service providers have begun an important conversation around regulatory treatment of cloud-based vs. on premise solutions. It is important to level the regulatory playing field to stimulate investments – in both hardware and software – that improve customer service, cyber security, and operational efficiencies.

- *Competing for finite resources.* Electric companies are increasingly interested in exploring co-development opportunities with technology providers so that investments in software and analytics return a more immediate, measurable, and positive ROI. Industry investments of all types compete for CFO approval and as technology related spending shifts from basic updates of installed systems to new software and analytics, the ability to show value is critical.

Role of Data in Grid Operations and Management

- *Using data for operations*. Electric companies are investing in systems that rapidly and continuously process data from the field to develop deep situational awareness and enable better operational decisions. Initial uses include predictive maintenance, power quality optimization, and improved storm response. Next steps include utilizing data for grid edge visibility, planning, and network orchestration.

- *Using data analytics at the grid edge.* The intelligence and computing power of grid-connected, networked devices are enabling the development of solutions at the source of the problem. Electric and technology companies are using the right data, at the right time, and at the right location to create value for both the customer and the grid.

- *Maintaining flexibility.* Electric companies need flexible platforms. Flexibility must be imbedded into systems in order to accommodate future use cases, scenarios, and functionalities which may not be readily apparent today. In part, that means investing in open source systems and supporting interoperability standards so that new capabilities can be incorporated in the future.

Role of Data in the Future Grid

- *Creating energy business model platforms.* Electric companies are evolving into resource integrators and network orchestrators. As business model platforms emerge, such as online marketplaces and energy exchanges, getting the rules right is essential. That means creating pricing mechanisms that incent a more efficient system, reward resources for their time and locational attributes, and recognize the value of the grid and the transaction services of the network orchestrator.

- *Using analytics for grid planning.* Integrated Resource Planning is becoming Distribution Resource Planning – it's a whole new ball game that requires real-time analytics and modeling on both the operational and customer sides of the business. Using analytics for predictive DER behavior and for predictive maintenance, like transformer failure and fault detection, are becoming the new normal.

- *Harnessing the pace of innovation.* Technology development continues to outpace regulatory change. Bridging the gap between legacy infrastructure investments and lifespans that are measured in decades with the innovation cycle of 4-6 weeks for new software is becoming increasingly important. Electric companies today must innovate, experiment, and succeed (or fail) quickly. Building flexible systems is critical for success.

Questions for the Future

- How can electric companies continue to leverage data to support the transformation to a value-driven energy services model?
- How do we synchronize the industry with a new technology and software innovation cycle?
- Which emerging business model platforms will be profit leaders?
- In what ways must rate-making change to allow for increased experimentation with data?

Meeting Participants	
Electric Companies	*Technology Companies*
Ameren Corporation	Broadscale Group
American Electric Power	EnergySavvy
CenterPoint Energy	First Fuel
Consolidated Edison	GE Ecomagination
Entergy Corporation	IBM
Georgia Power	Itron
National Grid	Nest Labs
Pacific Gas & Electric Company	Oracle Utilities
Xcel Energy	Powerley
_____	Simple Energy
Edison Electric Institute	Tendril
Institute for Electric Innovation	TROVE Predictive Data Science

Upcoming IEI Dialogue: Clean Energy Future Through Partnerships.

November 10, 2016

IEI's next National Dialogue Series meeting will be held on November 10th in San Francisco, California, and hosted by Pacific Gas & Electric Company. This dialogue will take a deep dive into the details of a clean energy future. Discussion will focus on renewable energy, DERs, storage, and effective partnerships for developing and integrating these resources. This meeting will address how electric and technology companies can work together to achieve a clean energy future.

About the Institute for Electric Innovation

The Institute for Electric Innovation focuses on advancing the adoption and application of new technologies that will strengthen and transform the power grid. IEI's members are the investor-owned electric companies that represent about 70 percent of the U.S. electric power industry. The membership is committed to an affordable, reliable, secure, and clean energy future.

IEI promotes the sharing of information, ideas, and experiences among regulators, policy makers, technology companies, thought leaders, and the electric power industry. IEI also identifies policies that support the business case for the adoption of cost-effective technologies.

IEI is governed by a Management Committee of electric industry Chief Executive Officers. In addition, IEI has a Strategy Committee made up of senior electric industry executives and a select group of technology companies on its Technology Partner Roundtable.

About the Edison Foundation

The Edison Foundation is a 501(c)(3) charitable organization dedicated to bringing the benefits of electricity to families, businesses, and industries worldwide. Furthering Thomas Alva Edison's spirit of invention, the Foundation works to encourage a greater understanding of the production, delivery, and use of electric power to foster economic progress; to ensure a safe and clean environment; and to improve the quality of life for all people. The Edison Foundation provides knowledge, insight, and leadership to achieve its goals through research, conferences, grants, and other outreach activities.

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