Thought Leaders Speak Out 2025

ENGAGING CUSTOMERS WITH TECHNOLOGY

Key Takeaways: Leveraging Data Insights to Enhance Resiliency Planning

A Fireside Chat with Oncor and IBM
(February 2025)

The Institute for Electric Innovation's ***Thought Leaders Speak Out 2025: Engaging Customers with Technology*** series brings together electric companies to share lessons learned and the results of successful use cases of technology to advance customer and grid solutions.

In February, the Institute for Electric Innovation (IEI) invited Oncor and IBM to discuss how Oncor and IBM are partnering to leverage technology and data insights to build and operate resilient grids against extreme weather and other threats. The dialogue featured a discussion with Oncor Director, Asset Management and Engineering Support, Robel Lulseged and IBM Consulting VP, Senior Partner, and Energy Leader, Caroline Roche, IBM VP and Senior Partner Christopher Behme. Adam Cooper of IEI provided welcome remarks, and Dave Hutchens, President and CEO of Fortis, Inc. moderated the discussion. Key takeaways are summarized and highlighted below.

Data-driven approach for comprehensive and cost-effective resiliency planning

"The single most important topic that we have in our sector today and on a going forward basis is resiliency."
- Dave Hutchens, President and CEO of Fortis, Inc.

- In response to increasing frequency of extreme weather events, Oncor developed its first comprehensive System Resiliency Plan (SRP), which was approved by the Public Utility Commission of Texas in November 2024. The plan outlines a $3 billion investment over the next 3 to 4 years, aimed at strengthening the grid resilience across Oncor's service area against extreme weather and other threats.

"Several extreme weather events have impacted the state of Texas in recent years, with notable events including winter storm Uri in February of 2021 and hurricane Beryl in the summer of 2024. These events have brought the need for power grid resiliency to the forefront of the public, regulators and other stakeholders across the state."
- Robel Lulseged, Director, Asset Management and Engineering Support, Oncor

- Oncor is partnering with IBM to take a data-driven approach for developing comprehensive and cost-effective system resiliency strategies.

    - By analyzing historical weather data and system performance during extreme weather events, Oncor identified that 70% of customer outages are linked to wind-related issues affecting the overhead grid. This insight informed their resiliency strategy, with a significant portion of investments aimed at hardening the grid, deploying smart devices, and improving self-healing capabilities to better mitigate outages.

    - Oncor created its own wildfire risk model, leveraging data from the Texas Forest Service and the U.S. Forest Service. This model analyzed key factors such as burn probability, historical weather patterns, and vegetation fuel types to pinpoint vulnerable areas, enabling Oncor to implement more targeted and effective wildfire mitigation strategies. As part of its SRP, Oncor is greatly enhancing its risk modeling and situational awareness capabilities to further support mitigation efforts.

- Oncor has developed specific metrics to quantify the customer benefits of its resiliency investments. Oncor has identified key areas for targeted investment by analyzing granular system performance at the feeder and circuit levels, combined with historical system performance and weather data.

    - These metrics allow Oncor to demonstrate tangible improvements in system resiliency with customer-centric performance indicators in addition to traditional metrics such as customer interruption, outage frequency, and restoration costs, providing insight into the long-term impact of investments.

- Oncor and IBM have partnered to strengthen cybersecurity in response to evolving threats from new technology and digitization. They conduct periodic Cyber Range exercises, allowing participants to immerse themselves in a live cyberattack scenario, from threat detection to remediation. IBM emphasizes that cybersecurity is everyone's responsibility and underscores the importance of integrating cybersecurity into all business processes.

Building a foundational data layer to support future innovations and use cases

"Many of us are seeing a huge increase in technology modernization. One of the drivers that I'm seeing across the industry is a need to centralize data more so that it can be more actionable."
- Caroline Roche, VP, Senior Partner, and Energy Leader, IBM Consulting

- IBM highlighted the critical importance of centralizing data to drive actionable insights in technology modernization. Advances in AI, cloud technology, and predictive modeling are bringing electric companies closer to gaining valuable foresight into future risk scenarios, such as damage from fires, hurricanes, wind, and ice, enabling a more proactive approach to enhancing system resiliency.

- Oncor is focused on structuring and curating its data to drive innovation and make it accessible across the organization. Oncor is already capturing vast amounts of data from 4 million smart meters, outage management systems, and communication devices. Oncor is making further investments in engineering-grade aerial surveys (LiDAR) and other remotely sensed imagery across its transmission and distribution systems, generating more valuable data. Oncor aims to ensure that this data is not only used for single purposes but is organized in a way that supports future innovation and diverse use cases.

"One of the big focuses that that we have is around how do we structure the data to make sure that we're making it available across the organization. And we're curating it in a way that it's enabling the innovation that we are expecting to see coming forward." - Robel Lulseged, Director, Asset Management and Engineering Support, Oncor

- IBM is supporting Oncor in integrating data into its work and asset management system to enhance prediction capabilities. Additionally, they are collaborating to streamline the construction process, enabling faster and more efficient grid connections to meet the unprecedented demand growth in Texas.

- IBM highlighted the next phase of grid modernization, where electric companies are moving beyond the initial deployment of standalone smart meters and sensors. The focus is now on integrating disparate data systems. This evolution unlocks the potential for increased automation for operational efficiency, such as using drone data to autonomously assess and validate issues, generate work orders, and eliminate manual reviews.

- IBM highlights a key industry shift from relying on multiple single-point solutions to adopting more integrated, end-to-end platforms that enhance data use and integration. IBM emphasizes the importance of selecting comprehensive technology suites, which not only streamline data management but also support future roadmaps for AI and automation.