

Thought Leaders Speak Out 2023

ENGAGING CUSTOMERS WITH TECHNOLOGY

Key Takeaways: Data-Driven Storm Response for Reliable & Resilient Grid

Fireside Chat with PPL Electric Utilities and E Source (August 2023)

The Institute for Electric Innovation's *Thought Leaders Speak Out 2023: Engaging Customers with Technology* series brings together electric company executives with customer responsibilities to share lessons learned and the results of successful customer engagement strategies.

This dialogue focused on integrating AI and data-driven decision-making approach for storm response and grid investments and featured a discussion between Sal Salet of PPL Electric Utilities and Tom Martin of E Source. Adam Cooper of IEI provided welcome and closing remarks, and Dave Hutchens of Fortis Inc. moderated the discussion. Key takeaways are summarized and highlighted below.

[Click Here for the Agenda and Speaker Bios](#)

[Watch Fortis' Opening Remarks Here](#)

Leveraging AI and machine learning to optimize grid investment and storm response decision-making.

 [Video Clip Here](#)

PPL describes its digital grid journey that started 10 years ago. PPL reduced their spending on vegetation management by 30% while simultaneously improving their return on investment by over 200% by adopting a data-decision making approach to determine when and where to make grid investments.

 [Video Clip Here](#)

PPL has seen increasing numbers of storms in recent years, which is costing the company 30-40% of operation and maintenance (O&M) cost (combined with vegetation management 60-70% of the O&M cost). Better data enables PPL to be more surgical about storm response to reduce cost while improving grid reliability.

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E Source describes building a “Lighthouse of Stability” by building a digital replica of a grid system layering multiple data sets (e.g. weather, geography, outage, and asset data). This enables PPL to gain more accurate, granular prediction and actionable insights to navigate storm response decision making.

 [Video Clip Here](#)

With the support of AI analytics, PPL was able to reduce storm response costs by nearly 25% and restoration time beyond its target of restoring 95% of customers in 24 hours. In this clip, PPL details the types of insights the AI model can offer five days in advance of a storm to optimize resource allocation, including when and where the storm will occur and staffing needs. The AI model is continuously improving its prediction accuracy as it receives new data, allowing for better decision making.

 [Video Clip Here](#)

PPL explains more accurate storm prediction allows PPL to develop staffing plans to optimize crew dispatch to avoid idle time and provide workers rest. This results in improved relationships with response crews and improved worker safety.

 [Video Clip Here](#)

Leveraging AI and machine learning, the model can predict outages and downtime and recommend storm response, based on the forecasted weather, precipitation, soil conditions, and more. E Source elaborates on the benefits of AI models built on holistic data sets and how AI models can offer a granular prediction of what types of failure are likely to occur with specific storm types.

Building data capabilities to accelerate and expand predictive AI applications.

 [Video Clip Here](#)

E Source describes it takes six months on average to integrate an AI solution from scratch, but once all the data is aggregated and analyzed, the model is highly versatile and can be used for many different application areas. Adopting an organizational-wide data-driven mindset, and including it in the process, provides the best actionable insights.

 [Video Clip Here](#)

PPL emphasizes the importance of building a data-driven organizational culture and decision-making approach. PPL considers data analytics experience during the engineering hiring process to build data capabilities within the organization.

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PPL details what is next on PPL's digital grid journey to enhance safety and reliability while reducing operational costs. PPL is continuing to build asset data to allow condition-based maintenance vs. periodic maintenance, implement sensor and satellite image-based vegetation management to reduce human error, and AI models to improve worker safety by predicting injuries and assessing high-risk tasks.

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E Source shares its view on the Big Five beneficial use cases of AI – vegetation, wildfire, storm management, capital optimization, and O&M reduction. E Source predicts the next big use case for AI is to assess the grid impact of behind-the-meter assets to ensure grid reliability as more distributed energy resources are introduced to the grid. E source highlights the fact that the industry needs to change the current way of managing the grid based on customer impact, for example, residential customers charging EVs overnight. Weaving in the customer impact will be critical.