

Panel Discussion at Quadrennial Energy Review
Second Installment
Electric Distribution and End Use: How Do We Manage Challenges and Opportunities?
Stakeholder Meeting #2: Austin Tx.
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Meeting ever-increasing customer expectations around service quality, costs, customer-communications, reliability, resiliency and customer choice is a challenge that Oncor is addressing. This is occurring in a period of a technological renaissance with customer equipment, utility equipment, communication systems, and data analytics.

To address this, Oncor has invested in several foundational areas. Automation systems and SCADA once reserved for the transmission system are being deployed throughout the distribution system. An Advance Meter System (AMS) is fully deployed providing 15 minute interval data and allowing us to make on-demand-meter-reads and remotely disconnect meters to support the vibrant deregulated electric market in Oncor's footprint. Distribution SCADA and an Outage Management System is fully deployed and is integrated with the meter outage signals from the AMS. Because of this integration, presently 27% of non-feeder outages are restored without ever receiving a customer call.

Oncor continues to improve customer communications with our customers in the manner that the customer chooses. In addition to the voice communications, social media, email, and text messaging has been added to the mix, and this communication is tailored to the customer's needs and desires. One of our primary goals at this point is improving Oncor's customer communication around an outage event. Oncor plans to proactively tell the customer when they are outaged, provide them an accurate estimated time of restoration, and notify them when service has been restored.

Challenges and opportunities exist in the following areas:

1. **Balancing customer expectations for cost and for customer service (including service reliability).** Oncor's goal is to be in the top quartile in comparison to our peers on costs and on reliability as measure with SAIDI metrics and to be a trusted advisor to our customers. Oncor's disciplined asset management process and customer-communication focused initiatives enables Oncor to do this; however as customer expectations increase, this balance is becoming more difficult to achieve.
2. **Leveraging the information available to us through expanded analytics.** Present programs include theft detection and predicting failures of distribution transformers and service connections prior to them causing customer outages. Programs under development include predicting zonal outages and facility damage based on weather forecast, predicting underground cable failures, and developing tools to validated and correct connectively model

errors in the distribution grid mapping systems. Over time, this area will continue to grow and develop.

3. **Leveraging all of the benefits of battery storage.** Storage solutions are best justified and will be more quickly deployed when multiple benefits can be realized. Distributed storage (i.e. on the distribution network) would provide higher order customer reliability as well fulfilling other system and market needs. Present law and market rules in ERCOT do not facilitate this.
4. **Allowing maximum customer choice concerning distributed generation while maintaining a safe and reliable grid.** While penetrations of distributed renewable generation in ERCOT is lower than some other grids, preparation should be done to address ways to safely modify and operate the grid so that customers will have minimum restrictions as to what they do behind the meter.
5. **Ensuring that standards do not become an impediment to progress.** While standards are good and necessary, care should be taken to ensure that they do not significantly hinder technology development. Significant technological advancement almost always creates a De facto standard that gets adopted, not visa-versa.
6. **Ensuring reasonable synchronization between market/rate structure and technology developments for grid and cost optimization.** The Texas legislature, the Public Utility Commission, and the ERCOT market process operate very well, especially in times of minimum technological change. As different technologies and systems evolve, it is imperative that all of these groups evolve in their thinking at the same time. Ensuring that the competitive market continues to be robust and adapts to new technologies without picking winner and losers and without unfairly burdening some customers is challenging.
7. **Ensuring adequate security will continue to be challenging.** Both physical and cyber security threats are expected to continue, especially as automation and communication systems develop and expand.
8. **Preparing an adequately trained and developed workforce requires shifts in recruiting and employee development strategies.** As technology continues to expand, the workforce requirements are challenging and require partnering with outside educational institutions, altering employee recruiting criteria, and focusing on developmental and change-management programs for existing employees.