

What California and Texas Have in Common

Lack of a Coherent Microgrid Strategy

By Guidehouse's Peter Asmus



As climate change drives more extreme weather events, including the recent massive power outages in Texas due to an unprecedented cold snap, the need for greater grid resilience is clearly growing. Whether extreme cold or heat (or wildfires), this is the new normal.

Even as the economy, including transportation, becomes increasingly electrified, the performance of our nation's power grid continues to decline in reliability due to aging and outdated infrastructure.

Although California's utilities have developed some temporary fixes to the wildfire threat – Public Safety Power Shutoffs (PSPS) – longer-term solutions are clearly needed. Relying upon traditional diesel backup generators is a temporary stopgap measure for some critical facilities, yet they do not represent a viable solution over the long-term.

There has got to be a better way. It is time to boldly step into the future with more sustainable solutions that offer much greater value to ratepayers, utilities, and the environment. In short, we need microgrids, and we need them now.

What is a microgrid? It is what it sounds like, a small grid. Its defining feature is the ability to create an island of power when the larger grid that surrounds it goes down.

The biggest question mark in California, Texas, and the rest of the U.S., revolves around determining the best role for utilities with microgrids during this fundamental shift rippling through energy markets.

What lessons learned to date can shape future utilities' strategies addressing key carbon reduction goals now being embraced by the Biden administration? The following three themes should guide utilities, their regulators, and other stakeholders, when it comes to microgrids.

Microgrids Financed Via Energy As A Service

Due to their DNA, utilities still tend to focus on rate-basing opportunities for microgrids. Although several utilities in the U.S. have successfully rate-based microgrids, with San Diego Gas & Electric's Borrego Springs microgrid being the first successful deployment, many have also faced regulators' barriers, including Baltimore Gas & Electric, PECO Energy, Pepco, and ComEd.

Both BG&E and Pepco had proposals for rate-basing microgrids rejected by the Maryland Public Service Commission due to the challenges of demonstrating benefits beyond the microgrid boundaries that extend to an entire utility service territory.

Though public funding is one option, a more cost effective approach is to allow for private energy as a service (EaaS) financing and third-party solution providers to focus on segments not typically eligible for state government support programs now available in approximately twenty states, concentrated primarily on the East Coast.

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EaaS offers the customer cleaner and more resilient electricity services with no upfront capital. The solution provider takes on the risk of project performance. It is this business model that drove past growth in rooftop solar photovoltaic (PV) systems at residential properties.

Utilities are already in the EaaS business. In fact, rate-basing could be considered a form of EaaS. In the context of microgrids today, however, EaaS offers from non-utility private sector innovators look to leverage

the appeal of a no upfront money offer and outsourcing of maintenance to outside experts.

Remove Regulatory Barriers to Microgrids

Existing regulations limit both behind-the-meter and front-of-the-meter solutions. Utilities should collaborate with viable vendors to improve the regulatory environment with an all the above strategy and not get bogged down by complex proceedings like those that delayed progress in California in 2020.

While Texas has a fleet of microgrids financed with a form of EaaS serving grocery stores and large gas stations, the capacity of these systems is just a drop in the bucket and do not include renewable energy resources, though they are called upon to help keep the larger grid in balance when variable wind power drops off suddenly.

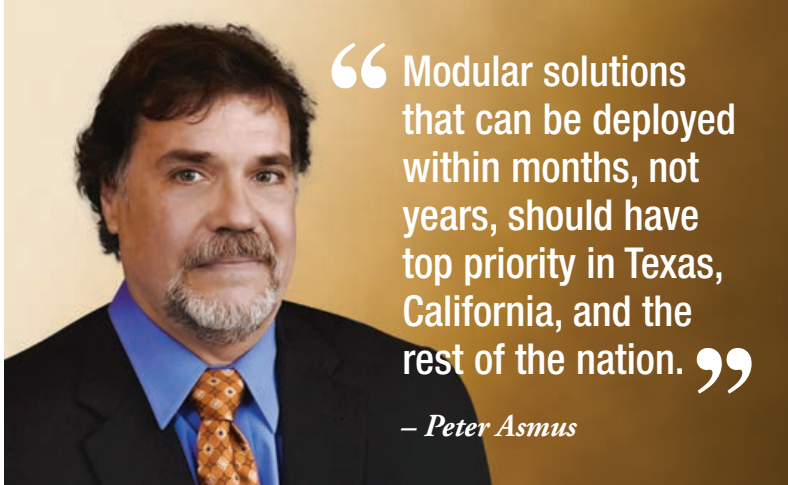
The end goal for utilities and their regulators is to make it

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California and Texas

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faster and simpler to bring microgrid solutions to the market, including rate-based direct utility deployments over the long-term. Although Puerto Rico recently rejected proposals made to divide the island's entire grid network into self-sustaining microgrids, the concept could make sense in California, even though such an endeavor would take years to complete.



In the near-term, however, the focus should be on marshalling private capital to reduce upfront costs for consumers/prosumers and harness the creativity of the private sector. Utilities that help remove regulatory barriers for all microgrids build goodwill and will be better positioned to create win-win scenarios, finding new friends within the broader microgrid ecosystem.

Strategic Utilities/Private Sector Partnerships Are Key

Utilities should align with proven companies that provide the most important technology for commercial success: the critical controls that make microgrids work. They also should go to market with strategic partners to develop sustainable and resilient microgrid solutions.

Utilities know their networks and have their own toolkits to address reliability and resiliency, yet most lack the latest digital platforms required to perform seamless islanding during power outages and the platforms that can squeeze the most value out of the full range of distributed energy resource

(DER) assets, including electric vehicles, rooftop solar PV, and advanced batteries.

This dilemma underscores why partners are critical for utilities to modernize their grid networks. Creative partnerships with experienced vendors with healthy balance sheets enable utilities to leverage non-utility partners that can access government incentives. If these control vendors can offer financing in the form of energy as a service, a compelling value proposition emerges.

Can California and Texas Show the Way?

Many states beyond California and Texas have been impacted by major power outages. Modular solutions that can be deployed within months, not years, should have top priority in Texas, California, and the rest of the nation.

Larger utility systems can be layered on top later. Utilities can still play vital roles in this new energy landscape if they move now and forge partnerships with private sector innovators and their customers offering new modular microgrids under EaaS business models.

A case in point is Green Struxure, a new entity and joint venture between Schneider Electric and Huck Capital. The company targets medium-sized commercial and industrial

customers that need resiliency but don't want to necessarily use their own capital to finance microgrids.

Imagine the potential synergy if California or Texas utilities partner to identify the best sites for microgrids, which would also bolster the utilities' distribution network. Under an EaaS model, such partnerships can maximize government incentives to support projects while leveraging each other's strengths.

Utilities manage existing distribution networks and have critical long-standing relationships with customers. Solution providers, including Green Struxure, have the technologies and financing to make projects happen quicker without worries about bankruptcies or technology failures.

The list of companies now offering EaaS microgrids is growing rapidly. The primary innovation occurring today in the microgrid space is in financing, a clear sign that the suite of technologies that comprise a microgrid are now moving into the mainstream. Will utilities seize this opportunity – or will they, again, lag behind? **PUF**

Excerpt from the new book by PUF's Steve Mitnick, which will be published later this month, "Women Leading Utilities, the Pioneers and Path to Today and Tomorrow." The disparity in master's degrees, between men and women, is especially marked. About five hundred and six thousand women are earning their master's degrees each and every year. While about three hundred and twenty-seven thousand men are earning their master's degrees per year. That comes to three women getting their master's degrees for every two men doing so. The impact on workplace culture and roles is inevitable.