



Bring power resilience with Microgrids

In addition to the many challenges facing municipality facilities, many counties are tackling sophisticated energy and sustainability issues which can cause great disruptions. With the intrusive planned and unplanned power interruptions due to severe weather storms and other natural disasters over the past few years and continuing into 2021, counties across the nation are experiencing first-hand that reliance on the traditional energy grid will no longer suffice, especially as power disruptions to communities become more commonplace. These large-scale blackouts left many counties looking for a solution for future disruption, raising questions about how operations can safely and reliably continue when the utilities turn the power off.

In a compounding complication – made even more pronounced by the impact of the global pandemic – counties are looking to not only build reliable and affordable avenues to ensure energy continuity, but they must also do so with impending budget cuts and competing priorities in the new municipality landscape.

Luckily, many counties have already taken the necessary first steps along the path to critical energy infrastructure by making efficient, interconnected upgrades and implementing more advanced efficiency measures like onsite solar arrays. Some of the counties that installed solar panels maximized the investment with battery storage, which

helped boost sustainability and reduced energy spend by offsetting peak demand charges. The measures were successful in finding operational and efficiency savings and laying the groundwork for resilience, but most of these solar installations were not designed to keep the power on when disruptions occur to the utility service due to a planned outage or severe weather.

Counties seeking true energy resilience can leverage their previous investment in onsite solar and battery energy storage systems even further by connecting technologies with a microgrid.

What is a microgrid?

To many, microgrids sound like a complicated and expensive technology of the future. But when you break down the elements of a microgrid, you see that it's not all that different from the onsite energy sources we're using today. A microgrid brings together local, onsite distributed energy resources (DERs) to work as a single system, enabling counties to function as their own mini- versions of the grid.

Put simply, microgrids make solar smarter. Even with battery storage, solar power lacks the sophistication to achieve the resiliency benefits of a microgrid. Solar power relies on services that the bigger energy grid provides. If the grid goes down, solar power goes down too. Paired with solar arrays, a microgrid acts

as the brain behind your energy infrastructure. By linking energy technologies, including solar, software-enabled and data-driven equipment, and battery storage, microgrids help counties take back control of their energy strategy and unlock the full power of their energy resources.

With the resilience, flexibility and control gained by a microgrid, counties can:

- Sustain power during a grid outage (keep the lights on when others cannot)
- Use their own on site power during times when energy rates are highest (save money)
- Sell power to the grid when its most advantageous, potentially creating a new revenue stream (make money)
- Counties that have microgrids do not need to cut ties with the traditional energy grid entirely. Microgrids can be grid-tied, grid-independent, or capable of both, meaning counties can design a system that works for their unique needs. Some microgrids can be “islanded,” allowing them to function on a limited basis as backup when the grid goes down.

Microgrids help counties bridge the gap between relying solely on the centralized, often - unreliable energy grid to efficiently transitioning to a cleaner, more resilient power supply.

Because they rely on local and decentralized resources, microgrids can often withstand weather conditions and power disruptions that centralized grids cannot.

Don't wait for the next outage

Resilient infrastructure isn't just for large corporations or federal installations. It is a scalable, customizable solution for counties large and small as they update aging facilities and prepare for future demands on growth and technology. Many counties have already begun laying the groundwork for resiliency. The next step is to tie it together with an interconnected system.

In addition, the savings captured by implementing resilience projects can help offset costs and derive more value from previous efficiency measures, creating potential reinvestment opportunities or revenue streams. It is estimated that power outages could cost a county millions of dollars. Counties have multiple options to fund and operate resilience projects, such as performance contracting or Energy as a Service.

With sustainability and healthier buildings being a key focus of modernization projects for the foreseeable future, a resiliency initiative could provide both a funding and project delivery vehicle and deliver mission- critical outcomes.