Microgrids are stand-alone power generating, distribution and storage systems that can be operated independently or connected to the primary utility grid. They provide a reliable, efficient solution to unexpected power loss by effectively balancing variations in energy demand, optimizing energy usage for more reliable power, reducing operating costs and carbon emissions.

Rethinking power in a post-Sandy world
In 2012, Superstorm Sandy left 7.6 million customers and people across 15 states estranged for days, even weeks, without power. A few of the storm’s many legacies are new regulations, building codes and strategic, long-term planning focused on improving the ways public and private energy systems work.

Ensuring energy security, as well as surety
With the rise of smart grid technology and the industrial internet, utilities will soon be unexpectedly vulnerable to cyber attack as any computer network. In fact, according to the Brookings Institute, a recent congressional survey of the industry revealed that many utility operators being subject to daily, frequent or constant cyber attacks.12

Generating revenue along with power
One of the benefits of microgrid energy systems is that their owners are able to effectively manage their on-site generation assets to meet short-term needs, and if needed can then sell it back to the electric grid to reduce demand charges. That means microgrids can enable additional sources of revenue.

Resiliency is quickly becoming a must
Across the country, numerous public-interest initiatives—along with increasing regulations—are requiring utilities to ensure that critical facilities and infrastructure are available and functional both during and after disturbances.

Renewables are becoming the standard
California recently increased its historic 33% by 2020 renewable portfolio standard policy to require that utilities obtain 60% of their electricity from renewables by 2030.13 Microgrids incorporate renewable energy sources with effective energy storage technology to compensate for the intermittent nature of renewables and help achieve clean energy goals.

Proven to handle some serious megawattage
In one of the first utility-scale microgrid demonstration projects in the U.S., Eaton helped PG&E, as part of U.S. Department of Energy research effort, build a 5-megawatt lithium-ion battery and inverter system capable of storing 1.25 megawatt-hours of energy.

Modularity and scalability are key
To build more flexible and cost-effective energy systems, it’s critical to implement a modular, scalable approach, which is an integral part of Eaton’s Power Xpert Energy Optimizer™ controller. This allows Microgrid operators to integrate utility rates and store assets today while planning for new assets tomorrow—and being able to adapt to changing needs over time.

Optimizing microgrids for over a decade
With one of the largest and most experienced teams of power system engineers, field technicians and customer support engineers in the industry, Eaton has been able to leverage proven systems to deploy microgrid projects with many customers, including utilities and the U.S. Department of Defense.

Find out how Eaton’s modular and scalable approach to microgrid energy systems helps customers deploy stand-alone power systems to ensure safe, reliable and efficient power management. Learn more at Eaton.com/microgrid

A macro view of why MICROGRIDS MATTER

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