

A macro view of why MICROGRIDS MATTER

1 What are microgrids?

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 effectively balancing variations in energy demand, optimizing energy usage for more reliable power, reducing operating costs and carbon emissions.



2 Rethinking power in a post-Sandy World

In 2012, Superstorm Sandy left 7.9 million businesses and people across 15 states stranded for days, even weeks, without power.¹ 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.

3 Keeping up with grid modernization

When you consider the new digital economy, population growth and the rise of cities, it's no surprise that over the past two decades, electrical demand has increased. Yet the power grid has been slow to keep up. Universities, hospitals, corporations and local communities are considering microgrids as a way increase power reliability to meet their critical demand.

4 Ensuring energy security, as well as surety

With the rise of smart grid technology and the industrial internet, utilities will soon be as potentially susceptible to cyber attack as any computer network. In fact, according to the Brookings Institute, "a recent congressional survey of the industry revealed that many utilities report being 'subject to daily, frequent or constant cyber attacks.'"²

5 Resiliency is quickly becoming a must

Across the country, numerous publicly-funded initiatives—along with increasing regulation—are focusing on improving resiliency to ensure that critical facilities and infrastructure are available and functional both during and after disturbances.³

6 Generating revenue along with power

One of the benefits of microgrid energy systems is that their owners are able to effectively manage their onsite generation assets to meet their needs, and if needed can then sell it back to the utility or use it to reduce demand charges. That means microgrids can enable additional sources of revenue.

7 Renewables are becoming the standard

California recently increased its historic 33% by 2020 renewable portfolio standard policy to require that utilities obtain 50% of their electricity from renewables by 2030.⁴ Microgrids incorporate renewable energy sources with effective energy storage technology to compensate for the intermittent nature of renewables and help achieve clean energy goals.



8 Proven to handle some serious mega-wattage

In one of the first utility-scale microgrid demonstration projects in the U.S., Eaton helped PGE, as part of a 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.

9 Modularity and scalability are key

To build more flexible and cost-effective energy system, 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 existing generating assets today while planning for new assets tomorrow—and being able to adapt to changing needs over time.

10 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 technology 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

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1. <http://www.cnn.com/2013/07/13/world/americas/hurricane-sandy-fast-facts/>
2. <http://www.brookings.edu/research/reports/2013/11/06-electricity-revolution-ebinger-banks>
3. <https://toolkit.climate.gov/content/funding-opportunities>
4. http://www.pv-magazine.com/news/ktetalls/beltrng/california-governor-brown-signs-50-renewable-portfolio-standard-into-law_100021447/-axzz40d0TUVvN