Energy Resiliency: what needs to be considered

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ABSTRACT

There is a shift happening in how a building's energy supply must be handled to improve the resilience of the organization or business operating there. Having energy resiliency means the organization is able to adjust easily to or recover from change or misfortune affecting its energy supply and cost. Instead of treating energy as a commodity, it must be considered as a service to the organization that enables their operation, and the revenue and social services that follow.

On-site power systems, including combined heat and power (CHP) and solar or other renewables, do add a significant level of resilience to a building. It is important to understand how they do this, and how they each do it differently, so that the right systems are selected based on the organization's tolerance of energy risk. Resilience to utility grid outages, electric capacity constraints, energy rate increases, and changing regulation are discussed. Examples of how each of these risks may be mitigated by different types of CHP (black-start capable or grid-tied) and different types of solar power systems (behind the building meter, adjacent to building, remote net metered, and/or with battery storage) are reviewed. A comparison of the resiliency level of a backup generator and a CHP system is also presented. Improving a building's energy resilience can be implemented with today's proven technology, and today is the right time to address energy risk.

BIOGRAPHY

Lauren Ray is Business Development Manager in NY State for GEM Energy, which provides on-site power solutions including CHP and Solar. Lauren has 5 years of experience integrating CHP systems for healthcare, educational, industrial, mission critical, and other types of facilities. In addition to CHP, Lauren collaborates on GEM Energy's Solar PV projects for commercial and industrial customers in NY. Lauren's past professional experience is in alternative energy system research and development, including hybrid electric vehicles and energy smart homes. She has a master of science from Georgia Tech and a bachelor of science from Cornell University, both in mechanical engineering.