

SolarTech Power Solutions

Energy storage can improve the emergency response capability of the power grid



Overview

Mobile energy storage systems, classified as truck-mounted or towable battery storage systems, have recently been considered to enhance distribution grid resilience by providing localized support to critical loads during an outage. Can mobile energy storage improve power grid resilience?

As mobile energy storage is often coupled with mobile emergency generators or electric buses, those technologies are also considered in the review. Allocation of these resources for power grid resilience enhancement requires modeling of both the transportation system constraints and the power grid operational constraints.

How can active energy storage systems benefit a campus microgrid?

Another means of leveraging the value of active energy storage systems is to integrate them with other onsite power systems. The integration of batteries with a combined heat and power system, for instance, has the potential to create a safe, resilient, and efficient energy campus microgrid.

Why is it important to increase power grid resilience?

In the face of natural disasters that are exacerbated by climate change, it has become increasingly important to increase power grid resilience. More resilient power systems can better prepare for, withstand, and recover from disasters, avoiding the social and economic costs of a power outage.

How does mobile energy storage improve distribution system resilience?

Mobile energy storage increases distribution system resilience by mitigating outages that would likely follow a severe weather event or a natural disaster. This decreases the amount of customer demand that is not met during the outage and shortens the duration of the outage for supported customers.

Why is mobile energy storage better than stationary energy storage?

The primary advantage that mobile energy storage offers over stationary

energy storage is flexibility. MESSs can be re-located to respond to changing grid conditions, serving different applications as the needs of the power system evolve.

Should energy storage be a 'must-have' for disaster recovery?

Energy storage has traditionally been viewed as an expensive “must-have” for disaster recovery efforts. While recent events support the importance of grid modernization through energy storage systems—the idea that these systems could be used to generate revenue streams and reduce operating costs is a newer concept.

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