



LANGDON MILLS SOLAR

Battery Energy Storage System Basics

What is energy storage?

Energy storage is the capture of energy produced and stored for use at a later time to reduce imbalances between energy production and energy demand. Battery Energy Storage Systems, or BESS, are a form of energy storage.

What type of battery is commonly used for energy storage?

Although there are different kinds of battery chemistries, lithium-ion batteries (similar to the ones in phones and laptops) have been the most commonly used technology for both residential and utility applications in the United States because they offer the best combination of price, operational characteristics, reliability, and safety.

What is the value of large battery storage?

The electric grid functions by constantly matching supply and demand for electricity. Demand for power fluctuates, which means the grid requires significant flexibility to manage those fluctuations. Adding batteries to the electric grid provides flexibility, offering energy and capacity at times when generation is not otherwise available.

- **BOLSTER GRID RESILIENCE**

Batteries can help shorten customer outage time and provide backup power during grid outages. They can also deploy power during times of high electricity demand, which can happen during periods of high temperatures. Batteries can also help support the grid during unpredictable weather patterns where energy sources such as wind or solar may have shortened windows to generate clean, renewable energy – i.e., cloudy weather, calm winds, snowstorms, shortened days, etc.

- **PROVIDE GRID STABILITY**

Energy storage can create better load management and less frequent interruptions to the power supply. Distributed grid-scale storage at critical transmission "intersections" can help avoid disruptions by stabilizing capacity on a large scale.

- **SUPPORT GRID SUSTAINABILITY**

When paired with renewables, which have variable production, batteries can help allow for more renewables on the grid by allowing power to be used at different times than energy production.

Enclosures

The purpose of a battery enclosure is to protect batteries from the elements, including heating, cooling, and other weather events, and to ensure that in the unlikely event of failure, damage to the system is contained. Containerized battery storage units are generally sealed, automated, and constantly monitored.

Noise

The noise emitted from utility batteries is no louder than most electrical transformers, and battery projects are designed to comply with applicable sound limits. Batteries themselves emit no noise; the ambient noise comes from cooling or heating systems