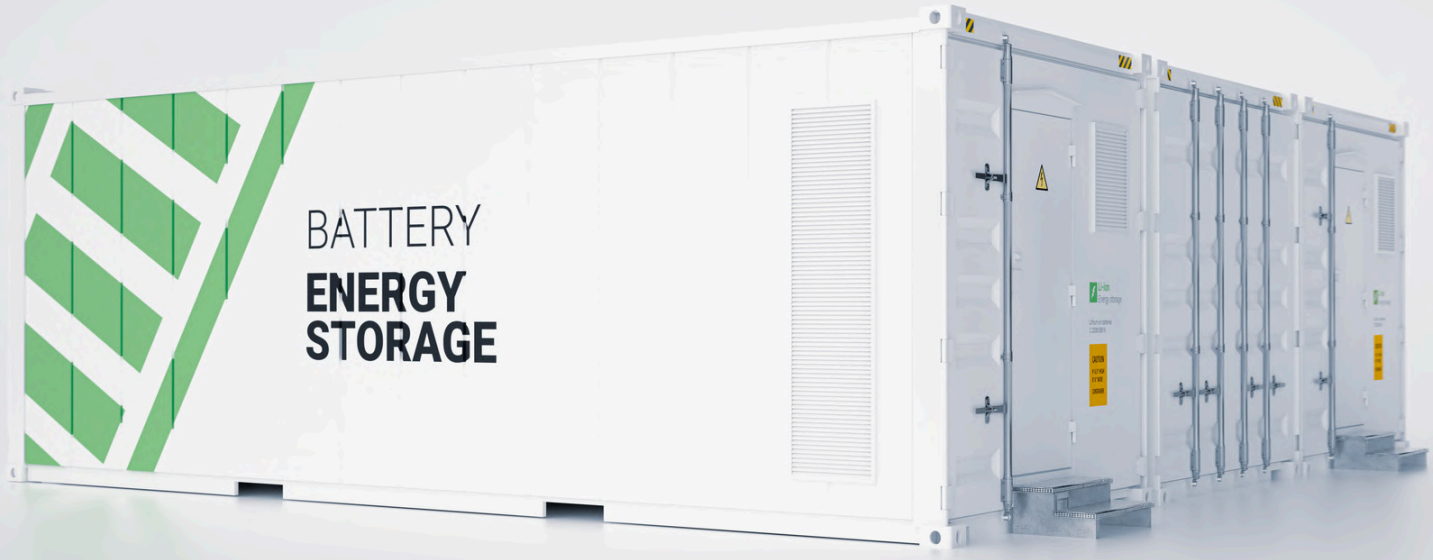
CarsonPower

# Battery Energy Storage Systems (BESS)

## FAQS



# Battery Energy Storage Systems (BESS)

## PROJECTS IN UPSTATE NEW YORK

### WHAT IS BESS?

Battery Energy Storage Systems (BESS) are large, enclosed battery units connected to the electric grid. They store energy and deliver it back to the grid when it's needed.

By balancing supply and demand in real time, BESS helps stabilize the grid, improve reliability, and support energy needs during peak usage and extreme weather events.

### HOW DOES BESS WORK?

BESS systems charge using available electricity from the grid when demand and prices are low, then discharge that energy when demand increases.

This flexible operation helps balance the grid, improves efficiency, and supports more flexible use of all energy sources.

### WHY IS BESS IMPORTANT?

- Supports flexible use of existing grid assets to meet rising demand - without building new power plants or transmission lines.
- Improves grid reliability by providing backup power and rapid response during peak demand
- Stabilizes electricity costs by reducing reliance on expensive, often out dated peaker plants
- Enhances resilience during extreme weather and grid disruptions

### RELIABILITY & AFFORDABILITY

BESS strengthens the local power grid by delivering fast, on-demand energy during peak periods of demand and outages.

This reduces reliance on costly peaker plants and supports a resilient energy system — especially during summer heat and winter cold conditions common in Upstate New York.

### MEETING RISING DEMAND

Electricity demand in New York is rising. Meeting it is critical to maintaining reliability and controlling long-term costs. The New York grid operator (NYISO) is already forecasting potential supply shortfalls in the early 2030s - raising real reliability concerns.

So how do we meet that demand?

- **Added generation capacity:** New power plants take years to develop and build, with gas and nuclear projects often requiring 5 to 15+ years due to permitting, supply chains, and construction complexity.
- **New transmission**: Expanding transmission can take years to permit and even longer to build, and depends on available capacity from other regions.
- **Distributed energy storage:** BESS uses existing grid infrastructure more efficiently - storing energy when available and delivering it when it's needed most, helping meet demand faster without waiting years for new infrastructure.

POWER THE GRID FORWARD


**WHERE CAN I LEARN MORE?**

contact@carson-power.com

**www.carson-power.com**

# BESS Safety

Battery storage facilities are designed, tested, and operated with multiple independent layers of protection - ensuring safe, controlled operation at every stage. As deployment increases, failure rates continue to decline - reflecting advancements in safety design and standards.

**Battery storage technology has become significantly safer over time.**

Failure rates have decreased by 97% since 2018, driven by improved design, testing, and operational standards.

**Modern systems are actively monitored.**

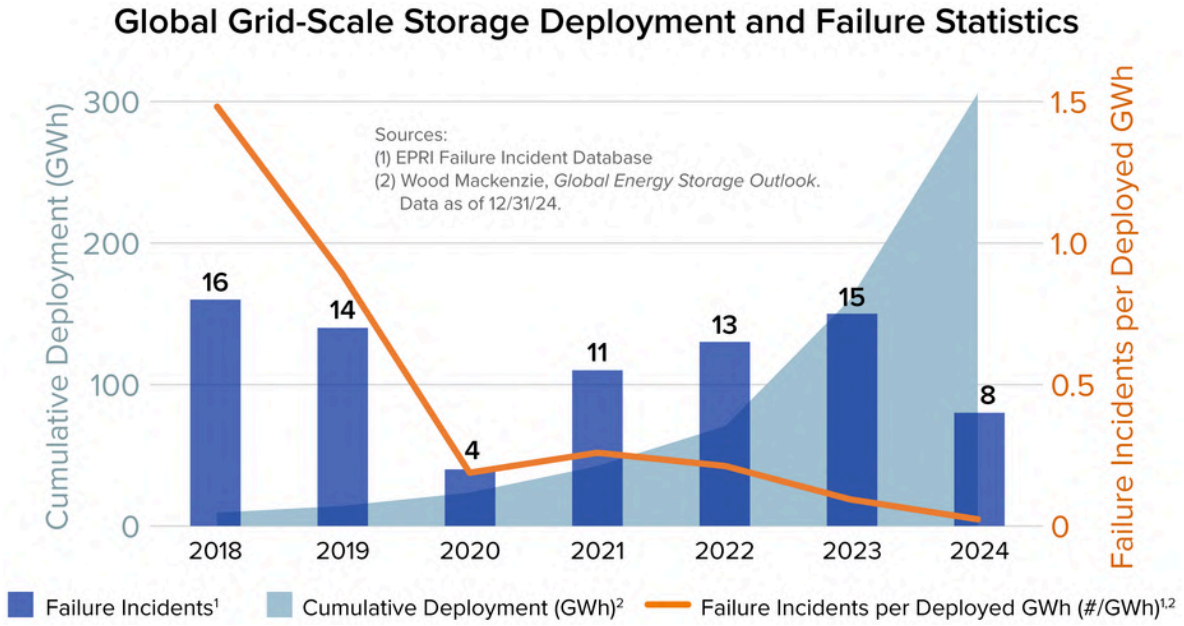
Advanced software continuously tracks performance and can automatically respond to irregular conditions before they escalate.

**Safer battery chemistry is used at grid scale.**

Most utility-scale systems use lithium iron phosphate (LFP) batteries, which are more thermally stable than the lithium-ion chemistries commonly found in consumer devices like phones, e-bikes, and laptops.

**Built for safety and stability at scale.**

Unlike small consumer batteries, grid-scale systems are engineered with multiple layers of protection, containment, and oversight.




*Citations: Electric Power Research Institute (EPRI). Insights from EPRI's Battery Energy Storage Systems (BESS) Failure Incident Database: Analysis of Failure Root Cause. May 2024. & Fire & Risk Alliance, LLC (FRA), and American Clean Power (ACP). Assessment of Potential Impacts of Fires at Battery Energy Storage System (BESS) Facilities. September 2025.*

# How BESS Safety is Managed

From design to daily operation, battery storage systems are engineered with multiple, independent layers of protection. As deployment increases, failure rates continue to decline - reflecting advancements in safety design and standards.

### Designed to Meet the highest standards

- Built to strict national standards (including UL 9540 & 9540A, NFPA 855)
- Compliance with all aspects of the nation's leading New York State Fire Code
- Engineered and tested with Full-scale fire testing to validate safety performance and prevention of fire propagation is required

### Installed and Maintained with Rigor

- Strict installation and commissioning processes
- Ongoing inspections and performance monitoring
- Operational data is used to improve system safety over time

### Monitored and Controlled in Real Time

- Systems are continuously monitored 24/7
- Automated controls detect and respond to irregular conditions instantly
- Remote oversight enables fast, proactive response

### Coordinated with Local Emergency Responders

- Site-specific emergency response plans developed with local fire departments
- Required training for first responders, both initial and ongoing
- Clear coordination protocols in place for rapid response
- Subject Matter Expert support for local emergency responders in the event of an emergency is required by the NYS fire code



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