



BatteryBarn™: 432 CEES™ cartridges, 4-high by 6-row by 18-column matrix, 20 MWh total capacity

A purpose-built warehouse facility housing 432 CEES™ cartridges. No HVAC. No fire suppression. No augmentation. Where lithium-ion demands 3 to 5 acres of outdoor space, ABC delivers the same capacity in a single 6,000 square-foot building.

**5 MW**

Power

**20 MWh**

Capacity

**432**

CEES™ Units

**6,000 ft<sup>2</sup>**

Footprint

**0.2 Acres**

Land Required

**15yr**

Warranty

### Restrained Land Resources

- **20 MWh on 0.2 acres**  
Land is the constraint that kills most utility-scale storage projects. The BatteryBarn™ eliminates this bottleneck entirely.
- **No setbacks required**  
No fire setbacks, no blast-rated exclusion zones, no HVAC equipment yards. Deploy directly adjacent to substations.
- **Urban infill ready**  
Sited on existing industrial parcels or urban locations where 3 to 5 acres of lithium-ion pad space does not exist.

### Safety and Compliance

- **Non-flammable chemistry**  
Aqueous sulfuric acid electrolyte. No organic solvent. Zero fire propagation risk. Eliminates NFPA 855 requirements.
- **Zero thermal runaway**  
Lead-acid electrochemistry does not support exothermic thermal runaway. The battery cannot self-heat to ignition.
- **Standard construction**  
Deploys in standard commercial warehouse. No explosion-rated construction, no fire-rated walls, no suppression systems.

### Total Cost of Ownership

- **\$0 augmentation**  
Less than 0.1% annual degradation eliminates battery augmentation entirely. Zero augmentation cost over 20 years.
- **\$0 HVAC / fire suppression**  
No chillers, heaters, or suppression systems. No annual maintenance contracts. Avoided costs compound over project life.
- **100% recyclable**  
Positive residual value at end of life through established lead recycling infrastructure.

### SYSTEM ARCHITECTURE

**Cartridge Matrix:** 432 CEES™, 4-high x 6-row x 18-column  
**DC System Voltage:** 1,152V (4 cartridges in series)  
**Parallel Strings:** 108 for current distribution

### PERFORMANCE

**Round-Trip Efficiency:** 88% AC-AC  
**Annual Degradation:** <0.1%/yr, no measurable fade  
**Design Life:** 20-25 years

**Hydrogen Management:** Sealed VRLA design with flame arrestors. Continuous ventilation maintains hydrogen below 1.0% (well below 4.0% LFL).

**Maintenance Access:** 10-foot row spacing for forklift access. High-voltage DC electrical room physically separated from battery area.

## Evaluate BatteryBarn™ for Your Project

Our engineering team will assess your site requirements, load profile, and interconnection constraints. Contact us at (989) 424-6645 or visit [advancedbatteryconcepts.com](http://advancedbatteryconcepts.com)