



# Energy Storage Americas 2019: Where Batteries Met Bad Jokes (and Changed the Grid)

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Let me ask you something - when was the last time you got genuinely excited about a battery? If your answer is "Never," you clearly missed the fireworks at Energy Storage Americas 2019. This wasn't your grandma's Tupperware party. utility executives doing the "Tesla tango" with solar developers, engineers debating battery chemistry like master sommeliers, and enough lithium-ion buzz to power a small nation. Let's unpack why this event became the Woodstock of watt-hours.

### The Storage Super Bowl: Key Takeaways from ESA 2019

Remember when energy storage meant "that dusty UPS in the server room"? The 2019 conference in San Diego slapped that old narrative sideways. Three things became crystal clear:

- California's duck curve had everyone quacking about 4-hour battery systems
- Texas-sized storage projects were going vertical faster than a SpaceX launch
- Utilities finally admitted storage wasn't just for hippies with solar panels

### Lithium's Limelight (and Its Awkward Cousins)

While lithium-ion batteries dominated exhibit halls like pop stars at a teen concert, the 2019 show gave airtime to some fascinating understudies:

- Vanadium flow batteries - the "heavy metal" solution for grid-scale storage
- Thermal storage using molten salt (basically capturing sunlight in a lava lamp)
- Compressed air systems that store energy like giant underground whoopee cushions

A Siemens engineer joked: "We're not just storing electrons anymore - we're basically running a physics-themed buffet." The crowd ate it up - literally, during the infamous "battery-shaped cookie" incident at the Tesla booth.

### Policy Wars: FERC 841 and the Storage Revolution

The real backroom drama centered on FERC Order 841 implementation. For non-grid geeks, this was like the "Magna Carta for Megawatts." Key battlegrounds included:

- Capacity market rules that treated storage like Swiss Army knives
- States racing to update interconnection standards (some faster than others)
- The great "storage-as-transmission" debate - energy's version of "is a hot dog a sandwich?"



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An AES developer told me: "We're not just building projects anymore - we're writing the physics lawbook for 21st century electrons." Poetic? Maybe. Accurate? The 400% storage growth from 2018-2022 suggests yes.

## Case Study: Tesla's 182.5 MW Moss Landing Project

No discussion of ESA 2019 is complete without the project that made utility planners drool:

- Enough capacity to power every home in San Jose for 6 hours
- Paired with existing gas peakers like peanut butter meets jelly
- Reduced local transmission upgrades by \$160 million (take that, copper wires!)

The project manager quipped: "We're not just storing energy - we're storing avoided infrastructure costs." Cue the standing ovation from ratepayers.

## The Great Ancillary Services Gold Rush

2019 marked when storage stopped being just a backup singer and became the rockstar of grid services:

- Frequency regulation response times under 100 milliseconds (faster than a caffeine-addicted hummingbird)
- Voltage support replacing spinning reserves (goodbye, fossil-fueled ballet dancers)
- Black start capabilities turning batteries into grid paramedics

A PJM operator admitted: "We used to think batteries were fancy calculators. Now they're running the spreadsheet." The crowd nodded in reluctant agreement.

## Storage Economics: When Batteries Learned to Count

The 2019 LCOE (Levelized Cost of Energy Storage) numbers dropped jaws faster than a magician's trick:

- 4-hour systems hitting \$150/kWh - cheaper than some peaker plants' fuel costs
- Software-driven "value stacking" creating 7 revenue streams per project
- O&M costs 40% lower than 2015 projections (take that, skeptics!)

As one financier put it: "We're not financing batteries anymore - we're underwriting Swiss bank accounts for electrons." The subsequent champagne fountain incident remains legendary.

## The Hydrogen Curveball

Just when lithium thought it ruled the roost, 2019's conference hallway chatter buzzed about:



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Green hydrogen projects pairing electrolyzers with solar farms

Seasonal storage potential (because sometimes you need summer sun in winter)

The great "batteries vs. hydrogen" debate - energy's new Coke vs. Pepsi

A Shell executive mused: "We'll take electrons and molecules - this isn't a divorce court." The crowd chuckled, knowing the marriage would be messy but fruitful.

Workforce Woes: Training the Battery Whisperers

With storage deployments doubling annually, 2019 exposed a dirty little secret - nobody had enough:

Cybersecurity experts who understood both IT and substations

Battery chemists fluent in utility regulation

Project managers who could translate between engineers and financiers

The most popular conference swag? "Battery University" crash course coupons. An Arizona utility recruiter joked: "We're hiring battery babysitters - six-figure salary, must love amp-hours."

As the California sun set on the 2019 conference, one thing became clear - the energy storage revolution wasn't coming. It had already arrived, lithium packs blazing, policy papers flying, and an entire industry learning to speak the shocking language of electrons on demand.

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