

Utility-Scale Battery Energy Storage Solutions for CAISO

stem

As California continues to transition its clean energy grid and batteries become even more relied on, Stem's energy experts expect the utility-scale energy storage projects in CAISO to continue to be economically viable. Given the regulatory tail winds, deepening "duck-curve" supporting energy arbitrage opportunities, and robust resource adequacy markets, their reliability is driving greater value now more than ever.

CAISO Market Outlook for Energy Storage

- Largest installed battery capacity nationwide at over 8 GW / 32 GWh and another 13 GW / 58 GWh forecasted to come online in next 5 years¹
- Expected projected battery revenues to be \$250-\$400/kW per year over the next 20 years²
- Deepening California duck curve as ever-increasing solar penetration depress mid-day energy prices
- Increasing electricity demand and renewable resources coupled with lagging transmission and natural gas prices causing real time energy price spikes especially in winter months
- Weather-driven high peak load events, high EV penetration, and electrification making firm capacity valuable supporting robust Resource Adequacy prices



Source: Energy KnowledgeBase by Enerdynamics

¹As of March 2024, according to WoodMac.

²Revenue streams include day-ahead, real-time energy, regulation, spinning reserves, and resource adequacy (capacity); kW is the rated power capacity of the battery; Stem does not forecast the market prices and uses E3's core forecast in its revenue simulations that were based on a 50 MW / 200 MWh battery in the NP-15 zone.

Why Partner with Stem?

Digital Platform

Stem's scalable digital platform provides customers with flexible and transparent asset performance management and asset value maximization.

Energy Services

Our energy experts aid with early stage project evaluation, construction-stage deployment, and operations-stage O&M and managed revenue services.

Energy Technology

Stem's modular energy storage technology uses bankable OEMs and out energy management system for solar and storage portfolios.

Development Capital

Our equity financing supports early-stage development activities when there is the highest risk for the future of your projects.

Project Spotlight



Southern California Edison Los Angeles Basin

Use Cases: Local Capacity Resources (LCR)
Storage System Size (Fleet): 450MWh



Central Coast Community Energy & Silicon Valley Clean Energy

Use Cases: Scalable price forecasting and bid optimization to manage trading strategies for a growing portfolio of utility-scale renewable energy assets in CAISO
Software Solution: PowerBidder™ Pro



SB Energy

Use Cases: Leverage energy management system to deploy energy storage pipeline across North America, including CAISO, over the next five years.
Storage Portfolio Size: 10GWh

For more information, visit www.stem.com

