

# Large-scale Energy Storage in California

Front of Meter (FTM) Opportunities with Stem

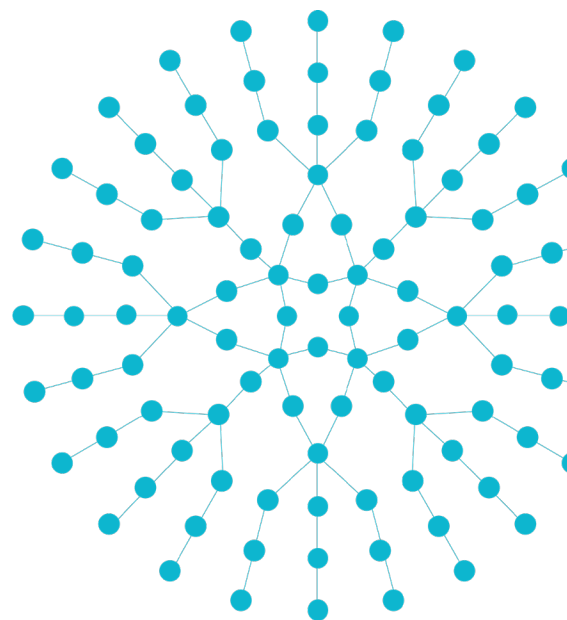
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## Resources for a Reliable, Resilient Grid

As California transitions to an affordable and reliable clean energy grid, utilities and other entities across the state are procuring critical grid capacity resources to ensure the lights stay on when the grid is strained. Stem has successfully operated energy storage resources under California's resource adequacy (RA) program since 2016. As such, we are intimately familiar with the RA program and have devoted staff who monitor requirements and changes on an ongoing basis.

Stem works with our developer and off-taker partners to register energy storage systems as RA assets and in forward capacity markets, and to submit bids into Day-Ahead and Real-Time markets. RA projects are a natural fit with other market value streams, as the "must-offer" model requires continuous market participation from RA resources and fits with underlying load-serving needs.

Stem's best-in-class Athena® smart energy software drives success under this framework by optimizing the economic and operational trade-offs necessary for successful market participation.



## World-class Software Drives Ongoing Market Success

In addition to delivering on RA, energy storage asset owners must maximize wholesale market revenues for project success. Stem increases value and decreases risk for off-takers and asset owners by adapting to dynamic market conditions to maximize the value of energy storage over its lifetime.

Stem's combination of program expertise and market-leading software offers a differentiated solution for wholesale energy market participation. Our bidding platform, Athena® Bidder, generates multiple data forecasts and then overlays economic and operational constraints to produce energy bids that are optimized for each market interval. Athena® Bidder co-optimizes across all real-time and day-ahead markets, finding the best revenue opportunities while following all RA requirements.

Athena® Bidder integrates with market systems via a flexible gateway that supports a wide variety of industry-standard protocols such as DNP3, as well as specific integrations with scheduling coordinators and trading entities.

## Entire Lifecycle Support for Energy Storage



### Project Design

Revenue modeling and analysis, market expertise, ESS size selection



### Power Marketing

Market opportunity identification, PPA/ESA structuring and pricing



### Installation Support

Procurement, EPC technical advising, interconnection and permitting support



### Revenue Maximization

Optimal market bidding strategy across all value streams and program requirements



### Asset Management

Warranty management, system health monitoring, preventative maintenance, performance guarantees



### Program Compliance

Data reporting for CAISO and solar ITC, market settlement

### Partner Benefits

By joining the Stem Partner Program, you receive access to educational sessions, sales support, policy and regulatory insight, and market outlooks

## Project Spotlight



### Southern California Edison Los Angeles Basin

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

For more information, visit [www.stem.com](http://www.stem.com)

