Our Members
According to market research firm IHS, energy storage growth will “explode” from .34 GW in 2012-2013 to 6 GW by 2017 and over 40 GW by 2022.
Problem: 40 GW peak generation needed in next 15 years
Policy Opportunity: EPA Clean Power Plan

Percent CO2 / MWh Reduction Shifting from Peak to Off-Peak:
- SCE: 33% reduction
- PG&E: 26% reduction
- SDG&E: 32% reduction
Also ~56% lower NOx emissions

![Graph showing CO2 emission rate comparison between peak and off-peak periods.](chart.png)
Energy Storage and Clean Power Plan

- Building Block #1: Power Plant Efficiency Improvements
- Building Block #2: Redispatch
- Building Block #3: Nuclear and Renewable
- Building Block #4: Demand Side
- State Implementation Plans
BB#1: Energy Storage to Increase System Efficiency

- PJM introduces a second, fast moving regulation signal (RegD)
- $13.75 MWh
- $38.75 MWh
- Market clearing prices
- Regulation requirements reduced

Dynamic Fast Responding Resources (RegD) increase from 6 MW in October 2012 to 19 MW in October 2013, with a peak of 450 MW. Regulation requirements decrease significantly.
BB# 1: Energy Storage for 15% output increase, 10% efficiency increase, 7% GHG reduction

Photo Courtesy Alevo
BB#2: Energy Storage for Peak Shaving

- Ability to charge at lower off-peak heat rates.
- Support for min. load requirements for other resources.
- No direct emissions from peak demand.
BB#3: Energy Storage as Flexible Resource

50 MW
Gas Peaker
- out of merit generation
- significant standby costs
- standby emissions

flex range
40 MW

50 MW
Storage Unit
- 0 direct emissions
- low standby costs

minutes to dispatch

seconds to dispatch

Energy Storage Association
BB#2/4 : Energy Storage for Peak Shaving, Reliability, VAR Support

Photo Courtesy S&C Electric
BB# 2/3/4: Energy Storage for T&D Deferral, Transmission Capacity Relief, Frequency Regulation, Spinning Reserve

Photo Courtesy S&C Electric
BB# 2/3/4: Energy Storage with microgrid for increased efficiency, reliability

Photo Courtesy Saft