

Fleet of Behind-the-Meter BESS in CAISO

A leading financial technology company interested in cleantech investments selected CES to model the overall long term revenue potential from a fleet of behind-the-meter BESS assets located at multiple C&I customer sites in California.

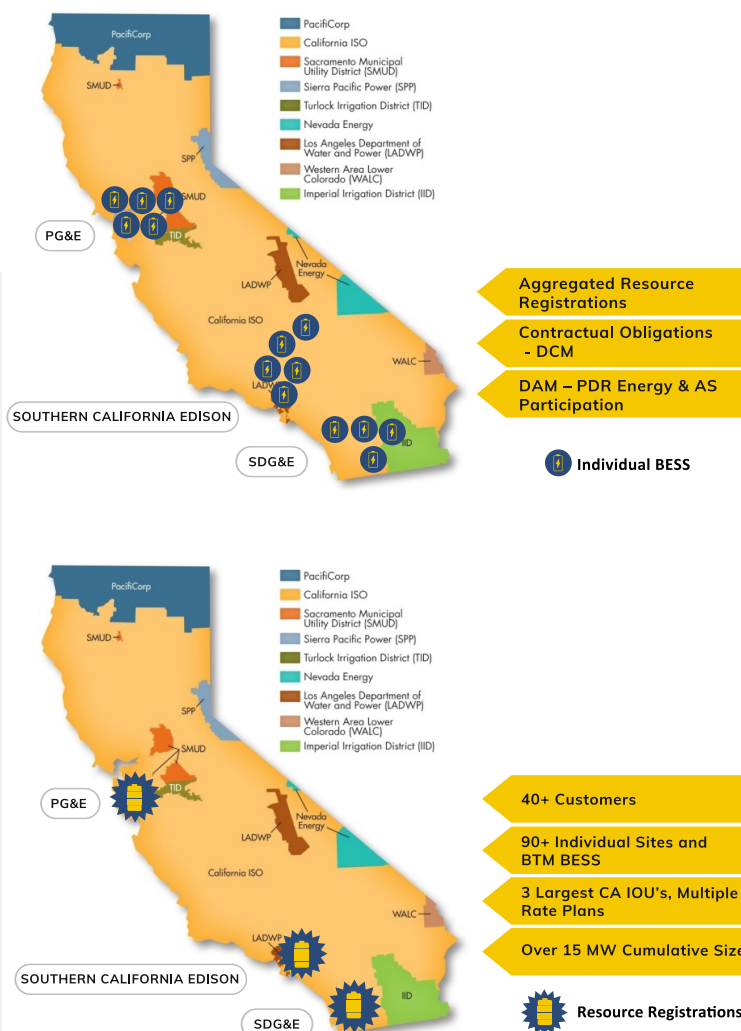
OBJECTIVES

- Analyze the revenue potential for incremental revenues for a fleet of behind-the-meter BESS across service territories of California's three largest IOU's – PG&E, SCE and SDG&E
- Model existing contractual obligations for demand charge management services with local utilities
- Consider wholesale market participation opportunities such as proxy demand response resources by aggregating multiple distributed resources.

OUR APPROACH

CES performed a methodical assessment of the revenue potential from the fleet of assets the included the following steps:

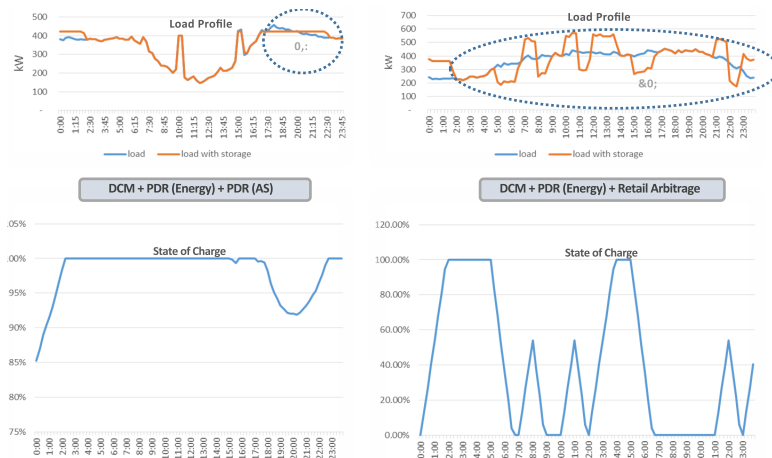
- Analysis of individual sites, rate plans, load profiles, BESS sizes, load reduction capabilities
- Definition of use cases for simulations with prioritization of DCM
- Proxy Demand Response (PDR) resource formulation per CAISO market rules and aggregated potential load reduction (PLR) from individual sites.
- Consideration to available revenue streams: Demand Charge Management (DCM), Resource Adequacy, PDR, utility Demand Response, retail Energy Arbitrage
- Revenue Analysis for individual CAISO resources
- Scaling of revenue forecasts across entire project portfolio



OUTCOMES

CES developed project term incremental revenue projections for the fleet of behind-the-meter BESS from participation in CAISO's wholesale energy market. CES utilized our market price forecasts and dispatch simulations from the Behind-the-Meter model from our proprietary CoMETS platform to estimate revenues. Our modeling included contingencies for existing contractual obligations and also sensitivities to asset cycling and warranties. We also calculated key financial ratios of IRR and NPV for effective valuation of the investment opportunity by the client.

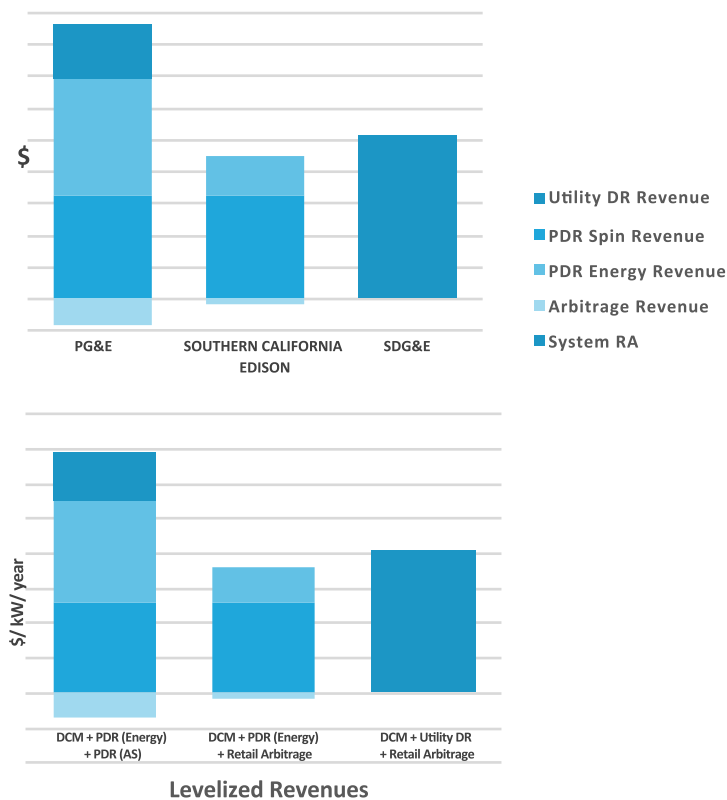
Sample BTM BESS performing Demand Charge Management, PDR – Energy and Ancillary Services and Retail Arbitrage



FACTORS INFLUENCING BESS DISPATCH

- Availability of RE generation
- PPA commitments, hedging contracts
- BESS sizing, reserve capacity
- Opportunity costs of RE Generation
- Market participation rules
- Selection of services
- State of Charge (SOC) Management
- Degradation and Cycling
- Provision of multiple services in the same market hour
- Value Stacking

Incremental Revenues (NPV) – Sample Resources in



ABOUT CES

Established in 1998, Customized Energy Solutions (CES) is a consulting and services company with over 20 years of diversified experience across North American energy markets. CES offers best-in-class hosted energy market operations platforms and a wide spectrum of consulting services. CES is committed to promoting economic development through the advancement of transparent, efficient, and non-discriminatory wholesale, retail electricity and natural gas markets. Our practical experience running daily operations of over 220 MW of advanced energy storage facilities and advising clients on policy matters provides our team with superior credentials that sets our consulting services apart from other providers.

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