



Energy Storage Emerging Technology Commercialization Assessment Protocol

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Energy Storage Research Over 10 Years of Experience



Hardware

**About 60 Projects
Over \$34 M Funded
Leveraged over \$111 M
in Match Funding**



Systems





CALIFORNIA ENERGY COMMISSION

Table 2, CPUC Energy Storage Procurement Targets

(From CPUC Decision 13-10-040, Table 2, p. 15)

Storage Grid Domain Point of Interconnection	2014	2016	2018	2020	Total
Southern California Edison					
Transmission	50	65	85	110	310
Distribution	30	40	50	65	185
Customer	10	15	25	35	85
Subtotal SCE	90	120	160	210	580
Pacific Gas and Electric					
Transmission	50	65	85	110	310
Distribution	30	40	50	65	185
Customer	10	15	25	35	85
Subtotal PG&E	90	120	160	210	580
San Diego Gas & Electric					
Transmission	10	15	22	33	80
Distribution	7	10	15	23	55
Customer	3	5	8	14	30
Subtotal SDG&E	20	30	45	70	165
Total - all 3 utilities	200	270	365	490	1,325



AB 2514 Energy Storage Use Cases

STORAGE GRID DOMAINS (Grid Interconnection Point)	REGULATORY FUNCTION	USE-CASE EXAMPLES
Transmission-Connected	Generation/Market	(Co-Located Energy Storage) Concentrated Solar Power, Wind + Energy Storage, Gas Fired Generation + Thermal Energy Storage
	Transmission Reliability (FERC)	(Stand-Alone Energy Storage) Ancillary Services, Peaker, Load Following
		Voltage Support
Distribution-Connected	Distribution Reliability	Substation Energy Storage (Deferral)
	Generation/Market	Distributed Generation + Energy Storage
	Dual-Use (Reliability & Market)	Distributed Peaker
Behind-the-Meter	Customer-Sited Storage	Bill Mgt/Permanent Load Shifting, Power Quality, Electric Vehicle Charging



Energy Storage Technology Commercialization Assessment and Risk Mitigation

- Product Maturity
- Company Performance
- Product Longevity Expectations
- Price Viability
- Cost reduction expectations
- Competitiveness with Alternative Technology Solutions



Energy Storage Protocol Development Process

- Develop Working Concept for the Protocol
- Obtain Technical Advisory Committee Assessment and Recommendations
- Develop a Protocol that is Useful and Acceptable to California IOUs and the CPUC
- Hold Public Workshops
- Develop a Pathway for Emerging Energy Storage Technologies to Participate in Future AB-2514 Competitive Rounds



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