

Attachment 1 to the Consistent Evaluation Protocol: "CEP Spreadsheet"

CONFIDENTIAL INFORMATION. Data provided to the CPUC herein is confidential under California Public Utilities Code Section 583, D.06-06-066, and D.13-10-040.

The Consistent Evaluation Protocol (CEP) is for energy storage benchmarking and general reporting purposes, per D.13-10-040.

	1	2	3	4	5	6	7	8	9	10	11	12
Descriptive Items												
	IOU (PGE / SCE / SDGE)											
	Name of Shortlisted Project											
	Interconnection Voltage (kV)											
	Interconnection Level (Transmission / Distribution)											
	Local Capacity Area											
	Zone (NP / ZP / SP)											
	Status (New / Existing)											
	Product (Dispatchable / RA)											
	Energy Storage Technology											
	Commercial Operation Date											
	Term (Years)											
	Max Capacity (MW)											
	Min Capacity (MW)											
	Qualifying RA Capacity (MW)											
	Duration of Max Sustainable Discharge Rate (Hours)											
	Efficiency at Max Capacity (%)											
	Max Daily Switches -- Charge / Discharge (# Charges)											
	Max Cycles per Lifetime (# Cycles)											
	Self-Discharge in Stand-by (MW / Hour)											
	Ramp Rate -- Charge / Discharge, Up / Down (MW / Hour)											
	AGC (Yes / No)											
	Regulation at Zero (Yes/No)											
	Contract Cost (\$)											
	Variable O&M for Discharging (\$/MWh)											
	Fixed O&M (\$/kW-Year)											
Quantitative Items*												
Market Benefits (CEP Assumptions)	Levelized Capacity RA Value (\$/kW)											
	Levelized Energy Value (\$/kW)											
	Levelized Ancillary Services Value (\$/kW)											
	Distribution Investment Deferral Value - if applicable (\$/kW)											
Market Costs (CEP Assumptions)	Levelized Capacity Payments and Fixed O&M Cost (\$/kW)											
	Levelized Charging Costs and VOM Cost (\$/kW)											
	Levelized Network Upgrade Cost (\$/kW)											
	Levelized GHG Compliance Cost (if applicable) (\$/kW)											
	Levelized Debt Equivalency Cost (\$/kW)											
NPV (CEP Assumptions) NPV (Proprietary IOU Assumptions)	Levelized Net Market Value \$/kW											
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Applicable End Uses ("2" = primary function; "1" = secondary function; "0" = function not present)												
ISO / Market	Ancillary Services: Frequency Regulation											
	Ancillary Services: Spin / Non-Spin / Replacement Reserves											
	Ancillary Services: Ramp											
	Black Start											
	Real Time Energy Balancing											
	Energy Price Arbitrage											
	Resource Adequacy											
Generation	Intermittent Resource Integration: Wind (Ramp / Voltage Support)											
	Intermittent Resource Integration: PV (Time Shift, Voltage Sag, Rapid Demand Support)											
	Supply Firming											
	Peak Shaving											
Transmission / Distribution	Transmission Peak Capacity Support (Upgrade Deferral)											
	Transmission Operation (Short Duration Performance, Inertia, System Reliability)											
	Transmission Congestion Relief											
	Distribution Peak Capacity Support (Upgrade Deferral)											
	Distribution Operation (Voltage / VAR Support)											
Customer	Outage Mitigation: Micro-Grid											
	Time-of-Use (TOU) Energy Cost Management											
	Power Quality											
	Back-Up Power											

*With the exception of "NPV (Proprietary IOU Assumptions)" all of the Quantitative Items are calculated using standardized planning assumptions, as discussed in the Section C of the CEP.