

Global Project Finance Alert

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California Adopts Energy Storage Procurement Framework

California's Public Utilities Commission (CPUC) has adopted the country's first energy storage procurement targets requiring utilities to integrate energy storage resources into the state's electricity grid. Pursuant to the CPUC's October 17 order implementing Assembly Bill 2514 (2010), the CPUC will require that the state's three investor-owned utilities (IOUs), Pacific Gas & Electric, Southern California Edison and San Diego Gas & Electric, procure 1,325 MW of energy storage capacity by 2020, with the total storage capacity to be installed and delivering to the grid by no later than the end of 2024. The order will lead to energy storage capacity sufficient to serve approximately one million California homes and will also require the state's community choice aggregators and electric service providers to procure energy storage to cover one percent of their 2020 peak load.

Energy Storage Procurement Targets

The CPUC Energy Storage Procurement Framework (the "CPUC Energy Storage Framework") sets targets for energy storage capacity to be integrated across the grid with transmission-connected, distribution-connected and customer-side applications that must be contracted on a graduated basis in 2014, 2016, 2018 and 2020, as set forth in the table below. Up to 80 percent of the targeted megawatts can be shifted between the transmission and distribution categories, but no shifting is allowed into or out of the customer category.

Energy Storage Procurement Targets (in MW)

	2014	2016	2018	2020	Total
Southern California Edison (subtotal)	90	120	160	210	580
Transmission	50	65	85	110	310
Distribution	30	40	50	65	185
Customer	10	15	25	35	85
Pacific Gas & Electric (subtotal)	90	120	160	210	580
Transmission	50	65	85	110	310
Distribution	30	40	50	65	185
Customer	10	15	25	35	85

	2014	2016	2018	2020	Total
San Diego Gas & Electric (subtotal)	20	30	45	70	165
Transmission	10	15	22	33	80
Distribution	7	10	15	23	50
Customer	3	5	8	14	30
Total (all three IOUs)	200	270	365	490	1,325

Procurement Framework

The CPUC Energy Storage Framework calls for each IOU to submit a procurement process pursuant to which the utility will initiate competitive requests for offers (RFOs) and then enter into bi-lateral contracts with third-party energy storage providers. The energy storage procurement processes are required to be competitive but due to stringent resistance from the commentators, the reverse auction format used in the renewable energy auction mechanism (also known as RAM) was rejected by the CPUC. Since energy storage technologies vary considerably in terms of size and the types of grid services they can provide (from grid balancing to renewables integration to back up capacity), the prevailing viewpoint is that RFOs provide a better mechanism for evaluating and valuing energy storage by the service offered. Each IOU must submit a proposed procurement application to the CPUC by March 1, 2014, along with a structure for steady but orderly contracting and implementation. The first competitive solicitation for third-party-owned storage is to be held in 2014, with subsequent solicitations in 2016, 2018, and 2020.

IOU-Owned Capacity

Each IOU can own up to 50 percent of its targeted energy storage capacity but it must also use a competitive RFO process to acquire such capacity. For IOU-owned storage capacity, the CPUC Energy Storage Framework calls for the IOUs to submit CPUC applications to hold competitive RFOs for turn-key development projects that will be acquired by the IOUs pursuant to Purchase and Sale Agreements (PSAs) with third party contractors. The IOUs can also request CPUC approval to solicit Engineering, Procurement and Construction (EPC) contracts, or other project development structures, to procure the IOU-owned capacity, but the requesting IOU must provide a rationale for why the PSA structure is not appropriate.

Eligible Energy Storage Projects

All “energy storage resources” as defined in Public Utilities Code Section 2835(a) are eligible under the CPUC Energy Storage Framework, except for pumped storage hydro projects larger than 50 MW. Pursuant to Public Utilities Code Section 2835(a), an eligible energy storage system is defined as “commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy.” In order to be an eligible “energy storage resource,” the system must accomplish one of the following: “either reduce emissions of greenhouse gases, reduce demand for peak

electrical generation, defer or substitute for an investment in generation, transmission, or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid.” Moreover, the energy storage system must do one of the following:¹

- A. use mechanical, chemical, or thermal processes to store energy that was generated at one time for use at a later time
- B. store thermal energy for direct use for heating or cooling at a later time in a manner that avoids the need to use electricity at that later time
- C. use mechanical, chemical or thermal processes to store energy generated from renewable resources for use at a later time or
- D. use mechanical, chemical or thermal processes to store energy generated from mechanical processes that would otherwise be wasted for delivery at a later time.

¹ Public Utilities Code Section 2835(a) also requires that the system either be owned by a load-serving entity or local publicly owned electric utility, a customer of a load-serving entity or local publicly owned electric utility, or a third party, or that the system be jointly owned by two or more of the above.

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