

SDG&E's Energy Storage 2016 Procurement Plan Application

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SDGE

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SDG&E's Energy Storage 2016 Procurement Plan Application (A.16-03-003)



- SDG&E's energy storage procurement plan focuses on meeting the procurement targets adopted in the Framework Decision (D.13-10-040), achieving market transformation, and following AB 2514 guiding principles:
 - Optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of T&D upgrade investments;
 - Integration of renewable energy; and
 - Reduction of greenhouse gas emissions

SDG&E's Energy Storage Procurement Targets (D.13-10-040)

Domain	2014	2016	2018	2020	2014-2020
Transmission	10 MW	15 MW	22 MW	33 MW	80 MW
Distribution	7 MW	10 MW	15 MW	23 MW	55 MW
Customer	3 MW	5 MW	8 MW	14 MW	30 MW
Total	20 MW	30 MW	45 MW	70 MW	165 MW

SDG&E 2016 Storage Procurement Plan Background



Existing Projects and Programs per the Framework Decision

Domain	Projects	Capacity
Transmission	1. Lake Hodges Pumped Hydro	40.00 MW
	Total Transmission Domain	40.00 MW
Distribution	1. Borrego Springs Microgrid Project	0.57 MW
	2. SDG&E's 2012 GRC Energy Storage Program	5.58 MW
	Total Distribution Domain	6.15 MW
Customer	1. Self-Generation Incentive Program	3.66 MW
	2. Permanent Load Shifting	1.00 MW
	Total Customer Domain	4.66 MW
Total Capacity Authorized in the 2014 Cycle		50.81 MW

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New Projects Procured/Installed in the 2014 Cycle

Domain	New Projects from 2014 Cycle	New Capacity (March 1 Application)	New Capacity (Amended)
Transmission	Pending Contract(s) from 2014 All Source RFO ^[1]	40.00 MW	20.00 MW
Distribution	No contracts awarded from 2014 Distribution Reliability & Power Quality RFP	0.00 MW	0.00 MW
Customer	New interconnections since 2014	3.00 MW	3.00 MW
	Currently pending interconnections	5.29 MW	5.29 MW
	Total New Incremental Capacity from 2014 Energy Storage Procurement Cycle	48.29 MW	28.29 MW

^[1] These contracts had not been executed as of March 1, 2016, the filing date of SDG&E's 2016 Energy Storage Procurement Plan application. SDG&E has since executed and requested approval of one 20 MW energy storage contract as part of its All-Source RFO Contract Application (docket number pending), filed March 30, 2016. SDG&E is amending its 2016 Storage Procurement Plan supporting testimony to reflect this update.

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SDG&E's 2016-2020 Proposed Procurement (Amended) – All Domains

Procurement Targets and Current Progress	Transmission	Distribution	Customer	Total
Established Target	80.00 MW	55.00 MW	30.00 MW	165.00 MW
Less Existing projects as authorized	40.00 MW	6.15 MW	4.66 MW	- 50.81 MW
Less Expected offsets from 2014/2015 procurement and installations	20.00 MW	0.00 MW	8.29 MW	- 28.29 MW
Net Target for 2016 and remaining cycles / Flexibility [w/ transfers Out; In] ^[1]	20 MW / [4.00; 59.08 MW]	48.85 MW / [9.77; 64.85 MW]	17.05 MW [17.05; 47.05 MW]	85.90 MW

^[1] D.13-10-040 authorized procurement flexibility among the transmission and distribution domains, and allows up to 80% of the target to be shifted between the two domains. See D.13-10-040, Appendix A at 3. This was further modified in D.16-01-032 OP1 to allow shifting from the Transmission and/or Distribution domains into the Customer domain up to a “ceiling” of 200% of the customer domain targets.

SDG&E 2016 Storage Procurement Plan Changes for the 2016 Procurement Cycle

- The procurement methods, evaluation protocol, and cost recovery proposal for the 2016 procurement cycle are virtually identical to those of the 2014 procurement cycle
- Notable changes for 2016:
 - **Incremental Resource Additions Considered** – SDG&E considers new projects resulting from the 2014 procurement cycle in calculating its remaining energy storage procurement targets for 2016-2020:
 - 20 MW* Hecate Contract resulting from 2014 All-Source RFO
 - 8.29 MW of new/pending customer-sited storage interconnections.
 - **Increased Volume (in MWs) sought** in the 2016 LCR RFO (up to 144 MW vs 16 MW in 2014)
 - Phase 1 interconnection study required (or passage of WDAT/ CAISO FastTrack)

*Revised MW value.

SDG&E 2016 Storage Procurement Plan

Ch. 1: Policy

- **SDG&E's primary strategy** - to procure energy storage resources that *simultaneously* satisfy its storage mandate and meet SDG&E's local capacity requirement needs:
 - SDG&E must solicit and procure 165 MW of energy storage capacity by 2020, to be in-service no later than 2024
 - 2012 Long Term Procurement Plan Track IV Decision (D.14-03-004) authorizes SDG&E to procure energy storage to meet LCR needs with an in-service date no later than year-end 2021
 - Minimizes costs/risks to customers and requires that SDG&E move on a somewhat accelerated timeline to ensure approval
- Based on the existing projects and programs approved in the Framework Decision, SDG&E has *already* achieved its 2016 procurement targets
- However, there are near-term opportunities to address capacity and preferred resource requirements, as well as distribution system with storage

SDG&E 2016 Storage Procurement Plan

Ch. 1: Policy

- For the 2016 storage procurement cycle, SDG&E will pursue storage in two solicitations:
 - **2016 Preferred Resources Local Capacity Requirement RFO** soliciting **up to 140 MW** from five different product types including energy storage. Energy storage solicited may come from any of the three grid domains: transmission, distribution, or customer
 - **2016 Distribution Reliability/Power Quality RFP** soliciting **up to 4 MW** of utility-owned energy storage systems via a competitive RFP process to: (a) potentially enable some measure of distribution capacity deferral, or (b) address reliability or provide outage management support
- The RFO/RFP are functionally identical to the Commission-approved procurement processes in SDG&E's 2014 Energy Storage Procurement Plan
- SDG&E may procure 144 MW via the two solicitations described above. However, SDG&E may procure more or less based on the offers received

SDG&E 2016 Storage Procurement Plan

Ch. 2: Procurement Methodology



Preferred Resources Local Capacity Requirements RFO

Domain	Transmission, Distribution, and Customer (as a DR product)
Description	Issued February 26, 2016 to Provide resources for Local Capacity Requirements as authorized by the Track IV decision of the 2012 LTPP Proceeding.
Capacity	Up to 140 MW (In aggregate among all product types)
General Conformance Requirements	(1) comply with RA counting rules, (2) interconnect within the San Diego local subarea, (3) have a portion of its delivery term include all of 2022, and (4) be incremental to CAISO study assumptions underlying Track IV authorization.
Energy Storage Ownership	Third Party Owned / contracted facilities; Utility ownership (e.g. turnkey facilities) offers considered and will be evaluated for transmission & distribution level systems.
Procurement	RFO
Comments	This RFO intends to help meet local capacity requirements in 2022 due to SONGS/OTC retirements. For energy storage product type, the utility ownership models include Engineering, Procurement and Construction (EPC) and Build, Own, Transfer (BOT) approaches

SDG&E 2016 Storage Procurement Plan

Ch. 2: Procurement Methodology



Distribution Reliability / Power Quality RFP

Domain	Distribution
Description	To be issued on or around December 1, 2016, this RFP seeks utility-owned energy storage located at substations and on distribution circuits designed to enable some measure of capacity deferral or provide reliability / outage management support.
Capacity	Up to 4 MW
Products	Similar to those requested in SDG&E's 2014 Distribution Reliability RFP. Capacity Deferral, Reliability / Outage Management, or Other.
Ownership	Utility-owned projects
Procurement	RFP

SDG&E 2016 Storage Procurement Plan

Ch. 3: Evaluation Protocol



- SDG&E's proposed evaluation protocols for the 2016 RFO and RFP mirror the evaluation approaches that SDG&E previously proposed, and were approved, in the 2014 procurement cycle
- Separate evaluation methodologies for each solicitation

SDG&E 2016 Storage Procurement Plan

Ch. 3: Evaluation Protocol

Evaluation of the 2016 Preferred Resources LCR RFO

- SDG&E will evaluate and rank storage offers based on Least-Cost, Best-Fit (LCBF) principles
- Offers will be shortlisted and analyzed based on quantitative and qualitative aspects

$$\text{Net Market Value} = (\text{Quantifiable Benefits}) - (\text{Quantifiable Costs})$$

Quantifiable Benefits	Quantifiable Costs
<ul style="list-style-type: none">• Capacity• Energy• Ancillary Services• Residual Capacity / Energy	<ul style="list-style-type: none">• Capacity / O&M Cost• Interconnection• Congestion-Related Costs• Other Costs if applicable

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Ch. 3: Evaluation Protocol



Evaluation of the 2016 Distribution Reliability / Power Quality RFP

- SDG&E will use existing supply management evaluation and procurement methodologies and will select the best option based on quantitative costs and benefits, as well as qualitative aspects
- SDG&E will identify a specific distribution system need or use case, and will compare utility-owned energy storage systems versus other traditional or alternative solutions
- SDG&E will:
 - Conduct an RFP based on technical and operational requirements for each distribution system use case;
 - Analyze all the conforming offers received;
 - Compare costs and calculate quantifiable benefits for energy storage systems and other traditional and alternative solutions; and calculate/compare real or nominal Benefit-to-Cost ratios;
 - Identify and compare qualitative benefits for energy storage systems and other traditional and alternative solutions.

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Ch. 4: Cost Recovery



- SDG&E's proposed cost recovery remains unchanged for 2016 cycle:
 - Energy procured through the 2016 Preferred Resources LCR RFO will be subject to Cost Allocation Mechanism (CAM) cost recovery, as previously authorized, and will be recovered from all customers
 - Costs associated with storage procured through the 2016 Distribution Reliability/Power Quality RFP will be recovered from all customers through distribution rates
- SDG&E does not propose to procure bundled service storage with a generation/market function that would rely on Power Charge Indifference Adjustment (PCIA) in the 2016 procurement cycle

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SDG&E Witness Team

- **Chapter 1:** *Joshua Gerber* – Policy and SDG&E's Existing Projects and Plan
- **Chapter 2:** *Patrick Charles*– Proposed Procurement Methodology
- **Chapter 3:** *Randy Nicholson* – Proposed Evaluation Protocol
- **Chapter 4:** *Cynthia Fang* – Cost Recovery/Memorandum Account proposal

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