

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Order Instituting Rulemaking Pursuant to	)	
Assembly Bill 2514 to Consider the Adoption of	)	R.10-12-007
Procurement Targets for Viable and Cost-	)	(Filed December 16, 2010)
Effective Energy Storage Systems.	)	

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**OPENING COMMENTS OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E)**  
**ON THE ASSIGNED COMMISSIONER'S RULING PROPOSING STORAGE**  
**PROCUREMENT TARGETS AND MECHANISMS AND NOTICING ALL-PARTY**  
**MEETING**

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**I.**

**INTRODUCTION**

Pursuant to the Assigned Commissioner’s Ruling Proposing Storage Procurement Targets and Mechanisms and Noticing All-Party Meeting (“ACR”), issued June 10, 2013, Southern California Edison Company (“SCE”) respectfully submits its opening comments on the energy storage procurement proposals in the ACR.

Throughout this proceeding,<sup>1</sup> SCE has worked closely with the California Public Utilities Commission (“Commission” or “CPUC”) and Energy Division Staff to identify market barriers to storage, create an Energy Storage Roadmap, develop the storage use cases, and to advance and improve the cost-effectiveness studies commissioned by the CPUC. SCE commends Staff for

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<sup>1</sup> Order Instituting Rulemaking Pursuant to AB 2514 to Consider the Adoption of Procurement Targets for Viable and Cost-Effective Energy Storage Systems, Rulemaking (“R.”) 10-12-007, filed December 16, 2010.

their careful consideration of and responsiveness to stakeholder issues and concerns throughout this proceeding.

SCE understands the Commission Staff's desire to make rapid progress towards its goal of market transformation<sup>2</sup> for energy storage and is able to play an important role in this process. However, the ACR's proposed procurement targets are very aggressive and could result in a large cost to customers, especially if the targets are poorly designed and the pathway to the targets is too rigid. SCE urges the Commission to ensure that the procurement targets will result in energy storage that provides maximum benefit to the system at the lowest possible cost. The Commission should allow load-serving entities ("LSEs") more flexibility to achieve the targets than proposed in the ACR, including flexibility in ownership models and procurement methods and among the storage "buckets." SCE looks forward to continuing its efforts with Staff and the Commission to establish workable rules for the procurement of viable and cost-effective energy storage.

## II.

### **EXECUTIVE SUMMARY**

In the ACR, the Commission posed ten questions relating to its storage procurement proposal and has asked parties to respond in the order they were asked. SCE's responses are as follows:

- Although the ACR proposal is intended to quickly advance and transform the energy storage market in California, such aggressive procurement will come at a high cost to California ratepayers. To prevent electricity customers from bearing excessive costs, the Commission should exercise regulatory flexibility by regularly revisiting the targets as well as the rate of procurement. Moreover, significant flexibility is needed now to broaden the scope of procurement opportunities. Allowing flexibility in ownership

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<sup>2</sup> ACR at 3.

models will best serve the unique nature of energy storage. While a mixture of third-party and utility ownership is appropriate for generation as well as behind-the-meter storage applications, distribution function storage should be owned by the utility. Appropriate procurement mechanisms will also depend on the type of storage that is procured.

Although the proposed reverse auctions may work for some forms of generation storage, Request for Offers (“RFO”)-style competitive solicitations may be preferable for other forms of storage. Indeed, the Commission should allow the same transaction methods currently applicable to procurement of new conventional and renewable generation resources. Further, the large number of potential participants could render such reverse auctions infeasible for customer-sited storage.

- Procurement of storage authorized by any Commission proceeding will advance the ACR’s goal of learning and market transformation. All recent energy storage projects should count toward any storage procurement targets; none should be excluded.
- Public Interest Energy Research (“PIER”)- and Electric Program Investment Charge (“EPIC”)-funded projects should be considered “operationally deployed” when installation is complete and the utility has recognized that the asset is “fit for duty.” CAISO certification is required for devices that participate in the CAISO market.
- The Commission should apply the lessons learned from the Renewables Portfolio Standard (“RPS”) program and target storage procurement over multiple years rather than using annual targets; utilities should be able to bank any excess for use in future years.
- Utilities should be permitted flexibility in procuring among the use-case “buckets” in order to direct investments to maximize customer value.
- Cost-effectiveness off-ramps, which are limited under the ACR straw proposal, must apply to all storage procurement in order to comply with California law.
- SCE already seeks procurement of storage in the RPS program. There is no need to coordinate the two proceedings.

- The Commission should ensure that all customers, not just the bundled customers of investor-owned utilities (“IOUs”), must pay their fair share of the costs of storage procurement in accordance with long-standing Commission policy. For distribution storage, and customer-sited storage available to all IOU customers, the costs should be charged through distribution rates similar to existing wires charges for other distribution assets and customer programs. Costs for transmission reliability storage or generation/market storage procured by the utilities should be allocated to all customers, either via the California Independent Systems Operator’s (“CAISO’s”) Transmission Access Charges (“TAC”), or through the utilities’ distribution rates, or through a mechanism like the Cost Allocation Mechanism (“CAM”), which is used to allocate above-market costs of new generation resources.
- The cost-effectiveness model results reported thus far are for illustration only and may not be used to support any finding of fact or justify any policy determination.
- A cost cap is difficult to develop and will be unnecessary if the cost-effectiveness off-ramp provisions are properly applied.
- Any rules on the confidentiality treatment of data must be consistent with current Commission rules on confidentiality and Decision (“D.”) 06-06-066.

### III.

#### **THE SUBSTANTIAL COSTS OF STORAGE PROCUREMENT WILL REQUIRE SIGNIFICANT REGULATORY FLEXIBILITY**

Question (a) posed by the ACR asks parties to “*Please comment on this proposal overall, with emphasis on the proposed procurement targets and design.*”<sup>3</sup> Although SCE recognizes that the ACR intends to advance energy storage through this expansive, aggressive procurement program, it will come with substantial costs to customers. With the exception of pumped hydro

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<sup>3</sup> ACR at 22.

and certain thermal storage projects, SCE is not aware of any other storage procurement programs of this scale. Thus, SCE urges the Commission to create a flexible program that acknowledges the varied and untested nature of storage technologies and applications, new contractual arrangements and contracting entities, and adjusts accordingly.

**A. The Goal of “Market Transformation” Is Best Achieved Through Broadening the Scope of Procurement Opportunities.**

Energy storage promises to offer sizeable value to the power system. An aggressive program to accelerate the deployment of storage beyond the existing market outcomes could unlock significant benefits if done appropriately. However, these benefits come with real and significant customer costs. Recent evaluations of the ACR’s proposed storage procurement program have estimated that it could cost up to \$3 billion dollars with uncertain net benefits for customers. SCE strongly supports the ACR’s stated intent to allow “opportunities for amendment and cost containment, should procurement of storage be more difficult or more expensive than anticipated or than current trends suggest.”<sup>4</sup> If the Commission adopts a storage procurement program, SCE urges the Commission to strive to continually balance the benefits of the program against its costs by:

- Regularly revisiting the targets as well as the pace of procurement. Assembly Bill (“AB”) 2514 requires the Commission to regularly reevaluate the determinations it makes, such as storage targets.<sup>5</sup> For example, the Commission could revisit the targets after the first round of procurement. Depending on the success or failure of that procurement, the Commission could then adjust the targets as well as the ramp rate for

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<sup>4</sup> ACR at 6.

<sup>5</sup> AB 2514 (Stats. 2010), codified at Pub. Util. Code § 2835 et seq. See Pub. Util. Code § 2836(a)(3)(“The Commission shall reevaluate the determinations made pursuant to this subdivision not less than once every three years”). SCE recognizes that the ACR proposes a general evaluation, measurement, and verification program, but believes the re-evaluation process must be set up quickly and the targets reconsidered more frequently.

future rounds of procurement. Alternatively, the targets could be re-addressed every two years as part of the Long Term Procurement Plan (“LTPP”) process.

- Slowing down or accelerating the pace of the program if it would reduce costs and deliver greater customer value. For example, the Commission could shift some of the megawatt (“MW”) target from earlier in the program to later years or from one bucket to another.
- Endeavoring to facilitate market transformation without imposing unnecessary costs due to rigid procurement constraints.

Again, the procurement of over 1300 MW of energy storage resources by 2020 could cost billions of dollars with uncertain net benefits for customers. These storage resources encompass a wide range of technologies. SCE supports the Commission-adopted definition<sup>6</sup> of an energy storage system (mirroring that of AB 2514<sup>7</sup>) as appropriately broad because it includes the wide range of storage technologies that have or are expected to quickly achieve commercial readiness. To accomplish the goal of market transformation as efficiently as possible and avoid unnecessary costs, the Commission should allow utilities significant flexibility to pursue the broadest possible range of potential storage projects. This will ensure that utilities can select and procure the most cost-effective storage.

For example, it is inappropriate to exclude pumped hydro technologies as contemplated by the ACR.<sup>8</sup> Technological maturity is only one of many barriers faced by emerging storage technologies; the remaining barriers apply equally to legacy technologies such as pumped hydro. Moreover, new advanced pumped hydro systems featuring variable speed pumps are themselves a new technology. In addition, pumped hydro storage faces its own set of barriers, including siting requirements and exceptionally challenging permitting requirements. Finally, pumped hydro is

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<sup>6</sup> D.12-08-016, Decision Adopting Proposed Framework for Analyzing Energy Storage Needs, August 2, 2012, at 27-28.

<sup>7</sup> See Pub. Util. Code § 2835(a)(1).

<sup>8</sup> ACR at 17.

one of only a few technologies that can offer power and energy at a truly “bulk” scale. Including pumped hydro in the storage procurement targets is fair and is one way to broaden the range of potential storage projects.

**B. The Commission Should Be Flexible In Considering a Variety of Ownership Models for Storage Procurement**

Although the ACR recognizes that storage has many distinct functions providing a wide variety of benefits to the grid,<sup>9</sup> the ACR contemplates procurement by only two means: (1) an auction mechanism modeled after the Renewable Auction Mechanism (“RAM”) used in the RPS program, and (2) utility ownership for a limited quantity of distribution storage. The ACR would limit utility ownership to 50% of distribution storage, provided the projects proposed for utility-owned storage (“UOS”) are also offered to third-party developers via the auction mechanism.<sup>10</sup>

SCE proposes two complementary principles that the Commission should adopt. First, policies for procurement and ownership of storage must consider not only the point of interconnection (transmission, distribution, or customer) but also the function of that storage. Function is critical in order to distinguish different types of storage for different regulatory treatment. Second, the Commission should broaden the possibilities for energy storage resources and consider many different ownership models, so long as they are practical, feasible, efficient, and consistent with the statute.

In light of these principles, SCE recommends modifying the ownership provisions outlined in the ACR straw proposal.

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<sup>9</sup> ACR at 4.

<sup>10</sup> ACR at 15-16.

**1. “Generation” or “Market Function” Storage: All Ownership Models Should Be Allowed and Encouraged.**

Some storage resources will function exclusively as “generation” or “market function” resources and will be dispatched based on the price signals from the CAISO markets. This type of storage can follow the same established policies and procedures for conventional generation resources, such as a third-party ownership model, valuation and selection based on utilities’ competitive solicitations, and existing interconnection procedures at the transmission or distribution level.

However, the Commission should allow greater flexibility in ownership models for energy storage and consider proposals for UOS.<sup>11</sup> UOS proposals should supplement, not replace, solicitations for third-party projects. UOS projects can fill opportunities that may be less feasible for third-party ownership, including storage systems integrated with existing utility assets such as utility substations or utility-owned generation facilities.<sup>12</sup> Notably, in such situations, the technology, equipment, and installation services will be procured competitively even if the ownership and operation resides with the utility.

As the storage market evolves, it may be appropriate to revisit policies for procurement of generation-type storage devices. In the short run, however, requiring all market function storage to be owned by third parties runs the risk of eliminating potentially high-value storage deployment opportunities. Accordingly, the Commission should allow and encourage UOS proposals for generation or market function storage to unlock additional storage procurement opportunities.

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<sup>11</sup> Commission policy currently favors third-party ownership for conventional generation; D.12-04-046 requires a failed solicitation for third-party proposals before utilities can propose utility-owned generation.

<sup>12</sup> One example could be thermal storage providing chilled water for inlet air chillers at a utility-owned generation facility.

**2. “Distribution Reliability” Storage: Distribution Grid Assets Should Be Owned and Operated by the Utility.**

Some storage assets will predominantly perform a distribution reliability function rather than a generation or market function. These distribution devices will be managed by a utility’s distribution operation organization for the sole purpose of meeting the reliability needs of the local circuits. This distribution reliability function should determine the regulatory treatment of these assets, especially when ownership is considered.<sup>13</sup>

Distribution assets play a distinct role within the power system compared to generation assets and thus require different regulatory treatment. Power generation and wholesale power transactions are open to competition in California and the wholesale energy markets enable sellers to be paired up with buyers. By contrast, utilities have the sole responsibility and obligation to ensure the safe and reliable delivery of power at the local level.<sup>14</sup> Accordingly, a utility is “responsible for operating its own electric distribution grid, including . . . owning, controlling, operating, managing, maintaining, planning, engineering, designing, and constructing its own electric distribution grid.”<sup>15</sup> Consequently, utilities have the right to own and operate the distribution assets that comprise the distribution grid, which will allow utilities to facilitate the deployment of distribution technologies encouraged by the Commission such as distributed generation.

Energy storage assets that provide a distribution reliability function are part of the distribution grid and are “distribution assets” that should be owned by the utility that provides distribution services. Of course, even if the utility owns and operates the storage device, the

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<sup>13</sup> Some “dual-use” storage assets located on the distribution grid may have their management and operation split between market and distribution reliability functions. If they provide a distribution reliability function for any time at all, they are part of the distribution grid and should be considered a distribution asset for ownership and procurement purposes.

<sup>14</sup> See Pub. Util. Code §399.2(1) (“It is the policy of this state, and the intent of the Legislature, to reaffirm that each electrical corporation shall continue to operate its electric distribution grid in its service territory and shall do so in a safe, reliable, efficient, and cost-effective manner”).

<sup>15</sup> See Pub. Util. Code § 399.2(2).

underlying technology, equipment, and installation services will be acquired competitively, thus advancing the desired market transformation goals.

**3. Customer-Sited, Behind-the-Meter (“BTM”) Storage: All Ownership Models Should Be Allowed and Encouraged.**

Energy storage remains a new and emerging technology. It is not clear whether an end-use customer would be willing to take the technology and performance risk by investing in a storage device. Customers may prefer that a third party or a utility own and operate such BTM storage, even if it resides on the customer premises. Because the ownership models for customer-sited storage are still untested, it is imperative that the Commission allow flexibility in ownership models and contracting methods, especially as the potential functions of BTM storage continue to grow and evolve.

**C. RAM-Type Auctions May Be Appropriate for Some Generation Storage But Are Inappropriate for Distribution Reliability or BTM Storage.**

An auction mechanism based on RAM may be appropriate for some forms of generation storage because these projects are most similar to conventional generation in size, function, and operational requirements. The relatively small number of such commercial projects may make a commercial solicitation feasible in certain cases. Generally, however, for storage procurement, the Commission should consider all effective methods for procurement of generation storage, including an RFO process or bilateral transactions. The RAM program was established for renewable generation facilities and the contracts were designed for renewable generation, not for storage technologies. Rather than presume that the RAM contract will work for new technologies and new companies entering the market, the Commission should look beyond the standard RAM contract designed for renewables.

Because SCE proposes that distribution reliability storage remain utility-owned, RAM-type auctions for distribution reliability storage are unnecessary. As noted above, competitive solicitations for distribution reliability storage equipment will still occur.

BTM storage will likely require a different procurement approach. A RAM-type solicitation may be appropriate if third parties wish to own large numbers of BTM devices. However, to the extent individual customers will own their own BTM storage device, a solicitation will be inappropriate, as (1) individual customers should not be expected to compete and negotiate for utility contracts for BTM storage, and (2) the large number of potential customers would make such a solicitation infeasible. Rather, such procurement should be managed through one or more energy storage customer programs, modeled on existing customer incentive programs such as energy efficiency (“EE”), demand response (“DR”), or the Self-Generation Incentive Program (“SGIP”).

The ACR proposes requiring UOS projects to be also offered to third-party developers via the auction mechanism. Such a concept is not workable. UOS and storage purchased through Power Purchase Agreements (“PPAs”) simply cannot be compared side-by-side in an auction. These types of projects experience different ratemaking treatment (cost-of-service versus a pass-through of contractual payments), use different cost recovery assumptions (cost amortized over useful life versus developers likely recovering their costs over the duration of the contract), and have radically different risk/reward equations. Due to these major differences, it is impractical to use the RAM to determine whether a UOS project versus third-party ownership is preferable.

#### IV.

### **ALL RECENT ENERGY STORAGE PROJECTS (INCLUDING THOSE IDENTIFIED IN THE ACR) SHOULD COUNT TOWARDS ANY PROCUREMENT TARGETS**

Question (b) asks parties to “*Comment on whether any of the projects proposed to count toward the procurement targets [should] be excluded, or any additional projects included, and on what basis.*”<sup>16</sup>

All energy storage projects should count toward any procurement targets. SCE supports the ACR in allowing SCE’s current storage procurement and projects (the 50 MW of LCR procurement, the 8 MW in the Tehachapi Wind Energy Storage Project, and the Department of Defense vehicle-to-grid electric fleet project at the Los Angeles Air Force Base)<sup>17</sup> to be counted toward its targets. These projects will help advance learning about the potential of energy storage in assisting with renewable integration and other grid benefits. In addition to the specific projects and authorized procurement mentioned in in the ACR, the following SCE projects should also count toward any targets:

- Batteries deployed as components of four energy storage “sub-projects” within SCE’s Irvine Smart Grid demonstration program;
- The 1 MW, 7.2 MWh sodium sulfur (NaS) battery deployed on Catalina Island.

The ACR focuses on achieving “market transformation” for energy storage resources through a specific procurement program. However, storage will also be procured outside of this proceeding and this program. The recent 2012 LTTP requirement in D.13-02-015 for a 50 MW storage investment is one such example. RPS contracts have also included storage resources.<sup>18</sup>

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<sup>16</sup> ACR at 22.

<sup>17</sup> ACR at 9-10.

<sup>18</sup> For example, the Commission approved an SCE contract with BrightSource Energy that included solar thermal storage. See Resolution E-4522, approving in part and denying in part Advice Letter (“AL”) 2339-E filed on April 6, 2009, AL 2339-E-A filed on May 20, 2009, AL 2339-E-B filed on June 10, 2010, AL 2339-E-C filed on November 28, 2011, and AL 2339-E-D filed on February 1, 2012, Submission of Contracts for Procurement of Renewable Energy from SCE’s 2008 Renewables Portfolio Standard Solicitation. See also Resolution E-4545, Continued on the next page

More recently, San Diego Gas & Electric Company’s General Rate Case (“GRC”) decision included authorization for storage. All of this procurement outside the AB 2514 program will help to achieve the ACR’s goal of market transformation.

In the future, storage may increase its presence in non-storage-focused proceedings, including future LTPP proceedings, future RPS procurement activities, and future GRC applications. Thus, the AB 2514 storage procurement activity is properly seen as a complement to other procurement activity and the proceeding in which the storage procurement is authorized should make no difference. SCE further recommends that any energy storage that has been solicited by a given year should count toward that year’s target, given that the targets are defined in terms of solicited storage (and not commercially operational storage).

V.

**PIER- AND EPIC-FUNDED PROJECTS ARE “OPERATIONALLY DEPLOYED”  
WHEN INSTALLED AND “FIT FOR DUTY”**

Question (c) asks parties to “*Comment on how actual operational deployment should be defined for PIER- and EPIC-funded projects potentially eligible to count toward a utility’s procurement target.*”<sup>19</sup>

Any energy storage procured as part of an EPIC or PIER project should be considered “operationally deployed” when installation is complete and the utility has recognized that the asset is “fit for duty,” meaning the energy storage system is ready for operation to serve the designated purpose of the research project. For any device that will participate in the CAISO market, CAISO certification is also required.

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approving Amended and Restated Power Purchase Agreement for Procurement of an Eligible Renewable Energy Resource Between Rice Solar Energy, LLC, and Pacific Gas and Electric Company.

<sup>19</sup> ACR at 22.

## VI.

### **UTILITIES SHOULD BE ALLOWED TO APPLY EXCESS PROCUREMENT IN ONE YEAR TO THE NEXT YEAR'S TARGET**

Question (d) asks parties to “*Comment on how any utility’s procurement that exceeds a target in one year should be addressed and considered for future procurement targets.*”<sup>20</sup>

SCE recommends that any procurement that exceeds one year’s target should be credited toward the next year’s target. Moreover, as California learned in implementing its RPS program, allowing compliance entities to meet targets over multi-year compliance periods provides important flexibility in reaching the ultimate goal.

## VII.

### **UTILITIES SHOULD CONSIDER ALL TYPES OF STORAGE BUT SHOULD HAVE THE FLEXIBILITY TO FOCUS INVESTMENT TO MAXIMIZE RATEPAYER VALUE**

Question (e) asks parties to “*Comment on whether and to what extent utilities should be permitted flexibility in procuring among the use-case ‘buckets’ (transmission, distribution, and customer-sited) of energy storage within one auction, and whether a minimum amount in each ‘bucket’ must be targeted.*”<sup>21</sup>

While it is important for utilities to consider storage projects in all three buckets, there is no guarantee that high-value projects will follow the prescribed allocation across the three buckets. Utilities should have the flexibility among the buckets to focus investments where ratepayer value is greatest. In its Final Decision, the Commission should clarify that the proposed buckets should be considered as indicative guidance only. Utilities should be free to bring additional storage projects for Commission approval as long as the projects satisfy the overall target.

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<sup>20</sup> ACR at 22.

<sup>21</sup> ACR at 22.

While parties to this proceeding have described the broad-ranging nature of storage technologies and applications, it is not yet clear where storage will offer the most significant value. Different utilities may very well identify different storage applications as having the highest value for each utility. Over time, increased learning will allow utilities and stakeholders to determine where the greatest opportunities can be found. Utilities should have the flexibility to direct investments accordingly.

### VIII.

#### **COST-EFFECTIVENESS OFF-RAMPS MUST APPLY TO ALL STORAGE**

#### **PROCUREMENT TO COMPLY WITH AB 2514**

Question (f) requests that parties “*Comment on the appropriate ‘off ramps’ for relief from procuring up to each target and what metrics should be used to evaluate the appropriateness of the off ramps.*”<sup>22</sup>

AB 2514 is clear that “all procurement of energy storage systems by a load-serving entity or local publicly owned electricity shall be cost-effective.”<sup>23</sup> Moreover, the statute only authorizes procurement targets, “if any, for the utility to procure viable and cost-effective energy storage systems.”<sup>24</sup> SCE supports the use of off-ramps, but such off-ramps must apply to all storage procurement as required by AB 2514 rather than decline by an artificial percentage rate per year. While storage has the potential to add much value to the grid, the cost of storage still remains high. The Commission must balance the goal of market transformation and the expected benefits of accelerating storage deployment against the very real and significant costs that ratepayers will bear to achieve this goal.

A competitive solicitation itself does not guarantee that a storage asset provides positive ratepayer value. The ACR recognizes this by proposing a system of “off-ramps” where utilities

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<sup>22</sup> ACR at 22.

<sup>23</sup> Pub. Util. Code § 2836.6.

<sup>24</sup> Pub. Util. Code § 2836(b)(1).

may be relieved from “a declining percentage of its procurement targets with an affirmative showing of unreasonableness of cost.”<sup>25</sup> SCE proposes that storage projects procured should be subject to a competitive evaluation, and then subject to an assessment of customer value based on a net present value methodology. Off-ramps should be available if the net cost appears to be too high, and should be triggered via a utility Advice Letter or other appropriate mechanism.

While the ACR does not define actual limits on the off-ramps, it suggests one “example” of an off-ramp limited to 40% of the initial target that then declines to 20% by 2020. SCE strongly opposes any limitations on the off-ramps as they are inconsistent with the plain language in AB 2514 requiring that any procurement targets must be for cost-effective storage. In order to comply with the legal requirements of statute, the off-ramp must apply to 100% of the target in any given year. Therefore, to the extent that “reasonable” offers or projects are unavailable in a given year, the target for that year must be reduced.

## IX.

### **STORAGE MAY BE PROCURED AS PART OF THE RPS BUT NEED NOT BE SPECIFICALLY TIED TO IT**

Question (g) asks stakeholders to “*Comment on how this proposal may be coordinated with Renewable[s] Portfolio Standard procurement plans, as set out in Public Utilities Code section 2837.*”<sup>26</sup>

SCE seeks procurement of storage in its RPS Procurement Plan. To the extent storage bids are competitive with other bids in its solicitations, SCE may procure storage through that process. The RPS is but one program that can facilitate procurement of storage. As discussed above, storage procurement can occur through the LTPP, through GRC applications, and through customer programs such as the SGIP and EPIC. It is unnecessary to tie storage procurement to

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<sup>25</sup> ACR at 19.

<sup>26</sup> ACR at 22.

any particular procurement plan. All storage procured under any of these plans should count towards the storage procurement goals.

## X.

### **TO ENSURE EQUAL TREATMENT OF BUNDLED AND UNBUNDLED CUSTOMERS, THE COMMISSION SHOULD ENSURE THAT ESP, CCA, AND CA CUSTOMERS PAY THEIR FAIR SHARE OF COSTS**

In Question (h), the Commission asks parties to “*Comment on the options presented for ESPs and CCAs to either a) be required to procure an equivalent amount of storage projects commensurate with the load they serve or b) have their customers assessed the costs of the IOU procurement of energy storage projects through a cost allocation mechanism.*”<sup>27</sup>

AB 2514 requires the Commission to determine appropriate energy storage procurements targets, if any, for LSEs other than publicly-owned utilities. These LSEs include IOUs, community choice aggregators (“CCAs”), community aggregators (“CAs”), and electric service providers (“ESPs”). The ACR proposes that ESPs and CCAs have the choice to either (1) “pay their share” through the CAM, or (2) procure their own energy storage projects “commensurate with their load share.”<sup>28</sup> The ACR proposal requires some significant revisions in order to ensure that the procurement program is fair to all customers, feasible, and compliant with statutory requirements.

Establishing individual procurement targets for each ESP, CCA, and CA would be difficult and will likely result in costly and inefficient energy storage deployment without achieving the Commission’s objectives of market transformation and technology development. Due to the nature of migrating and departing load, the annual load of ESPs, CCAs, and CAs varies from year to year. It is difficult and problematic to attempt to predict load share of each

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<sup>27</sup> ACR at 22.

<sup>28</sup> ACR at 15.

entity over the course of a planning period (in this case, through 2020). Therefore, individual targets for each ESP, CCA, and CA would have to be reassessed and re-litigated each year. Such a process would be highly inefficient and contentious. The serious implementation and administrative problems would only be exacerbated by giving ESPs and CCAs the choice to either do their own procurement or bear their share of utility's procurement costs. Further, it is not clear whether any ESPs are willing to make a long-term commitment to ensure that new energy storage devices are built, in part because their business model likely does not support such long-term investments in new assets and new technology.

Storage provides much of its value through "grid services," or the ability to improve the reliability of the grid beyond simply scheduled energy.<sup>29</sup> To provide this value, it must be procured and deployed according to the grid's needs. It may be more effective for utilities (rather than ESPs, CCAs, or CAs) to do this because utilities as grid operators can best assess this value. From a grid perspective, the non-utility-procured storage might end up being deployed in a random manner and is thus unlikely to maximize the potential grid services value of storage. Moreover, the procurement of larger quantities of storage by the utilities may allow for greater cost reductions that come with large-scale procurement.

SCE offers the following modifications to the proposal in order to ensure that customers of ESPs, CCAs, and CAs fairly contribute to paying the costs of storage that benefits all customers.

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<sup>29</sup> For example, SCE is currently studying the value of the emerging and "moveable" load from plug-in electric vehicles ("PEVs") and the ability of PEVs to assist with renewable integration and provide other grid benefits.

**A. Distribution Reliability Storage Should Be Owned and Operated by IOUs as a Component of the Distribution System and Its Costs Should Be Allocated to All Benefiting Customers (Unbundled and Bundled) Through Existing Distribution Wires Charges Along With Other Distribution Costs.**

The Commission should use existing wires charges for distribution reliability storage. Any storage device that provides a distribution reliability function is a distribution asset just like wires, substations, and other equipment. For reliability reasons, such assets should always be owned and operated by a utility. These assets provide benefits to all distribution customers, both bundled and unbundled, and the costs should be shared accordingly. Currently, costs associated with distribution are already allocated to customers of ESPs, CCAs, and CAs via distribution charges. Thus, no special or new allocation mechanism is required for energy storage with a distribution function; the costs of storage should be allocated along with other distribution system costs.

**B. BTM Storage Should Be Available to All Utility Customers and the Costs Should Be Allocated to All Customers Through Existing Distribution Charges Similar to EE, DR, or SGIP Programs.**

SCE proposes that BTM programs be available to all utility customers, bundled and unbundled, similar to existing EE, DR, and SGIP programs, and to allocate the costs of BTM storage through distribution charges modeled on existing customer-facing programs. Useful precedents for allocating such costs can be found in the EE, DR, SGIP, or California Solar Initiative (“CSI”) customer programs, which are available to all utility customers and therefore recover their costs from all utility customers through distribution charges. As the ACR notes, utilities are already facilitating the deployment of certain BTM storage devices through the Permanent Load Shift (“PLS”) program within the DR program.<sup>30</sup> While these programs benefit

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<sup>30</sup> ACR at 9.

the participating customers, they also benefit the grid as a whole as well as all customers, bundled and unbundled. Therefore, it is appropriate for all customers to share the costs. Whether BTM storage should be allocated through an existing program cost recovery mechanism or through a new program cost recovery mechanism will depend on whether BTM storage is procured under an existing program (like PLS) or under a new program.

**C. The Net Cost of Transmission or Generation/Market Function Storage Should Be Appropriately Allocated to All Benefiting Customers (Unbundled and Bundled).**

The Commission has repeatedly recognized the need for the utilities to step into a procurement agent role in order to achieve societal objectives. For example, the utilities perform this role for public purpose programs as well as for system and local area reliability requirements, especially when normal market mechanisms are unable to deliver the required new resources. Market transformation of energy storage to accommodate higher levels of renewable resources is a similar societal objective. As with new generation resources, SCE would strongly prefer liquid centralized markets for electrical capacity and ancillary services that can send adequate price signals for new energy storage deployment. However, because such markets do not yet exist, SCE is reluctantly willing to step into a procurement agent role on behalf of all of its bundled and unbundled customers to procure energy storage that performs transmission or generation/market functions that benefit all utility customers, provided that the costs are fairly and equitably allocated to all customers and not just its bundled service customers.

Both Senate Bill (“SB”) 695<sup>31</sup> and Commission policy (see D.08-09-012) have provided guidance on the appropriate allocation of costs for generation resources procured to benefit all customers. For example, the Commission has applied the “bundled customer indifference principle, whereby bundled customers should be no worse off, or should they be any better off as

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<sup>31</sup> Pub. Util. Code § 365.1(c)(2)(A).

a result of customers choosing alternative energy suppliers (ESP, CCA, POU [publicly-owned utility] or customer generation).”<sup>32</sup>

The Commission can adopt one of several options for appropriate cost allocation. If the storage is deemed to provide exclusively transmission reliability functions, the entire cost of such storage could be assessed to all customers via the CAISO’s TAC.<sup>33</sup> The Commission could also authorize the cost recovery of such transmission or generation/market function energy storage via the distribution charge based on the societal benefit value of energy storage, which will ensure that all distribution customers pay their share of energy storage costs. Alternatively, the Commission could utilize an approach similar to the CAM for new generation resources. The CAM assures that to the extent the utility as the procurement agent is required to pay the developer more money than what the asset is worth in the marketplace, all customers – bundled and unbundled – would share this above-market cost. Customers who pay these above-market costs would also receive their share of the benefits.<sup>34</sup> An allocation process that follows the same general principles as CAM can be developed to consider the unique aspects of energy storage deployment and operating costs.

This discussion presents several alternatives for allocation methods for different types of storage. While not all storage will have the same allocation approach, it is essential that the Commission offer clear guidance to ensure that, for all types of storage, costs are appropriately allocated to all benefitting customers.

To facilitate the equal treatment of all customers, SCE proposes the following Finding of Fact for the Commission in its Final Decision on storage targets:

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<sup>32</sup> D.08-09-012 at 10.

<sup>33</sup> As noted in the ACR, storage may perform transmission functions, including “system reliability.” ACR at 13 (citing R.10-12-007, Energy Storage Framework Staff Proposal (Final), April 3, 2012). The Federal Energy Regulatory Commission (“FERC”) has previously offered (limited) endorsement of storage classified as transmission. *See Western Grid Development, LLC*, 130 FERC ¶61,056 (2010), 2010 FERC LEXIS 109, at \*43. To implement such a concept, the IOUs and the CPUC will need to work closely with the CAISO.

<sup>34</sup> Recently, the Commission contemplated modification to the CAM and correctly determined that modifications are not necessary at this time. *See* D.13-02-015 [LTPP Track 1].

- It is reasonable to expect that all of the energy storage resources procured in accordance with the targets identified in this Decision will be needed to meet system or local area reliability needs for the benefit of all customers in each distribution service territory.

## XI.

### **CONSISTENT WITH THE ADMINISTRATIVE LAW JUDGE’S (“ALJ’S”) RULING, THE COST-EFFECTIVENESS MODEL RESULTS MAY NOT BE USED TO SUPPORT ANY FINDING OF FACT OR JUSTIFY ANY POLICY DETERMINATION**

Question (i) requests that parties “*Comment on how the preliminary results of the cost-effectiveness models should be applied to the question of setting procurement targets.*”<sup>35</sup>

The cost-effectiveness models considered thus far in this proceeding are preliminary and illustrative, and may not be used to support any Finding of Fact. As ALJ Yip-Kikugawa stated in the Administrative Law Judge’s Ruling Denying Request for Evidentiary Hearings, issued February 28, 2013, “the models under review are for illustration only.”<sup>36</sup> The input assumptions for the cost-effectiveness studies were not formally evaluated or reviewed by stakeholders in the proceeding. When SCE requested hearings on the topic, SCE specifically raised concerns regarding the assumptions and the accuracy of the results produced by the models. ALJ Yip-Kikugawa’s Ruling explicitly stated:

... while the cost-effective methodology may inform the Commission whether to pursue certain use cases, application of the model to specific energy storage projects is beyond the scope of this proceeding. As such, any impact of these projects on rates is premature.<sup>37</sup>

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<sup>35</sup> ACR at 22.

<sup>36</sup> Administrative Law Judge’s Ruling Denying Request for Evidentiary Hearings, Feb. 28, 2013, at 2 (*available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M049/K309/49309854.PDF>*).

<sup>37</sup> *Id.* (emphasis supplied).

The results of the cost-effectiveness models are useful to show the conditions under which storage *may* be highly valuable to ratepayers. However, without hearings, these illustrative results may not be relied upon to support any finding of fact or to justify policy determinations for procurement targets. Should the Commission intend to use modeling results to support a finding of fact of cost-effectiveness, SCE would again request hearings on the cost-effectiveness analyses.

## XII.

### **A COST CAP IS DIFFICULT TO DEVELOP AND UNNECESSARY IF THE OFF-RAMP PROVISIONS ARE PROPERLY APPLIED**

Question (j) asks, “*Based on the preliminary results, should the utilities set a cost cap for offers to be submitted in the 2014 auction? If yes, what should the cap be and how should the auction be structured to incorporate the cap?*”<sup>38</sup>

SCE does not support implementation of a cost cap for individual offers. Given the diverse array of storage technologies, applications, and benefits, it would be impossible to develop a single number that would appropriately apply to all storage, or even all storage within a given category of storage. Additionally, identifying a specific dollar figure as “reasonable” could have unintended consequences that reduce the competitiveness of offers. Rather than implement a cost cap, reasonableness of cost should be ensured through the “off-ramp” mechanism and flexibility provisions. With appropriate provisions that allow utilities flexibility to ensure they accomplish the goal of market transformation efficiently and effectively, and with off-ramps that ensure a utility will not be required to procure any storage at unreasonable cost, the Commission can assure ratepayer value without implementing a cost cap covering each individual project.

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<sup>38</sup> ACR at 22.

### **XIII.**

#### **DATA CONFIDENTIALITY PROVISIONS SHOULD BE CONSISTENT WITH**

#### **D.06-06-066 AND COMMISSION PRECEDENT**

The ACR suggests that “[a]ll data related to all bids, both successful and unsuccessful ... be considered non-confidential, except for cost data.<sup>39</sup> This is not consistent with the treatment of other energy procurement-related data. Any rules addressing the confidentiality of bid data in competitive solicitations must be consistent with D.06-06-066 and the confidentiality matrix contained therein.<sup>40</sup> The Commission has carefully developed its procurement data confidentiality rules pursuant to SB 1488 in a dedicated confidentiality proceeding. Those rules should not be revised on an ad hoc basis in separate, stand-alone proceedings.

### **XIV.**

#### **CONCLUSION**

SCE urges the Commission to ensure that procurement targets, if any, require storage procurement to be cost-effective in accordance with the statutory requirements of AB 2514. SCE

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<sup>39</sup> ACR at 20.

<sup>40</sup> See D.06-06-066, Interim Opinion Implementing Senate Bill No. 1488, Relating to Confidentiality of Electric Procurement Data Submitted to the Commission, June 29, 2006, and Appendix 1 (IOU Matrix).

looks forward to continuing its work with the Commission and urges it to revise its procurement target proposal in accordance with the changes described herein.

Respectfully submitted,

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