BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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

COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) ON ASSIGNED COMMISSIONER'S RULING PROPOSING STORAGE PROCUREMENT TARGETS AND MECHANISMS

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I. INTRODUCTION

In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission (the "Commission") and the assigned Commissioner's Ruling Proposing Storage Procurement Targets And Mechanisms and Noticing All-Party Meeting (the "Ruling" or "ACR"), dated June 10, 2013, San Diego Gas & Electric Company ("SDG&E") hereby submits the following opening comments addressing issues and questions identified in the Ruling.

The Ruling sets out a straw proposal with potential procurement targets for load-serving entities to procure viable and cost-effective energy storage systems from among emerging storage technologies, as well as companion policies to encourage the cost-effective deployment of energy storage, consistent with Assembly Bill (AB) 2514.[1] Parties are invited to comment on any or all aspects of this proposal, including several specific questions included in this Ruling.

II. COMMENTS

1. General

SDG&E welcomes the opportunity to comment on the ACR in the Energy Storage proceeding. SDG&E applauds the tremendous progress and work conducted by the Commission

[1] AB 2514 is codified at Pub. Util. Code § 2835 et seq.

in the Energy Storage proceeding. SDG&E strongly supports the deployment of energy storage systems and has examined them in different areas. SDG&E recognizes the potential benefits of energy storage technology including, but not limited to, potential deferment of distribution capacity upgrades, peak shaving and integration of higher levels of intermittent renewable energy while maintaining or improving overall grid reliability.

As recognized by the ACR, SDG&E has proposed energy storage in its General Rate Case (GRC) and has examined it as part of other programs. Further, SDG&E has already begun to integrate storage into its system. These projects will help clarify how the overlapping benefits of energy storage can be maximized to improve storage cost effectiveness. At the June 28, 2013 Energy Storage Cost Effectiveness workshop, it was indicated that much of the potential benefits are theoretical in nature and that we need projects put in place to demonstrate those benefits. The journey that we have started must continue. The issue is how to best increase the amount of energy storage while addressing when, where, why and how much.

Energy storage is a means to an end, not an end unto itself. It is a tool in the toolbox to solve multiple problems currently facing the electric grid. There will be instances when energy storage is the best solution to solve a problem but it needs to be examined against other methods in order to make that determination. It should not be examined in a vacuum. As the comments explain below, energy storage does not lend itself to rigid procurement targets. However, if the Commission chooses procurement targets, flexibility on how and when to procure energy storage system is a critical factor to comply with any proposed targets by 2020.

An additional critical factor is the cost to achieve any proposed procurement target. In many situations, the current and expected cost of energy storage is not competitive as compared to other solutions. As energy storage devices and management of those devices continue to

mature, storage devices could become the best solution more often, but the timeframe is not clear. The ACR lists numerous programs and avenues which are bringing the cost of energy storage devices down. The ACR recognizes efforts under EPIC, PIER, SGIP and permanent load shifting currently under way. It further recognizes specific utility efforts related to energy storage such as the Tehachapi Wind Energy Storage Project, molten salt storage projects, the Borrego Springs microgrid project and distribution system storage projects.

Additionally, SDG&E has concerns with the appropriateness of the Reverse Auction Mechanism (RAM). The RAM program used for energy and fuel procurement is not easily translated into energy storage procurement. As demonstrated in the cost effectiveness analysis there are multiple uses for storage and multiple storage technologies with different limitations; there is not a homogeneous product that lends itself to an auction format. One key distinction is that storage is not a generation resource, it is a tool to store energy made by a generation and discharged at a later time with some roundtrip energy losses. In addition, procurement of energy storage systems for distribution level applications, especially for capacity and reliability purposes, merits different methodologies than those for wholesale markets.

SDG&E is concerned that, under a RAM, SDG&E will be required to procure energy storage devices which provide less value because all benefit attributes cannot be considered in an auction. The proposed method may achieve only some of the goals articulated in the ACR, limiting the utility from demonstrating multiple uses while increasing customer rates more than necessary. SDG&E should be allowed to continue to examine energy storage systems and propose them as solutions when appropriate based on maximizing their fit with system needs, and providing multiple value streams. Rigid procurement targets that use RAM for procurement

are not the best method for an efficient and effective deployment of energy storage systems in California at this time.

2. SDG&E Supports the Commission's Work to Move Energy Storage Forward, But The Proposed Procurement Schedule Should Allow For Flexibility

As previously indicated, SDG&E strongly supports the deployment of energy storage systems in its service territory and throughout the state. SDG&E believes the procurement targets as proposed in the ACR do not provide the best approach for achieving an effective and efficient deployment of energy storage systems. The proposed procurement targets are not appropriate for several reasons. First, the timeline and level of the targets are arbitrary. The ruling lacks justification for the suggested targets. Technical analysis from the Energy Storage proceeding does not justify the proposed level of procurement targets.

Second, if the targets are adopted, they should be related to a specific need or solve a specific problem. There is no examination as to what level of distribution level, transmission level and customer level energy storage would be beneficial to each utility or local area within a utility's service area. The targets also do not take into account locational need. Any procurement target should be based on an overall target for energy storage systems instead of rigid targets for transmission, distribution and customer on a rigid timeline

SDG&E recommends the following changes to the proposed targets in the ACR to allow the desired flexibility for an efficient and effective deployment of energy storage systems:

- In the event that procurement targets are adopted, these targets should be for 2020 with no interim targets. Energy storage systems are not mature enough to have specific interim targets prior to 2020. For example, the proposed target for 2014 will be very difficult to comply with based on the experience gained to date from

existing pilots at the distribution level. While SDG&E has had success with current products, there is considerable work left to be done by the industry in different areas (batteries, electronics, communications, software integration, packaging, etc.). Energy storage technology is not yet plug-and-play ready and does not support the proposed schedule. Energy storage system costs have not come down as quickly as the industry had expected. SDG&E continues working aggressively with energy storage suppliers to remove the barriers, but a target for 2014 will put energy storage systems and related technology in a less positive light than otherwise would occur.

- If near-term targets are set the timeline should try to take advantage of existing Investment Tax Credit program for energy storage systems. Since the existing program expires in 2016, the flexibility to bank early purchases for later targets should be allowed.
- IOUs should have more control as to when and where storage is added to the system. Operational needs, costs and benefits should be driving the deployment of energy storage systems and the timing of those needs. Those needs will differ for transmission, distribution and customer uses. Specific targets for customer, distribution and transmission will likely not align with maximizing the value of this promising technology. Any procurement targets, in the event that procurement targets are selected, should allow for flexibility between buckets to address the most urgent needs regardless of whether it is transmission or distribution level. Deployment prioritization should be based on system needs and the emerging values.

3. Ownership and Procurement of Energy Storage Systems

The ACR recommends the RAM model used for the procurement of renewable energy generation also be used as the platform for the procurement of energy storage systems. SDG&E respectfully disagrees with this proposal. Although the RAM's procedural mechanisms are appropriate for a more standardized and commercialized technology, like renewable generation, such mechanisms may not be appropriate for an emerging technology like energy storage.

The RAM has been successful for renewable energy procurement, but it was not implemented until the IOUs had years of renewable procurement under their belts. This allowed IOUs and the CPUC to develop RAM rules that made sense for the technologies involved.

SDG&E respectfully recommends the following frameworks for ownership and the procurement of energy storage systems:

- SDG&E recommends that customer owned storage does not need a procurement target unless the evolving market model proves insufficient.
- IOUs should be able to own up to 100% of distribution level storage by procuring energy storage directly via a competitive request for proposals
- IOUs should be able to own up to 100% of transmission level storage by procuring energy storage directly via a competitive request for proposals

A. Customer Level Energy Storage Systems

RAM is not an appropriate framework for the procurement of customer level energy storage systems. There is already a market for customer level energy storage systems where unbundled pricing reflects demand and TOU signals. Examples of a market for customer owned

or third party PPAs already exists.[2] Clearly there is no need to set procurement targets unless the customer market fails to develop.

Since there are already companies competing in this space, the Commission should give time for the market to develop by implementing a supportive unbundled cost-based rate design for residential customers.

B. Additional Customer Level Considerations: Plug-in Electric Vehicles and Distributed Energy Storage

A significant and growing source of energy storage and associated potential benefits not discussed in this ACR is the energy storage found in plug-in electric vehicles and the energy storage features inherent in vehicle design today:

- Demand flexibility – demand can be encouraged and discouraged at various times of the day, with variable rates of demand (rate of charge or kW demanded), on every day of the week
- Location flexibility – demand is mobile and can occur at variable locations (for example, home, workplace, publicly accessible locations, and more), with the quantity of demand at each location tailored to meet capacity needs

In the energy storage context, an environment should be created where plug-in electric vehicle (EV) charging demand can be encouraged or discouraged with ubiquitous availability of low cost charging equipment and with unbundled rates. This flexible demand offers benefits that

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[2] Stem is currently deploying energy storage to assist C&I customers in avoiding demand charges. http://www.stem.com/solution
Demand Energy is another organization with a similar business model. http://www.greentechmedia.com/articles/read/Demand-Energys-Intelligent-Storage-Mixes-Batteries-Analytics-and-Software
Solar City is deploying energy storage in residences. http://www.greentechmedia.com/articles/read/Lesson-Learned-From-SolarCitys-First-Home-Energy-Storage-Installs

increase with the number of electric vehicles at a fraction of the incremental price of other energy storage options:

- Opportunistic demand – Taking available energy at any time of day, every day
- Increased integration of renewable generation – Plug-in electric vehicles have the flexibility to charge when must-take renewable energy is plentiful and would otherwise be curtailed or have negative value
- Load and system optimization – Energy consumed at times of day when capacity is plentiful reduces the likelihood of that same demand occurring at less optimal times (for example, charging a vehicle at home in the early evening hours when system demand is highest)
- Lower transportation costs – Customer vehicle charging can take place when energy is at its lowest cost, saving customers fuel costs.

This creates overarching benefits to EV customers, utility operating efficiency, renewable energy and enables all Californians to enjoy the improved environment and longer term benefits in rates with improved utility system utilization.

These benefits can be realized today, without any major incremental cost to purchase this storage, by implementing appropriate rate design. In the future, when the stored energy in the vehicle can be accessed (i.e., when auto manufacturers enable two way energy features in the vehicles) the energy storage benefits of the EV will be even greater.

However, with the prohibitions placed on utility ownership of electric vehicle service equipment today per AFV OIR D.11-07-029, achieving these near and long term benefits of full scale efficient grid-integrated charging will be challenging, slow to materialize and less effective.

C. Distribution Level Energy Storage Systems

The IOUs should be able to own up to 100% of distribution sited storage. For distribution applications the utility has the responsibility for planning and operating the distribution system[3]. The Commission also described the criteria for when a third party DER creates T&D benefits.[4]

Some of the potential applications for distribution level energy storage systems are to improve reliability, provide system capacity, distribution capacity deferral and renewables smoothing. Based on the nature of these applications, the energy provided by the energy storage systems must be delivered in a timely fashion, in specific locations, with sub-second control and with a high level of certainty.

RAM is not appropriate for the procurement of energy storage systems for distribution level energy storage systems primarily due to location of projects and guarantee of operational performance.

Non-performance of third party energy storage systems could lead to significant reliability issues. These attributes must be evaluated in detail when bids are reviewed and do not yet lend themselves to a simplified evaluation process.

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[3] D.99-10-065 pg. 16, "System planning raises the question of who should be responsible for system planning, and the future role of the UDC. Since PUC §330 requires the distribution system continue to be owned and maintained by the "state's electrical corporations," and regulated by the CPUC, the responsibility for distribution system planning should remain with the electrical corporations regulated by the CPUC."
D.03-02-068, pg. 13 "The utilities indicate that if the utility is responsible for the safety, reliability and operation of the distribution system, it must have control over the planning and operation of the system. We reaffirm this today."

[4] D.03-02-068, pg. 18,"SDG&E outlines the criteria distributed generation must meet to allow the utility to defer capacity additions and avoid future cost. The distributed generation must be located where the utility's planning studies identify substations and feeder circuits where capacity needs will not be met by existing facilities, given the forccasted load growth. The unit must be installed and operational in time for the utility to avoid or delay expansion or modification. Distributed generation must provide sufficient capacity to accommodate SDG&E's planning needs. Finally, distributed generation must provide appropriate physical assurance to ensure a real load reduction on the facilities where expansion is deferred. There is potential that distributed generation installed to serve an onsite use will also provide some distribution system benefit, however, unless it meets the four planning criteria describe by SDG&E, such benefits will be incidental in nature."

SDG&E has conducted competitive RFPs for third party solutions at specific locations. However, no third party was willing to guarantee contractually that their DER device would not fail or that they would drop the equivalent amount of load necessary to eliminate the reliability impacts of the resultant overload and equipment failure.

In addition, in order to develop multiple value streams for energy storage, there has to be coordination in the use of the asset that is more easily accomplished if owned and operated by the utility. Until energy storage projects are in place and it is better understand how to maximize the use of the asset to provide multiple uses such voltage regulation and distribution capacity, the utility needs the flexibility to change an modify the operation of the storage that can be difficult in a contractual situation.

Instead of a RAM framework for distribution level energy storage systems, SDG&E recommends using competitive request for proposals framework, as it has done historically, with the IOUs owning 100% of the systems. This will allow the utility to fully analyze the benefits of each project instead of trying to create a simplified RAM-like evaluation methodology that will not capture all the benefits.

Therefore, requiring third party ownership of distribution storage is inappropriate.

D. Additional Distribution System Consideration

The ACR requires that Distribution Planning evaluate energy storage as a planning alternative. The Commission has already ruled on this issue.[5] As a result of that ruling SDG&E created a formal process for evaluating DER as an alternative to traditional distribution system capacity additions which it applies today.

E. Transmission Level Energy Storage Systems

The IOUs should be able to own up to 100% of transmission sited storage. As a practical matter, locating transmission level energy storage systems at existing transmission substations will be less costly than connecting these systems at other transmission locations. For safety, reliability, maintenance and liability reasons, SDG&E is unlikely to permit third party ownership of facilities within SDG&E transmission substations. Accordingly, for energy storage systems located at substations, a competitive request for proposals framework is the most appropriate approach.

For all other cases of transmission level energy storage systems RAM could possibly be an alternative, with the IOU being eligible to participate. IOU participation is essential to avoid situations where a transmission level energy storage system is determined to be beneficial, but no other parties participate.

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[5] D.03-02-068, pg. 17 "The key utility responsibility is system planning. System planning must consider distributed generation alternatives (both on the grid side and customer side of the meter) to wires upgrades as part of the normal planning process. Non-utility solutions should be actively solicited through the planning process. The level of utility control/physical assurance should be weighed in evaluating/selecting options.

We do not wish to re-create a BRPU-type process for determining whether wires or distributed generation should be used to satisfy demand for electricity in distribution constrained areas. As part of each utility's planning process, each utility shall determine when a distribution system upgrade is necessary to ensure reliability and safe operation of the system. As a part of this determination, the utilities shall determine if a grid-side distributed generation unit could be a reasonable means of providing the electricity demanded in the identified constrained area."

F. Additional Transmission System Considerations

Procurement targets for energy storage systems located on the transmission system must be tied to specific needs: either generation-related needs subject to CPUC-jurisdictional cost recovery mechanisms, or transmission-related needs subject to FERC-jurisdictional cost recovery mechanisms. For the latter category of energy storage systems, the need and any associated procurement targets should be identified in the CAISO's annual Transmission Planning Process to provide a foundation for demonstrating that the energy storage system costs are just and reasonable and recoverable through transmission rates.

The CAISO's annual Transmission Planning Process comprehensively assesses the transmission system from a reliability, economic and public policy perspective. The process identifies transmission system needs – including those necessary to achieve the state's environmental policies – and then approves those transmission upgrades that are determined to be cost-effective relative to other alternatives for meeting the identified need. The process allows utilities, third party merchants, and other entities to propose cost effective solutions for meeting the identified needs. SDG&E believes the Commission must closely coordinate this rulemaking with the CAISO's Transmission Planning Process to ensure that any proposed storage procurement targets for the benefit of the transmission system map to the identified needs of the transmission system.

4. Residential Rate Reform is Critical for Customers to Capture the Value of Energy Storage and Achieve a Sustainable Mass Deployment of Energy Storage Systems

One of the main barriers to residential customers being able to capture the value of energy storage systems is the existing rate design. Commercial and industrial (C&I) customers have unbundled rate design which sends price signals related to demand and TOU that begin to

speak to the types of value that storage could provide. While they were not designed with the specific attributes and cost causation that reflects the accurate value of storage they do have prices related to demand and TOU that are aspects which storage can address. However, the existing residential rate structure is not based on unbundling of services and cost causation. These rates are fixed and tied to energy consumption ignoring demand and capacity requirements required by residential customers. As a result, storing energy for later use provides no incentive for residential customers under the existing rate structure. In addition, the round trip efficiency losses between the charge event and discharge event add additional cost to the value proposition of energy storage system with none of the benefits.

On the other hand, C&I rate design is not only based on energy consumption but also based on demand and capacity charges. This framework allows for C&I customers to monetize various types of values offered by energy storage systems.

SDG&E respectfully recommends adopting the rate design proposals in R.12-06-013 for unbundling of services and cost causation for residential rates in order to facilitate the deployment of energy storage systems among all customers.

5. Specific ACR Questions

a. ***Please comment on this proposal overall, with emphasis on the proposed procurement targets and design.***

See previous comments

b. ***Comment on whether any of the projects proposed to count toward the procurement targets be excluded, or any additional projects included, and on what basis.***

The ACR proposes two of SDG&E's current energy storage initiatives be counted towards SDG&E's proposed energy storage procurement targets (ACR page 10):

- *"The Borrego Springs microgrid project, undertaken as part of SDG&E's smart grid deployment plan."*
- *"Up to 44.6 MW of distribution system storage recently approved as part of Sempra's General Rate Case (GRC) application."*

The ACR incorrectly identifies the authorization of energy storage investments in D-13-05-010 as a number of megawatts (MW) of capacity. The decision instead authorizes a $26 million capital investment in 2012, to be tracked in a one-way balancing account through the post test-year period, as specified in the Findings of Fact nos. 71-73:

71. Phase two of the energy storage rulemaking is currently underway, and the major issue to be decided in that proceeding is whether procurement targets for energy storage are appropriate, and if so, how much should be procured.

72. Due to the energy storage projects that are underway, and the ongoing energy storage rulemaking, it is reasonable to authorize $26 million in capital expenditure funding of SDG&E's energy projects in 2012.

73. It is reasonable to require SDG&E to establish a one-way balancing account for energy storage projects to ensure that the authorized funds are spent on such projects in test year 2012 and during the PTY period.

c. ***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.***

Operational deployment for PIER and EPIC-funded projects should be based on the same characteristics used to account for commercial deployment of energy storage systems in the procurement targets. As indicated in the ACR, energy storage procurement policy should be guided by three purposes:

- The optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of transmission and distribution upgrade investments,
- The integration of renewable energy; and
- The reduction of greenhouse gas emissions per California's goals.

If a PIER or EPIC funded project remains in operation after the RD&D stage, it should be counted towards the utility procurement target.

d. ***Comment on how any utility's procurement that exceeds a target in one year should be addressed and considered for future procurement targets.***

Any procurement in one year that exceeds the target should be applied to the following years' procurement target. IOUs should have the flexibility to bank any excess procurement for later years especially in light of changes in federal tax incentives.

e. ***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.***

As previously indicated, if the Commission decides to adopt procurement targets they should be based on an overall target for energy storage systems instead of specific targets for transmission, distribution and customer levels. IOUs should have more flexibility as to when and where the storage is added to the system. Operational and market needs should drive the deployment of energy storage systems. Any procurement targets should allow for flexibility as to where the storage is situated. This prioritization should be based on system need and the emerging value.

There should be no minimum per bucket.

f. ***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.***

As previous indicated, SDG&E recommends no interim targets and only a procurement target for 2020. This approach will allow for achieving the flexibility required for an efficient and effective deployment of energy storage systems.

Further, any procurement should be value based and not simply the lowest cost. For example, taking into account local capacity requirements. Given rate increases, especially those to SDG&E ratepayers, a cost containment mechanism is necessary as well. IOU's should be relieved from their procurement targets if costs prove to be high and cost-ineffective. In addition, the lack of a competitive number of bids should exempt an IOU from having to procure from that particular solicitation.

g. ***Comment on how this proposal may be coordinated with Renewable Portfolio Standard procurement plans, as set out in Public Utilities Code section 2837.***

Energy storage may or may not qualify for the RPS program, as a result, the solicitations proposed under this ACR will occur outside of the RPS program, and will not be explicitly included in an IOU's RPS Procurement Plan. However, there are two ways in which this new energy storage initiative will link to the RPS Plan and RPS program itself. The first link is that an IOU may receive bids that include energy storage technologies in response to a solicitation held pursuant to its RPS Procurement Plan. If the IOU subsequently executes a contract with one or more of these facilities, although the timing of these contract executions may not coincide with the solicitation schedule ultimately adopted under this proceeding, the capacity of these facilities will meet the requirements for this initiative and must therefore count towards the ultimately adopted energy storage targets.

The second link is that, as mentioned in the ACR, one of the goals of the new energy storage targets is to facilitate the integration of renewable energy onto the grid. This is clearly an

expense of the RPS program, and therefore must be included in the cost containment cap that the Commission is developing for the RPS program. This will affect the dollars available for an IOU to spend on the solicitations authorized by its most recent RPS Procurement Plan, and must be considered when developing the RPS Procurement Plans.

h. ***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.***

SDG&E preference would be to own and operate the energy storage systems for ESPs and CCAs customers and assess the costs through a cost allocation mechanism on a non-bypassable basis. If ESPs and CCAs procure their own energy storage requirements, IOUs should have full control to operate and dispatch the energy storage systems and customers of ESPs/CCA should pay for any such costs that were incurred on their behalf prior to the decision to take ESP or CCA service. Should SDG&E invest in energy storage to defer distribution capacity or system capacity investment, ESPs and CCAs customers need to be assessed the costs, since they are benefiting from the cost deferral and reliability benefits.

i. ***Comment on how the preliminary results of the cost-effectiveness models should be applied to the question of setting procurement targets.***

The Commission has expended considerable effort to assess existing cost-effectiveness models. Significant progress has been achieved by the Commission, IOUs and interested third parties on this topic. However, substantial additional work is required in this area to understand the impact of the preliminary results of the cost-effective models to procurement targets. It is premature to use the results of cost-effectiveness models for setting any procurement targets at this point. SDG&E respectfully recommends that the Commission continue working with IOUs and interested parties on the assessment of cost-effectiveness models and the implications to the proposed targets.

j. ***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?***

SDG&E is recommending no procurement targets for 2014.

Any energy storage auction should be structured to incorporate some form of cost cap. While it is not clear at this time what type of cap would be appropriate for energy storage, the cap that is ultimately adopted should first and foremost be designed to protect ratepayers. Accordingly, in furtherance of California Public Utilities Code 399.15(c) et seq., any cap should be set at a level that prevents disproportionate rate impacts. In addition, similar to the cost containment mechanism for renewable energy procurement currently being contemplated under R.11-05-005, the energy storage cost cap could be set either on a contract basis ($/MWh), or on an overall program basis ($/IOU).

III. CONCLUSION

SDG&E applauds the Commission for the tremendous progress achieved to date in the Energy Storage proceeding and the leadership towards fostering a market transformation for this critical technology for the electric grid. SDG&E strongly supports the deployment of energy storage systems in our service territory and throughout the state. However, energy storage systems are not plug-and-play ready. In summary, SDG&E respectfully recommends the following aspects for consideration by the Commission:

- Flexibility – There should be no procurement targets prior to 2020, especially not one for 2014. IOUs should be able to bank storage that is procured earlier which would allow parties to take advantage of investment tax credits. The quantity of storage should not be pigeon holed into fixed uses – distribution, customer and transmission. Let system needs and value dictate priority.

- Ownership – The customer storage market is already evolving. Proper rate design for the residential sector is essential to creating a large market. Distribution storage needs to be owned by IOUs to be fully effective. The utility should own transmission storage at the substation and utility ownership should be an option for other locations.
- Rate Design – For storage to have value to the residential customer, rates need to be unbundled and based on cost causation. This will allow storage to contribute value to residential customers and allow storage companies to expand.

Respectfully submitted,

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