BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Application of San Diego Gas & Electric Company (U902M) for Approval of its Energy Storage Procurement Framework and Program	)	Application No. 14-02-006 (Filed February 28, 2014)
Application of Pacific Gas and Electric Company (U39E) for Authorization to Procure Energy Storage Systems during the 2014 Biennial Procurement Period Pursuant to Decision 13-10-040.)	)	Application 14-02-007 (Filed February 28, 2014)
Application of Southern California Edison Company (U338E) for Approval of Its 2014 Energy Storage Procurement Plan.	)	Application 14-02-009 (Filed February 28, 2014)

PROTEST OF THE GREEN POWER INSTITUTE ON UTILITY ENERGY STORAGE PROCUREMENT PROPOSALS

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PROTEST OF THE GREEN POWER INSTITUTE

The Green Power Institute (GPI) protests the utility energy storage procurement proposals, submitted on February 28, 2014, for the reasons discussed in detail below.

Our major points are:

- We urge the Commission to reaffirm its guidance from D.13-10-040 that the utilities must "draw on" the consistent evaluation protocol in bid evaluation and selection, rather than relegate this document only to reporting
- The Commission should also require that interconnection requirements for storage bids are consistent across each utility. As is, PG&E's requirements are relaxed and SCE's are more stringent. We urge the Commission to require the IOUs to mirror PG&E's more relaxed approach because, as a new market, storage developers shouldn't be obligated to expend major sums on interconnection before they gain any insight into their chances of obtaining a PPA
- We also strongly urge the Commission to maintain its requirement for another utility filing before the RFO documents "go live." The Commission should ensure that all required changes are implemented by the utilities, and this will require an additional filing to verify that such changes are implemented appropriately

I. Discussion

GPI reserves the right to comment on additional issues in the applications in reply comments. GPI was able to review the applications and prepared testimony of each IOU but did not have time to review the PPAs and RFO documents that were also supplied. We will attempt to provide comments on those documents in our reply.

A. General comments

D.13-10-040 ("the Decision") was issued after a large amount of work by the Commission and parties on the issue of cost-effectiveness. The Decision states (p. 55):

> AB 2514 requires that energy storage targets and procurements must be "viable and cost-effective." To that end, we have devoted a great deal of attention and effort into formulating a cost-effectiveness approach that would be sufficient to meet Section 2836.2(d).
>
> We agree with parties that any actual finding of cost-effectiveness should only be done in a utility application for approval of storage contracts or rate-based additions, where there is a specific project and actual project inputs.

The Commission, due to concerns expressed by a number of parties, deferred ruling on the issue of cost-effectiveness in the Decision and pushed this key component of the procurement process to a "consistent evaluation protocol" to be worked out between the energy division and the IOUs, for "benchmarking and general reporting purposes." Due to concerns expressed by the Clean Coalition and other parties about the opaqueness of such a process carried out between the IOUs and Energy Division only, the final decision included the following statement (id.): "Energy Division staff may hold a public workshop to discuss the consistent evaluation protocol with stakeholders before the IOUs file their procurement applications."

Energy Division did hold this workshop, and we applaud them for this. Unfortunately, the consistent evaluation protocol (CEP) that resulted from the dialogue between the IOUs and Energy Division, presented largely as a *fait accompli* to the other parties, seems to be far more limited in its planned use by the IOUs than the Commission originally intended, judging by IOU statements discussed further below. This is a double whammy against both party involvement in this key aspect of the proceeding (determining cost-effectiveness), and in assuring a consistent methodology for evaluating cost-effectiveness across each of the IOUs. If the Commission allows the IOU attitude toward the use of the CEP to stand, each IOU will have an overly generous discretion to select bids. Standardizing this process was

the rationale behind the Commission requiring the CEP. Appendix A of the Decision[1] makes it clear that IOUs must "draw on" the CEP as well as their own discretionary evaluation methodologies in evaluating and selecting bids. We urge the Commission to reaffirm this guidance. We discuss specific IOU statements further below.

B. Comments on each application

a. PG&E

Deferral of transmission and distribution upgrades

We applaud PG&E for taking seriously the ability of storage projects to defer both transmission and distribution grid upgrades. PG&E states (p. 8): "Based on a preliminary identification, PG&E will conduct further studies, such as power flow analysis, voltage analysis, etc., to validate whether an energy storage project could actually defer the planned transmission investment."

With respect to deferring distribution grid upgrades, PGE states (p.8):

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[1] The Decision required the following with respect to utility descriptions of bid evaluations relating to cost (D.13-10-040, Appendix A, section 3.d):

- A proposed methodology for an analysis that evaluates bids on cost and fit submitted in a solicitation that draws on:
  - The full range of benefits and costs identified in the use case framework developed and the EPRI and DNV KEMA reports submitted in this proceeding;
  - An optional utility-specific proprietary evaluation protocol; and
  - An evaluation protocol consistent across the IOUs that includes a consistent set of assumptions and methods for valuing storage benefits, such as market services and avoided costs, and estimating project costs that allow adjustments for utility-specific factors (such as location, portfolio, cost of capital, etc.) and utility -specific modeling tools based outputs affecting valuation as appropriate to provide a consistent basis for comparison across utilities, bids, and use cases. …

> PG&E will examine its internal distribution capacity/reliability investment plan and will attempt to identify planned distribution project(s) where an energy storage system might provide distribution grid optimization benefits to improve reliability and/or to defer distribution capacity investment. If such a distribution project is identified, PG&E will conduct further studies, such as load forecast, load profile examination, load flow simulation, voltage analysis, etc., to validate whether an energy storage project could defer the planned distribution investment. If so, then the necessary operational requirements that would be required of an energy storage system, such as location, size, duration, etc., will be included in the RFO solicitation package to give distribution-level storage projects an opportunity to address that need in the RFO solicitation.

We urge PG&E to supply more practical parameters and guidance for developers submitting bids. As with interconnection maps for RAM and the IOU PV programs, it would be very useful for storage developers to have online maps that show where they are likely to enjoy a transmission or distribution grid upgrade deferral "credit" in bid evaluation. Otherwise, PG&E's proposal doesn't help developers design their projects or select the most suitable sites.

PG&E's request for clarifications

PG&E seeks to extend the procurement deferral timeline from three months to 12 months (Application, pp. 18-19). We agree with PG&E that three months is likely too short, but 12 months is far too long. We recommend instead that PG&E and other IOUs be granted four months from the submission of offers to determine if the IOU needs to defer procurement for that cycle.

PG&E also requests a full year to complete contracts after responses are submitted to an RFO (Application, p. 19). Again, this is far too long. PG&E's request is based on the Commission's requirement to submit a report on each procurement within 12 months. PG&E states that this requires completion of contracts within eight months, with four months required to write the report (by implication). We agree that four months to write the report is reasonable and we also agree with the Commission that eight months is sufficient to consider, negotiate and complete contracts.

Intermediate compliance filing

PG&E requests that no intermediate compliance filing be required between the present applications and the final RFO (p. 20). We disagree due to the fact that this is a very important new procurement process and it is key that the Commission and stakeholders have another opportunity to review IOU materials before they "go live." We have seen in recent years a trend toward exponentially increasing complexity in IOU procurement contracts. For example, PG&E's feed-in tariff PPA under AB 1613 was a mere 21 pages long, with attachments. The proposed energy storage PPA in this RFO is over 140 pages long. Much of this increase in contract length may be justified, but such an increase in complexity surely warrants substantial scrutiny by the Commission and stakeholders. Accordingly, we feel strongly that the intermediate compliance filing requirement should remain.

Biogas should not count as storage

PG&E argues in its prepared testimony (PG&E Prepared Testimony, p. 2-3) that 2.52 MW of existing dairy biogas contracts should count toward its procurement target. This is a very strained interpretation of energy storage, biogas is never referred to as "energy storage" by the industry, there is no indication that the Commission intended biogas to count as energy storage in previous decisions, and the Commission should accordingly reject PG&E's argument. Moreover, biogas projects fail to meet the section 2835(a) definition of "energy storage system" that PG&E itself cites in its testimony. Last, the Legislature recently created a biomass procurement program under SB 1122, indicating that it knows how to single out and incentivize biomass when it wants to. Biogas is a type of biomass. AB 2514 singled out energy storage and does not mention biogas or biomass, and nor does the Commission do so in its interpretation of the legislation. The Commission should reject PG&E's argument to include biogas as a type of energy storage.

Location

PG&E argues (PG&E testimony, pp. 3-6) that any project connected to the CAISO grid,

even in neighboring states, should count toward PG&E's procurement requirements for existing projects. GPI feels that projects should, however, be located in-state in order to keep as much of the economic benefit of this program in-state. California ratepayers are footing the bill for any energy storage procurement and those same ratepayers should enjoy the economic benefits of this new program.

For new projects, PG&E expresses a preference for projects located in its service territory, but doesn't express any guidance regarding eligibility of out of state projects. PG&E also states (Prepared testimony, pp. 5-12): "For an Offer in a location that is projected to contribute to PG&E's satisfaction of a Local Capacity Requirement, the Offer's capacity may be evaluated at a premium relative to the value of similarly-flexible capacity that satisfies only system needs." We urge PG&E to change "may" to "shall." Specificity and certainty are the watchwords when it comes to well-designed RFOs.

Interconnection requirements

GPI supports PG&E's relaxed interconnection requirements for new storage projects. PG&E states (p.) that it will not require that a storage project be in the interconnection queue or have applied for interconnection at the time of bid. PG&E will, however, require that the project apply for interconnection ___. We support this approach because interconnection is often a very high bar to clear and various deadlines in the interconnection process require that a project move ahead in the interconnection process or be kicked out of the queue. Accordingly, it is now necessary for projects to have reasonable visibility regarding their chances of obtaining a PPA, or to have a PPA in hand, before they expend the time and resources required to obtain interconnection. This argument holds true also for renewable energy projects, but the Commission and the utilities have insisted in recent years that these projects be through the Fast Track initial review or have completed a Phase I study before they can bid into the various PPA programs. We urge the IOUs and the Commission to reconsider these interconnection requirements in light of the IOU proposals in this energy storage proceeding.

We note also that SCE's interconnection requirements are more stringent than PG&E's and

the IOUs should have similar requirements in this important feature of any project's development.

Evaluation methodology

GPI urges PG&E and the other IOUs to be as specific and quantitative as possible in their evaluation methodology. In becoming familiar with SCE's Local Capacity Resource RFO in late 2012 (GPI attorney Hunt submitted a bid to this RFO for an LA-based client for a 2 MW storage facility in SCE territory), GPI found that SCE's evaluation process for storage was opaque and complex. Some quantitative factors were offered, but numerous qualitative factors were also described in SCE's RFO, which don't provide very much guidance for bidders. We urge the Commission to require as much detail and quantification in the IOU storage evaluation methodologies as is feasible.

Consistent Evaluation Protocol

As discussed above, the CEP was meant to be used by the IOUs to evaluate and select bids, as is made clear by the language of Appendix A to the Decision. However, PG&E states (PG&E Prepared Testimony, p. 5-17):

> Nothing in the CEP is to be construed or implied as restricting or invalidating the assumptions, models, tools, and analysis each IOU might choose to value, rank, or shortlist the physical and financial merits of offers or bids from the IOUs' energy storage solicitations (Offers) that might be received to comply and fulfill each IOU's energy storage needs at the transmission, distribution, and customer levels. As stated in the Decision, the CEP is only for "benchmarking and general reporting purposes" and is not a replacement for the IOUs' individual, proprietary, evaluation protocols to be used to evaluate the cost and benefits or other quantitative or qualitative aspects of Offers resulting from IOU energy storage solicitations.

SCE plans to use the CEP in an even weaker manner (discussed below), for reporting only. GPI is very concerned about these statements from PG&E and similar statements by the other IOUs. It seems to GPI that the IOUs essentially plan to go through the motions with the CEP and then use their own evaluation protocols to evaluate and select bids. This is

contrary to the clear intent of the Commission in D.13-10-040, which requires the IOUs to "draw on" the CEP in evaluating and selecting bids, and we strongly urge the Commission to reaffirm its intent that the CEP be used proactively and consistently by the IOUs in evaluating and selecting bids. The Decision contravenes PG&E's stated intent with respect to the CEP. Appendix A, reproduced in full below as Attachment A to our protest, to the Decision states (emphasis added):

> The procurement application shall include, at a minimum:
>
> - A proposed methodology for an analysis that evaluates bids on cost and fit submitted in a solicitation that draws on:
>   - The full range of benefits and costs identified in the use case framework developed and the EPRI and DNV KEMA reports submitted in this proceeding;[2]
>   - An optional utility-specific proprietary evaluation protocol; and
>   - An evaluation protocol consistent across the IOUs that includes a consistent set of assumptions and methods for valuing storage benefits, such as market services and avoided costs, and estimating project costs that allow adjustments for utility-specific factors (such as location, portfolio, cost of capital, etc.) and utility-specific modeling tools based outputs affecting valuation as appropriate to provide a consistent basis for comparison across utilities, bids, and use cases. The consistent evaluation protocol shall be developed by the IOUs through joint consultation between the IOUs and the Commission Staff prior to the filing of the application and referenced in that application

In sum, the Commission directed that PG&E and the other IOUs "shall" "draw on" the CEP to evaluate bids.

GPI feels that the flexibility mechanisms (deferrals and shifting between buckets, in particular) contained in the Decision were already too generous given the clear intent of the Legislature in spurring market transformation of the energy storage market. Under the Decision's flexibility mechanisms, very little energy storage must come online before 2024 – a full decade from now. This is because of the ability to defer procurement until later periods and to shift procurement between buckets with little or no showing by the IOUs.

[2] The EPRI and DNV KEMA energy storage cost-effectiveness reports are available here: http://www.cpuc.ca.gov/PUC/energy/electric/storage.htm

PG&E's statements regarding use of the CEP, if allowed by the Commission to pass without correction, further weaken the energy storage procurement framework and risk undermining it entirely in terms of having any market transformative effects. Again, we strongly urge the Commission to be proactive and ensure that the IOUs use a strong CEP to evaluate and select bids, at the very least as a required complement to the IOUs own preferred evaluation methodologies, as described in Appendix A to the Decision.

C. SCE

GPI supports SCE's suggestion that it may go beyond the initial mandate for energy storage procurement and will aim to transform the energy storage market. This is the intent behind AB 2514 and D.13-10-040 and we are happy to see that SCE endorses this goal also (SCE Application, p. 4): "For the 2014 storage procurement cycle, SCE intends to meet the Commission-set targets of 90 megawatts ("MW") of storage. SCE may procure additional storage depending on the response received in the 2014 Energy Storage RFO. In its RFO, SCE intends to support projects across a variety of end-uses to encourage market transformation."

We are also very pleased to see SCE tout the potential for storage to defer distribution or transmission system upgrades (SCE Prepared Testimony, pp. 10-11).

Should 50 MW of storage from SCE's LCR RFO count toward the energy storage targets?

SCE argues (SCE Prepared Testimony, pp. 28-29) that the 50 MW that SCE is required to procure under its Local Capacity Requirements RFO program in the LA Basin should count toward the 2014 energy storage procurement mandate in this proceeding, even though no contracts have been approved by the Commission yet. GPI disagrees. SCE acknowledges that including the 50 MW from the LCR RFO in the 2014 procurement target for SCE in this proceeding is outside the letter of D.13-10-040 (id.):

> While the Storage Decision states that "the IOUs may count storage projects authorized in other Commission proceedings towards meeting their interim procurement targets once the contract for that project is approved by the Commission (emphasis added)," the unique timing associated with SCE's LCR RFO makes an exception to this requirement appropriate. SCE has already obtained storage project offers through its LCR RFO, and SCE will execute storage contracts before the start of its storage-specific solicitation in December 2014.

GPI supports the Commission's original formulation and urges the Commission to reaffirm this direction. The amount of storage SCE will actually procure from its LCR RFO 2013 solicitation is entirely uncertain at this time. From talking to developers, GPI has not learned of any storage projects that were shortlisted. This is not comprehensive information, of course, but it indicates the uncertainty of SCE's procurement of storage in this new eight-year LCR RFO. We urge the Commission to reaffirm that no LCR RFO storage may count against SCE's energy storage procurement mandates until contracts have been approved by the Commission.

Consistent Evaluation Protocol

SCE makes similar statements as PG&E with respect to the use of the CEP. For example (SCE Prepared Testimony, p. 34): "The utility's proprietary process will be used for offer selection, while the CEP will be used only for reporting." As with our statements above in the section on PG&E's application, we strongly urge the Commission to reaffirm its clear guidance in Appendix A of the Decision that the IOUs must "draw on" the CEP in evaluating and selecting bids – and not merely use the CEP for reporting.

Interconnection requirements

SCE states (SCE Prepared Testimony, p.):

> SCE's 2014 Energy Storage RFO will require projects that export power to the grid to provide a completed Independent Study Process ("ISP") System Impact Study, Fast Track Response Letter, or Phase I Queue Cluster interconnection study by the submission of a final offer. Projects that are seeking full deliverability in order to provide Resource Adequacy must enter the Queue Cluster beginning April 1, 2014

and ending April 30, 2014 in order to obtain an interconnection study in time for final offers.

SCE doesn't specify any interconnection requirements for submission of an initial offer, but the final offer requirements impose similar obligations on the initial offer, by implication. GPI notes that PG&E is not planning on the same interconnection requirements as SCE, so we urge the IOUs to standardize their interconnection requirements for the upcoming RFO. As noted above, GPI agrees with PG&E's more relaxed interconnection requirements. We also highlight the fact that SCE did not require any interconnection studies or applications for eligibility to bid into the Dec. 2013 LCR RFO. Given that the energy storage market is still a new market, and developers are justifiably loathe or unable to expend large sums of money on interconnection before they have any insight into their chances of obtaining a PPA, we urge SCE to impose similarly relaxed interconnection requirements in the upcoming energy storage RFO. SCE's approach may be appropriate for the 2016 storage RFO, but not for this first round RFO in 2014.

Last, SCE's application should be amended to allow for obtaining deliverability under CAISO's new Distributed Generation Deliverability (DGD) process that was created in 2013. This process allows developers to obtain deliverability for distribution-interconnected energy and storage projects at no fee and far faster than is possible under the default process. The outcome is exactly the same, however, because projects are granted full capacity deliverability status under either process.

D. SDG&E

GPI applauds SDG&E's decision to hold RFOs for distribution and transmission storage projects despite its assertion that it will be in compliance with the 2014 procurement targets using the existing flexibility mechanisms in D.13-10-040 (SDG&E Application, p. 4).

Evaluation methodology

SDG&E appears to contravene a requirement from the Decision with respect to its proposed evaluation methodology. SDG&E states (Testimony AI-5): "Any other benefits or costs that are identified and able to be suitably quantified (such as those included in the Electric Power Research Institute ("EPRI") and DNV KEMA Energy & Sustainability ("DNV KEMA") use-case frameworks) may be used in the NMV calculation." However, the Commission requires that all items considered in the EPRI and DNV KEMA reports be used, so "may" in the SDG&E statement just quoted should be "shall."

As with PG&E and SCE, Infanzon states (SDG&E Testimony, AI-11) that the CEP "will be used as a tool by the CPUC to benchmark and compare bids and general reporting purposes but will not necessarily be used as the basis for bid selection by SDG&E." The Decision states, however, that IOUs must "draw upon" the CEP in evaluating bids. Accordingly, SDG&E must use the CEP in some manner to evaluate and select bids.

II. Conclusion

For the reasons described above, GPI recommends that the Commission make a number of changes to the IOU applications and require an additional filing to be submitted before the RFOs are released in December of 2014.

Dated: April 7, 2014, at Berkeley, California.
Respectfully Submitted,

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Attachment A: Commission requirements for IOU storage procurement applications

From D.13-10-040, Appendix A, section 3.d:

On or before March 1, 2014, and biennially thereafter in 2016, 2018, and 2020, each IOU shall file a procurement application containing proposals for energy storage procurement, as needed to address specifics applicable to different grid domains, use cases or ownership scenario, with any proposed modifications based on data and experiences from previous procurement cycles.

The procurement application shall include, at a minimum:

- An updated table with estimates for biennial procurement targets for each storage grid domain from current year to 2020 adjusted to account for:
    - any offsets expected to be claimed by the IOU as credits, against the procurement targets applicable at the time of the application for storage resources procured pursuant to Commission authorizations in any proceeding in accordance with the guidelines in Section 2.d above (resulting in a reduction in target),
    - any deferments of procurement targets authorized by the Commission in prior procurement cycles as discussed in the "Deferment" section below (resulting in an increase in target),
    - any excess procurement in the prior procurement cycle or shortfall resulting from contract rejections, contract cancellations, or less than expected installations of customer-owned projects since the last procurement cycle (resulting in a reduction or increase in target), and
    - any shifting of MW between the transmission and distribution grid domains planned by the IOU (resulting in an increase or a reduction of target in those domains);
- Reference to 1) needs study by the California Independent System Operator for the IOU's system, local, and flexible needs, if available, or 2) upgrade needs identified in the IOU's transmission or distribution planning studies;
- A list of all applicable rules and statutes impacting the procurement plan;

- An explanation of the type of storage resources and the associated MW quantities the IOU intends to procure, categorized by grid domains and use cases;
- A detailed description of how the IOU intends to procure resources specifying the structure of any RFO or alternative procurement processes and related timelines;
- Operational requirements, to be applied either to all projects or separately with respect to transmission, distribution, and customer-sited storage. The requirements shall include, at a minimum:
    - Grid optimization services specific to the operational needs of the load-serving entity, such as any service intended to contribute to reliability needs, or defer transmission and distribution upgrade investments;
    - Attributes or services intended to integrate renewable energy;
    - Greenhouse gas emissions-reducing attributes, such as permanent load shifting away from greenhouse gas emitting fossil generation or reduction of demand for peak electrical generation using fossil fuels;
- A proposed methodology for an analysis that evaluates bids on cost and fit submitted in a solicitation that draws on:
    - The full range of benefits and costs identified in the use case framework developed and the EPRI and DNV KEMA reports submitted in this proceeding;[3]
    - An optional utility-specific proprietary evaluation protocol; and
    - An evaluation protocol consistent across the IOUs that includes a consistent set of assumptions and methods for valuing storage benefits, such as market services and avoided costs, and estimating project costs that allow adjustments for utility-specific factors (such as location, portfolio, cost of capital, etc.) and utility-specific modeling tools based outputs affecting valuation as appropriate to provide a consistent basis for comparison across utilities, bids, and use cases. The consistent evaluation protocol shall be developed by the IOUs through joint consultation between the IOUs and the Commission Staff prior to the filing of the application and referenced in that application;

[3] The EPRI and DNV KEMA energy storage cost-effectiveness reports are available here: http://www.cpuc.ca.gov/PUC/energy/electric/storage.htm.

- Proposed storage equipment/power/services purchase agreements for successful bids involving third party-owned or –aggregated projects;
- A report on all storage resources procured to date in all Commission proceedings. In the report, the IOUs are directed to identify the type of storage technology, the capacity of the projects (in MW & MWh), the location of the project (city and zip code level if public), the proceeding in which it is procured, and the procurement mechanism (e.g., RFO, RAM, SGIP, etc.), applicable storage grid domain, status of the project (CPUC approval, construction stage), estimated online date, expected operational life, primary and secondary applications of the project, technology manufacturer and project owner & operator. Energy Division may provide additional direction on changes in the required content and format of the reports as needed; and
- Request for cost-recovery authorization as appropriate.

Following Commission review and approval of the energy storage procurement application, the IOUs shall then hold a competitive solicitation by issuing an RFO for energy storage resources.