



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

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Second Application of Pacific Gas and Electric
Company for Approval of Agreements Resulting
from Its 2014-2015 Energy Storage Solicitation
and Related Cost Recovery (U 39 E)

**Application 16-04-024
(Filed April 29, 2016)**

**OPENING BRIEF OF
PACIFIC GAS AND ELECTRIC COMPANY (U 39 E)**

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SUMMARY OF RECOMMENDATIONS

Pacific Gas and Electric Company recommends that the California Public Utilities Commission issue a decision:

- Approving the four megawatt behind-the-meter Agreement between Pacific Gas and Electric Company and Stem Energy Northern California LLC;
- Approving Pacific Gas and Electric Company's cost recovery proposal for the Agreement, including application of the power charge indifference adjustment to the generation/market participation Agreement for its five-year life; and
- Determining that the Agreement contributes four megawatts toward Pacific Gas and Electric Company's energy storage targets adopted in Decision 13-10-040.

If the California Public Utilities Commission were to reject the Agreement, then Pacific Gas and Electric Company proposes that it be directed to add the resulting four megawatt shortfall in meeting its 2014 energy storage targets to its storage procurement targets for the 2016 energy storage request for offers.

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Pursuant to the schedule set forth in the July 25, 2016 *Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judge* (Scoping Memo), Pacific Gas and Electric Company (PG&E) provides its opening brief in this proceeding.

In its *Second Application of Pacific Gas and Electric Company for Approval of Agreements Resulting from Its 2014-2015 Energy Storage Solicitation and Related Cost Recovery*, PG&E is requesting that the California Public Utilities Commission (Commission) approve a behind-the-meter (BTM) energy storage agreement (Agreement) between PG&E and Stem Energy Northern California LLC (Stem) under which Stem will provide PG&E with four megawatts (MW) of resource adequacy (RA) and flexible RA on a monthly basis, making use of an aggregation of BTM storage devices. The function of the Agreement is generation/market participation.

The Agreement was signed as a result of PG&E's 2014-2015 energy storage request for offers (2014 ES RFO). Earlier, in application (A.) 15-12-004, PG&E requested approval of several other storage agreements resulting from the 2014 ES RFO. The Commission addressed that application in decision (D.) 16-09-004.

More specifically, in this application PG&E requests that the Commission:

- Approve the Agreement;
- Approve PG&E's proposed cost recovery for the costs PG&E incurs under the Agreement, including incorporation of the Agreement into PG&E's power charge indifference adjustment (PCIA) calculations; and
- Determine that the Agreement counts four MW toward PG&E's energy storage targets adopted by the Commission in the D.13-10-040.

For the reasons set forth in this brief as well as in its application and supporting prepared testimony, Exhibits (Ex.) PG&E-1 and PG&E-1C,¹ PG&E respectfully requests that the Commission issue a decision:

- Approving the Agreement;
- Approving PG&E's recovery proposal for the Agreement, including application of the PCIA to the generation/market participation Agreement for its five-year life; and
- Determining that the Agreement contributes four MW toward PG&E's energy storage targets adopted by the Commission in the D.13-10-040.

As the Scoping Memo notes, if the Commission were to reject the Agreement, then PG&E would fall short of its 2014 energy storage targets.² PG&E proposes that in that case, the Commission direct PG&E to add the resulting shortfall to PG&E's storage procurement targets for the 2016 ES RFO.³

I. BACKGROUND

On April 29, 2016, PG&E filed its application and served a notice of availability of its opening testimony. On June 2, 2016, several parties filed comments on or protests to PG&E's application, and on June 10, 2016, PG&E filed a reply to the protests and comments. The assigned administrative law judge (ALJ) held a telephonic prehearing conference on July 18, 2016.

¹ Respectively, the public and confidential versions of PG&E's prepared testimony, entitled *Pacific Gas and Electric Company: Results of 2014 Energy Storage Solicitation Second Prepared Testimony*.

² Scoping Memo, p. 8.

³ As discussed below, the resulting shortfall would be four MW.

The Scoping Memo was issued on July 25, 2016.

Consistent with the schedule adopted in the Scoping Memo, PG&E served Ex. PG&E-2 on August 2, 2016, updating PG&E's progress toward achievement of its 2014 energy storage targets.

On September 12, the assigned ALJ conducted a conference call to identify exhibits. Later that day, the assigned ALJ distributed an exhibit list for the proceeding. As indicated by the Scoping Memo, the next procedural steps are the filing of concurrent opening briefs on September 23, 2016, and concurrent reply briefs on October 7, 2016.

II. DISCUSSION

The Scoping Memo summarizes the issues to be addressed in this proceeding:

1. Was the solicitation conducted in a fair and competitive manner?
2. In selecting winners, did PG&E apply the evaluation methodologies approved in D.14-10-045 correctly?
3. Were any deviations from pro forma contracts approved in D.14-10-045 warranted?
4. Are the prices, terms, and conditions resulting from the solicitation reasonable?
5. Does the contract promote safe and reliable operation and maintenance of the energy storage systems?
6. Should the contract be approved?
7. Is the contract properly categorized by function?
8. If the PG&E contract is not approved, PG&E will be short of meeting its 2014 energy storage goal. What should occur to remedy this shortfall?⁴

Other parties have set forth their positions in the comments and protests they filed in response to PG&E's application. PG&E received protests to its application from the Office of Ratepayer Advocates (ORA) and Marin Clean Energy and Sonoma Clean Power Authority

⁴ Scoping Memo, p. 3.

(Community Choice Aggregation (CCA) Parties). PG&E has also received a response to its application from the Green Power Institute (GPI).

Several of the issues raised by parties in their protests or comments have already been resolved by the Scoping Memo. The proposal to consolidate this proceeding with A.15-12-004, made by the CCA Parties and GPI, is addressed in the Scoping Memo, which determines that consolidation is not appropriate.⁵ While the Scoping Memo does not explicitly discuss ORA's argument that PG&E should not be allowed to file this second application in connection with its 2014 ES RFO, the Scoping Memo does not identify this as an issue to be addressed.

The Scoping Memo also addresses the Power Charge Indifference Adjustment (PCIA) issues raised by the CCA Parties, determining that PCIA issues will not be revisited in this proceeding, and stating that A.15-12-004 will establish the manner by which energy storage costs for contracts eligible for PCIA treatment will be integrated into the PCIA methodology.⁶

In the sections below, this opening brief discusses, in order, the issues identified by the Scoping Memo, and in the course of that discussion addresses the issues and questions raised by ORA and GPI that remain within the scope of the proceeding.

In summary, PG&E respectfully requests that the Commission approve the Agreement and the associated proposed cost recovery, and determine that the Agreement counts four MW toward PG&E's 2014 storage targets. The Agreement will contribute to the diversity of the contracts already executed out of the 2014 ES RFO. This BTM energy storage agreement will enable PG&E to learn, on a commercial basis, about how this type of resource will operate and provide value in the CAISO market.

A. PG&E's Solicitation Was Conducted In A Fair And Competitive Manner

PG&E's 2014 ES RFO process was also addressed in A.15-12-004. In this application, PG&E describes the process again, and discusses the extension of the process which resulted in

⁵ Scoping Memo, p. 2.

⁶ Scoping Memo, pp. 2-3.

the Agreement presented for approval here. No party raised concerns with the RFO process. As described in PG&E's prepared testimony and summarized below, it was fair and competitive.

PG&E's 2014 ES RFO process is discussed in detail in Chapter 2 of Ex. PG&E-1, PG&E's prepared testimony in this proceeding. PG&E's 2014 ES RFO was structured and developed to comply with the RFO requirements in the D.14-10-045 (Application Decision).

Consistent with PG&E's 2014 ES RFO plan as approved by the Application Decision, PG&E issued its 2014 ES RFO on December 1, 2014 to solicit offers for at least 74 MW of distribution- and transmission-connected energy storage projects.⁷ Obtaining this amount of storage projects through the RFO would enable PG&E to meet its 2014 storage target.⁸ PG&E also indicated that it was open to customer-connected projects in the RFO.⁹

Per the Application Decision, PG&E included details on use cases in its RFO issuance documents. PG&E also included safety as a new qualitative criterion. As a condition of remaining on PG&E's shortlist for ES RFO negotiations, participants were required to provide information about their storage technology and the safety history of the participant and/or contractors (if known). Shortlisted participants were required to submit a preliminary safety plan as a condition of contract execution.¹⁰

PG&E conducted extensive outreach to potential participants as part of the ES RFO. Draft 2014 ES RFO solicitation documents were published as part of A.14-02-007,¹¹ where PG&E had sought approval of its 2014 ES RFO framework.

In response to the 2014 ES RFO, PG&E received over 230 offers with over 700 variations from a number of participants.¹²

⁷ Ex. PG&E-1, Hahm, p. 2-1.

⁸ Ex. PG&E-1, Hahm, p. 2-1.

⁹ Ex. PG&E-1, Hahm, p. 2-1.

¹⁰ Ex. PG&E-1, Hahm, p. 2-2.

¹¹ Ex. PG&E-1, Hahm, pp. 2-2 – 2-3.

¹² Ex. PG&E-1, Hahm, p. 2-4.

On April 24, 2015, PG&E notified ES RFO participants via e-mail of their status regarding the shortlist, and followed up with all shortlisted participants the following week with phone calls to ensure receipt of the shortlist notification and to answer any clarifying questions.¹³

PG&E shortlisted several projects. The shortlisted projects represented all three grid domains: transmission-connected projects, distribution-connected projects, and BTM-connected projects.¹⁴

However, the process diverged for the BTM projects. After discussions with the parties for BTM projects, PG&E found that the initial agreement structure had to be modified. As such, PG&E reached out to *all* participants who submitted BTM project offers to submit updated offers under a new proposed agreement structure: a capacity agreement with an energy settlement component.¹⁵ Based on the updated BTM offers, PG&E developed a revised, increased list of shortlisted counterparties for BTM projects. PG&E continued negotiations, reducing the BTM shortlist somewhat.¹⁶

PG&E included its Procurement Review Group (PRG) throughout the ES RFO process. PG&E provided the PRG with an update specifically on BTM projects on February 23, 2016.¹⁷

As required by the Application Decision, engaged an Independent Evaluator (IE) from the Commission's approved list of IEs for the ES RFO. The IE for this solicitation was Merrimack Consulting, with Wayne Oliver as the IE representative. PG&E worked closely with the IE throughout the entire 2014 ES RFO process, beginning in May 2014. The IE was extensively involved in the review of the RFO documentation before the RFO was issued. The IE also participated in all of the 2014 ES RFO-related PRG meetings. The updated IE Report

¹³ Ex. PG&E-1, Hahm, p. 2-4.

¹⁴ Ex. PG&E-1, Hahm, p. 2-6.

¹⁵ Ex. PG&E-1, Hahm, p. 2-4.

¹⁶ Ex. PG&E-1, Hahm, p. 2-6.

¹⁷ Ex. PG&E-1, Hahm, pp. 2-7 – 2-8.

(relative to what PG&E provided in A.15-12-004) covers the 2014 ES RFO through the execution of the Agreement PG&E is seeking approval of here.¹⁸

In sum, PG&E's 2014 solicitation, including those aspects relating directly to BTM resources and PG&E's entering into the Agreement with Stem, were fair and competitive.

B. PG&E Correctly Applied The Evaluation Methodologies Approved In D.14-10-045

PG&E's 2014 ES RFO evaluation process for BTM storage offers was substantially the same as was done for the storage offers submitted in A.15-12-004.¹⁹ One difference was that for BTM storage, the assumption was that it would be operated to maximize the value of offsetting retail rates.²⁰

No party raised concerns with PG&E's application of the evaluation methodologies. As described in PG&E's prepared testimony and summarized below, PG&E's evaluations were fair and competitive, and consistent with D.14-10-045.

The evaluation process involved a coordinated effort among several PG&E employees, outside consultants, and the IE. Prior to opening the offers, PG&E reviewed the evaluation methodology with its PRG and the IE.²¹

Evaluation of the offers included the ten quantitative and qualitative criteria listed below, and described in more detail in Chapter 4 of PG&E's opening testimony. For each of the criteria, a team of subject matter experts was formed to perform the evaluation. The teams met periodically to review progress and exchange information. The time from offer opening to initial shortlisting was approximately ten weeks.²²

¹⁸ Ex. PG&E-1, Hahm, p. 2-8. (The public version of the updated IE Report is Appendix C to Ex. PG&E-1, while the confidential version is Appendix C to Ex. PG&E-1C.)

¹⁹ PG&E-1, Gavelis, p. 4-1.

²⁰ PG&E-1, Gavelis, p. 4-1.

²¹ PG&E-1, Gavelis, p. 4-1.

²² PG&E-1, Gavelis, p. 4-2.

PG&E evaluated each conforming offer or offer variation in terms of the following ten criteria:

EVALUATION CRITERIA, SCORING UNIT, AND APPLICATION

| <i>Line No.</i> | <i>Evaluation Criteria</i> | <i>Scoring Unit</i> | <i>Application</i> |
|-----------------|----------------------------|---------------------------|----------------------------|
| 1 | Net Market Value | \$/kW | Shortlist Development |
| 2 | Portfolio Adjusted Value | \$/kW | Shortlist Development |
| 3 | Project Viability | +, 0, - | Shortlist Development |
| 4 | Technology Diversity | Relational ^(a) | Shortlist Development |
| 5 | Term and COD Diversity | Relational ^(a) | Shortlist Development |
| 6 | Contract Modifications | +, 0, - | Shortlist Development |
| 7 | Supplier Diversity | Required ^(b) | Post Shortlist Development |
| 8 | Counterparty Concentration | Relational ^(a) | Shortlist Development |
| 9 | Credit | +, 0, - | Post Shortlist Development |
| 10 | Safety | Required ^(b) | Post Shortlist Development |

(a) Qualitative adjustments were considered with other factors to move some slightly lower-valued projects into the shortlist.

(b) Additional requirements were imposed on participants to be added to the shortlist, or will be required during performance of the contract.

The first item in the table, net market value (NMV), compares an offer’s market value to its costs, reflecting the offer’s pricing and resource-specific characteristics. To calculate an offer’s NMV, PG&E quantified the market value of the applicable energy component, and a capacity component. For BTM storage, an energy equivalent settlement was substituted for market revenue from discharged energy.²³

In terms of non-energy costs used to calculate an offer’s NMV, PG&E considered all of the offer’s costs besides the cost of the energy used to charge the storage device. For BTM storage facilities, those are the variable and fixed costs PG&E is to pay under the contracts.²⁴

After determining the NMV for an offer, PG&E calculated the portfolio adjusted value (PAV) to derive the value of that offer from the perspective of PG&E’s portfolio, not just from the market perspective. PAV could include adjustments to the NMV based on: (1) location; (2) transmission network upgrade costs; (3) transmission and distribution investment deferral value; (4) benefits due to increased efficiency for fossil generation; and (5) renewable generation

²³ PG&E-1, Gavelis, p. 4-2.

²⁴ PG&E-1, Gavelis, p. 4-3.

curtailment support. All of the BTM offers were in PG&E's service territory,²⁵ and none required transmission network upgrades.²⁶ Due to their expected response to retail rate schedules rather than CAISO market prices, BTM offers were attributed a cost to system efficiency.²⁷ Finally, because PG&E will not be the scheduling coordinator for BTM resources, and therefore cannot be certain that the storage would be operated to reduce renewable generation curtailment, no value was applied for this variable.²⁸

Turning to the Consistent Evaluation Protocol (CEP), in its opening testimony PG&E provided the results of the CEP for each of the shortlisted offers consistent with the requirements of the Application Decision. The CEP is not meant to directly correlate to PG&E-specific evaluation or shortlisting criteria, and therefore, the outcome under the CEP differs from the outcome under the PG&E-specific evaluation protocol. To obtain the CEP results, PG&E's evaluations were re-run for shortlisted offers using the same costs and operating characteristics from the offers, replacing market prices with standardized, public data, and excluding certain non-quantifiable adjustments such as project viability and project diversity.²⁹

C. The Contract Form Used For The BTM Generation/Market Participation Transaction Is Warranted

In its application for approval of its 2014 ES RFO process, PG&E did not present a specific pro forma contract for BTM storage resources serving a generation/market participation function. With respect to generation/market participation resources, PG&E was more focused on those connected at the transmission and distribution levels. Therefore, there was no pro forma contract for the Commission to approve in D.14-10-045.

PG&E did provide a pro forma agreement for BTM storage resources serving this function when PG&E issued the RFO. However, as discussed above, after discussion with

²⁵ Ex. PG&E-1, Gavelis, p. 4-6.

²⁶ Ex. PG&E-1, Gavelis, p. 4-6.

²⁷ Ex. PG&E-1, Gavelis, p. 4-7.

²⁸ Ex. PG&E-1, Gavelis, p. 4-7.

²⁹ Ex. PG&E-1, Gavelis, p. 4-9.

potential counterparties offering BTM storage projects in the RFO, PG&E determined that the agreement structure needed to be modified to address BTM-specific considerations.³⁰

The outcome of the this BTM-specific part of the RFO process, as exemplified by the Agreement, is an “RA only” agreement, where PG&E pays the counterparty a Capacity Payment less an Energy Settlement Amount.³¹

No party objected to this contract form. It provides a good framework for obtaining a BTM resource serving a generation/market participation function. Therefore, the Commission should determine that PG&E appropriately employed it in the RFO process.

D. The Prices, Terms, And Conditions In The Agreement Are Reasonable

The prices, terms, and conditions in the Agreement are reasonable. ORA argues that the Agreement should not be approved, and GPI raises possible concerns regarding the agreements. Neither ORA’s nor GPI’s concerns justify rejecting the Agreement, or concluding that its terms are unreasonable.

PG&E notes that the “CPUC Approval” term of the Agreement is similar to the term that the Commission flagged in D.16-09-004. Consistent with PG&E’s response when that concern was raised in the proposed decision in that proceeding, PG&E will modify its CPUC Approval clause in the future.

1. The Agreement Is Reasonable

The following sections provide a more detailed overview of the terms and conditions of the Agreement, and explain why the Commission should approve it.

a. Overview Of The Agreement

The Agreement’s prices, terms, and conditions are described in detail in Chapter 3 of Ex. PG&E-1 and PG&E-1C, and are summarized here. Under the Agreement, PG&E is entitled to four MW (referred to in the contract as the Commitment Level) of the project’s RA capability,

³⁰ Ex. PG&E-1, Hahm, p. 2-4.

³¹ Ex, PG&E-1, Post, p. 3-3.

including RA attributes, local RA attributes (if applicable), and flexible RA attributes. Seller agrees to comply with California Independent System Operator (CAISO) and Commission requirements to enable PG&E to apply the capacity of the project to meet its RA requirements during the delivery term.³²

In order to meet the RA requirements, Seller is responsible for aggregating customers in PG&E's service territory to deliver four MW of load reduction. Seller will develop, install, and operate energy storage systems at each customer site, whereby Seller will provide charging energy for the project through the customers' retail meters, store the energy in the project, and deliver the energy for on-site load reduction at customer facilities. Seller will not be allowed to export energy back to the grid. As a condition to the start of the delivery term, Seller shall obtain a Net Qualifying Capacity and Effective Flexible Capacity for the project of at least four MW in order to provide product to PG&E. Seller retains rights to all RA in excess of the Commitment Level as well as any energy or ancillary service revenues from the CAISO.³³

The Agreement will not be effective in full force and effect until "CPUC Approval" has been issued. The Initial Delivery Date, which will start the delivery term under the Agreement, can be as early as June 1, 2017, but no later than the Expected Initial Delivery Date (September 1, 2017), provided that CPUC Approval and all other conditions precedent to the Initial Delivery Date have been met. The conditions precedent to the Initial Delivery Date include—among other things—Seller's completion of the energy storage and interconnection facilities, Seller's posting of performance assurance, and Seller's and a licensed independent professional engineer's attestations that the project was built in accordance with all safety requirements.³⁴

PG&E will pay Seller a monthly payment that is comprised of a Capacity Payment less an Energy Settlement amount. The Capacity Payment is the product of a fixed monthly Contract

³² Ex. PG&E-1, Post, pp. 3-1 – 3-2.

³³ Ex. PG&E-1, Post, p. 3-2.

³⁴ Ex. PG&E-1, Post, p. 3-2.

Price times four MW, subject to certain performance requirements.³⁵ The Energy Settlement amount is the sum of the four highest hourly day-ahead energy prices, less the variable operations and maintenance (O&M) value that Seller included in its offer to PG&E, summed over all days in the month. If the Variable O&M value is equal to or exceeds an applicable hourly day-ahead price, the Energy Settlement amount for that hour is zero. The Energy Settlement amount is intended to represent a possible (not actual) monthly load reduction amount that Seller may receive in the CAISO market. Seller must bid the project into the CAISO market, but Seller makes all bidding decisions for the project, not PG&E.³⁶

The Agreement specifies events that entitle PG&E to declare a Seller event of default and to terminate the agreement. The other Agreement terms, including performance assurance and safety, are similar to the corresponding terms in the previously filed Energy Storage Agreements from the 2014 ES RFO.³⁷

b. Notwithstanding ORA and GPI's Concerns, The Agreement Is Reasonable

PG&E selected winning offers in its 2014 ES RFO, including the Agreement that is the subject of this application, based on the offers' values, as measured by the NMV of the storage service and its PAV, which considers PG&E-specific factors in the valuation in addition to other factors such as project location.³⁸

Additionally, in light of the state's policies and principles for energy storage, PG&E included technological and project configuration diversity as an additional selection factor.³⁹ PG&E realized that there is a cost tradeoff to executing agreements for projects with greater

³⁵ Ex. PG&E-1C, p. 3-3.

³⁶ Ex. PG&E-1, Post, p. 3-3.

³⁷ Ex. PG&E-1, Post, p. 3-3.

³⁸ Ex. PG&E-1, Post, p. 1-2.

³⁹ Ex. PG&E-1, Post, p. 1-2.

levels of diversity. PG&E made a cost/benefit tradeoff in order to consider other qualitative factors when evaluating potential storage projects.⁴⁰

The Agreement will contribute to the diversity of the contracts already executed out of the ES RFO, which include diversity in terms of facility size, charge and discharge duration, technologies, operating protocol, on-line date, and other factors.⁴¹ PG&E sought to execute one BTM energy storage agreement through this ES RFO in order to learn about, on a commercial scale, how this type of resource would operate and provide value in the CAISO market. PG&E selected this offer from the final BTM energy storage offers because it aligned with PG&E's project attribute preferences.⁴²

In its protest ORA argues that 1) the Agreement is not cost-effective, 2) the Agreement fails to reflect Least Cost Best Fit (LCBF) principles, and 3) the Agreement is not necessary to meet PG&E's RA requirement. Based on these assertions, ORA recommends that the Commission reject the Agreement. For its part, GPI discusses whether PG&E's evaluation of the Agreement complies with AB 2514 and D.13-10-040, focusing on whether the Agreement is "cost effective." GPI also discusses briefly whether the Agreement's term should be longer.

In the ES RFO, PG&E's primary objective was to execute a diverse portfolio of energy storage projects (as measured mainly by technology and project configuration) that meet the objectives of the energy storage program as established by the Commission—greenhouse gas reduction, grid optimization and renewable integration—at a reasonable cost. This diverse portfolio should yield reliable empirical information about technology behavior under various, well documented conditions. The use of energy storage in different project configurations may also provide insight into the optimization of energy storage benefits. The knowledge gained would be utilized to:

⁴⁰ Ex. PG&E-1, Post, p. 3-6.

⁴¹ The other contracts executed out of PG&E's 2014 ES RFO were presented to the Commission for approval in A.15-12-004, and were addressed in D.16-09-004.

⁴² Ex. PG&E-1, Post, p. 3-6.

- Operationalize projects with different project configurations;
- Accelerate learning for future procurement;
- Help shape future policies and regulations;
- Review selection criteria in future RFOs; and
- Update valuation methodologies.⁴³

As part of seeking diversity in its storage project portfolio, in its RFO PG&E sought BTM load reduction projects. As discussed in more detail in chapter 2 of Ex. PG&E-1, simply developing an appropriate agreement structure for BTM load reduction projects required significant effort.

PG&E realized that there is a cost tradeoff to executing agreements for projects with greater levels of diversity. PG&E made a cost/benefit tradeoff in order to consider other qualitative factors when evaluating potential storage projects. Thus, while PG&E appreciates, and generally supports, ORA's expressed concerns regarding cost, in this context the incremental cost associated with this Agreement is justified by the experience it provides to PG&E in obtaining this type of storage project, and incorporating it into PG&E's resource adequacy portfolio. If approved, the Agreement will contribute to the diversity of the contracts already executed out of the ES RFO.

While GPI suggests it might have preferred a contract with a longer term, there is no showing that such a contract could have been procured, or that even if it could have been procured, whether it would have struck an appropriate balance between costs and benefits. Therefore, GPI's general preference for a longer term contract should not provide a basis for determining the Agreement is unreasonable.

⁴³ Ex. PG&E-1, Post, p. 3-5.

2. In Light Of The Commission’s Expressed Concerns, PG&E Will Modify The “CPUC Approval” Clause PG&E Uses In Future Storage Agreements

The Agreement contains the same “CPUC Approval” clause that caused the Commission concern in A.15-12-004. Consistent with PG&E’s response when that concern was raised in the proposed decision in that proceeding, and with the Commission’s decision in that proceeding, D.16-09-004, PG&E will modify its CPUC Approval clause to use the following in its future ES RFOs.

E. The Agreement Promotes Safe And Reliable Operation And Maintenance Of The Associated Energy Storage Systems

Similar to the contracts resulting from the 2014 ES RFO which PG&E presented in A.15-12-004, in the Agreement PG&E has incorporated requirements to address the safety of the development, construction, operation and maintenance of energy storage systems.

No party raised concerns regarding how the Agreement addresses safety issues. As described in PG&E’s prepared testimony and summarized below, safety issues are fully addressed. Therefore, the Commission should determine that the Agreement promotes the safe and reliable operation and maintenance of the energy storage systems associated with it.

Under the Agreement, the Seller is required to submit to PG&E a preliminary project safety plan as a condition of execution of the Agreement. Seller is required to update it periodically during the term of the Agreement including at the project review milestone which is before substantial development as occurred and again before the Initial Delivery Date.⁴⁴ The preliminary project safety plan references the applicable safety related codes and standards and Seller’s current safety programs and policies. Later updates of the project safety plan are to include a summary of the project design, equipment used, and a description of key safety-related systems.⁴⁵

⁴⁴ Ex. PG&E-1, Post, pp. 3-6 – 3-7.

⁴⁵ Ex. PG&E-1, Post, p. 3-7.

Seller must also describe potential hazards and include risk mitigations and safeguards, such as operating procedures, incident response and recovery plans, and personal protective equipment and procedures. Additionally, Seller and a licensed independent professional engineer both must attest at the initial delivery date and at any safety update event that the project can operate in compliance with the safety requirements.⁴⁶

PG&E anticipates that Exponent, or a similar firm, will review the updated project safety plan at the project review milestone and will also be available to review any other safety related issues that may arise throughout the term of the Agreement. Seller must design, construct, operate and maintain the project and conduct all work in accordance with the safety requirements. In the Agreement, Seller must provide and enforce the Seller's project safety plan as to its contractors and affiliates.⁴⁷

During the term of the Agreement, in the case of any serious incident, Seller must notify PG&E within five business days and follow any applicable remediation process. Seller and its contractors or affiliates must cooperate fully and assist PG&E with any inquiry by a governmental authority that arises as a result of a serious incident. If the Seller becomes aware of actual or imminent harm to life, public safety or property, it may not deliver product from that energy storage system until PG&E accepts that the energy storage system is in compliance with the safety requirements.⁴⁸ As discussed above, PG&E may utilize a third party to assist in its review of any remediation plan, and PG&E may terminate the Agreement if Seller fails to resolve a remediation event such as a serious incident or actual/imminent harm to life or safety, public health, third-party-owned property, or the environment due to or arising from the project, to PG&E's satisfaction within 270 days.⁴⁹

⁴⁶ Ex. PG&E-1, Post, p. 3-7.

⁴⁷ Ex. PG&E-1, Post, p. 3-7.

⁴⁸ Ex. PG&E-1, Post, p. 3-7.

⁴⁹ Ex. PG&E-1, Post, p. 3-7.

The Agreement provides substantial Seller and contractor obligations to ensure that the energy storage associated with the Agreement meets the standard of Prudent Electrical Practices and the Commission's standards of care. Contract terms provide PG&E with the ability to enforce those standards or, in certain cases, terminate the contract in case of non-compliance.⁵⁰

In sum, the Agreement promotes the safe and reliable operation and maintenance of the storage resources associated with it.

F. The Agreement, And PG&E's Associated Cost Recovery Proposal, Should Be Approved, And The Commission Should Determine That The Agreement Counts Four Megawatts Toward PG&E's 2014 Energy Storage Target

For the reasons presented in this opening brief, as well as in PG&E's prepared testimony, the Commission should approve the Agreement, approve PG&E's associated cost recovery proposal, and determine that the Agreement counts four MW toward PG&E's 2014 energy storage targets.

1. The Agreement Should Be Approved

As discussed above, if approved, the Agreement will contribute to the diversity of the contracts already executed out of the ES RFO. It will enable PG&E to learn about how this type of resource would operate and provide value on a commercial basis in the CAISO markets. PG&E selected this offer from the final BTM energy storage offers because it aligned with PG&E's project attribute preferences.⁵¹ Neither ORA's nor GPI's objections or expressed concerns provide a basis for determining that the Agreement is unreasonable, or should be rejected. Therefore, the Commission should approve it.

2. PG&E's Cost Recovery Proposal Should Be Approved

The Application Decision contains a table summarizing the investor-owned utilities' (IOU) position pertaining to cost recovery by storage grid domains, regulatory function, ownership, cost recovery request, balancing account, and rate component. The decision adopts

⁵⁰ Ex. PG&E-1, Post, p. 3-8.

⁵¹ Ex. PG&E-1, Post, p. 3-6.

the IOUs' proposed cost recovery through existing ratemaking mechanisms for the 2014 solicitation cycle, with the exception of the IOUs' requested extension of the PCIA treatment beyond 10 years for generation/market participation storage projects.⁵² PG&E's cost recovery proposal here is consistent with what is authorized by the Application Decision, and therefore the Commission should approve it.

For storage resources that provide generation/market participation function, the Application Decision authorizes the IOUs to use the PCIA to recover above-market costs associated with departing load for energy storage services procured via the 2014 ES RFO for a period of 10 years.⁵³

In this application, PG&E is requesting approval of a BTM energy storage project whose function is generation/market participation. Consistent with the cost recovery authorized by the Application Decision, PG&E proposes to record the cost of the BTM energy storage project in its Energy Resource Recovery Account (ERRA) and recover the costs through its generation rate component.⁵⁴

With respect to the PCIA, PG&E's proposal is to incorporate the costs associated with this BTM energy storage project into the PCIA calculation consistent with the Joint IOUs' Protocol presented Chapter 7, Section E, of A.15-12-004 over the full five-year contract term.⁵⁵ Since PG&E filed this application, the Commission has issued D.16-09-004 addressing A.15-12-004. At this time, PG&E proposes to incorporate this Agreement into the PCIA consistent with the approach adopted by D.16-09-004.

⁵² Ex. PG&E-1, Barry, p. 5-1.

⁵³ Ex. PG&E-1, Barry, p. 5-1.

⁵⁴ Ex. PG&E-1, Barry, p. 5-2.

⁵⁵ Ex. PG&E-1, Barry, p. 5-2.

3. The Commission Should Determine That The Agreement Counts Four MW Toward PG&E's Energy Storage Targets

The Agreement provides storage services to PG&E consistent with the provisions of the Application Decision. Therefore, the Commission should determine that the Agreement counts four MW toward PG&E's 2014 customer-connected storage target.

G. The Agreement Is Appropriately Categorized By Function

Under the Agreement, PG&E obtains four MW of RA capability.⁵⁶ Therefore, the project is appropriately categorized as generation/market participation.

H. If The Agreement Is Not Approved, Then PG&E Will Be Four Megawatts Short Of Its 2014 Energy Storage Targets, In Which Case PG&E Proposes To Incrementally Increase The Amount It Seeks In Its Upcoming 2016 Energy Storage Request For Offers To Get Back On Track With The Targets Adopted In D.13-10-040

Currently, counting the Agreement but not counting the two contracts the Commission rejected in D.16-09-004, as explained in more detail below, PG&E is just meeting its 2014 energy storage targets.

If, however, the Commission rejects the Agreement, PG&E will be approximately four MW short of its 2014 energy storage targets. PG&E will have more than met its 10 MW customer-connected target with its 17.5 MW of self-generation incentive program (SGIP)-funded customer connected storage projects. However, PG&E will be four MW short of its 2014 transmission/distribution connected storage targets.

If this contingency arises, that is, if the Commission rejects the Agreement, then PG&E proposes that the Commission direct PG&E to add the shortfall to PG&E's storage procurement targets for the 2016 ES RFO. This approach is straightforward, and consistent with what the Commission has already determined should be done if an IOU seeks and obtains a deferral of a portion of its storage target.

⁵⁶ Ex. PG&E-1, Post, p. 3-1.

1. Currently, PG&E Is Meeting Its 2014 Energy Storage Targets

Ex. PG&E-2 illustrates the current status of PG&E’s storage procurement activities vis a vis PG&E’s 2014 storage targets in more detail. As described above, PG&E currently has 17.5 MW of SGIP-funded customer-connected storage projects, more than meeting PG&E’s 2014 customer-connected energy storage target of 10 MW. However, none of the remaining 7.5 MW can be counted against PG&E’s 2014 transmission/distribution storage targets. While D.16-01-032 allows some customer connected storage targets toward an IOU’s transmission/distribution connected targets, it does not allow this for SGIP-funded customer connected storage.⁵⁷

Turning to PG&E’s 2014 transmission/distribution energy storage targets, taking into account the information in Ex. PG&E-2 and the D.16-09-004’s rejection of PG&E’s two distribution reliability projects, PG&E’s transmission/distribution connected storage projects total 76 MW. Additionally, under D.16-01-032 the Agreement’s four MW of customer-connected storage can be counted toward PG&E’s transmission/distribution target.⁵⁸ Thus, currently, taking the Agreement into account, PG&E is just meeting its 2014 transmission/distribution connected storage targets, which total 80 MW.

The net of all of this is that currently PG&E is meeting its 90 MW of 2014 energy storage targets, and has an additional 7.5 MW of SGIP-funded storage beyond that.

2. If The Commission Were To Reject The Agreement, Then PG&E Would Be Four Megawatts Short Of Its 2014 Energy Storage Targets

However, if the Commission were to reject the Agreement, then PG&E would then be four MW short of its aggregate 2014 transmission- and distribution-connected target of 80 MW.

3. If The Commission Were To Reject The Agreement, Then PG&E Should Be Directed To Add The Shortfall To Its 2016 Energy Storage Targets

As stated above, PG&E proposes that, in that case, the Commission direct PG&E to add the shortfall to its procurement target for its 2016 ES RFO. This approach is straightforward,

⁵⁷ D.16-01-032, pp. 32-33.

⁵⁸ D.16-01-032, pp. 32-33.

and consistent with the Commission's previous determination that any deferred targets should be added to the affected IOU's procurement target for its next solicitation.⁵⁹

Adding any shortfall to the amount PG&E is to obtain in its 2016 ES RFO is also an appropriate approach here, especially in light of PG&E's activities to support the Commission's adopted storage program, including PG&E's submission of storage resource agreements for approval that would, if approved, enable PG&E to meet its 2014 targets

PG&E has not requested the ability to defer any of its 2014 energy storage targets up until this point because PG&E was not seeking a deferral, instead entering into and submitting for Commission approval sufficient contracts to meet its targets. Thus, such a request would have not have been timely.

However, if the Commission determines that in addition to the two projects it rejected in D.16-09-004, the Agreement should also be rejected and not included in PG&E's storage portfolio, then PG&E will have a four MW shortfall. Consistent with what the outcome would have been if PG&E had requested and been granted a deferral, the Commission should authorize PG&E to increase the MW it is seeking in its 2016 ES RFO to offset that shortfall. In any event, PG&E will evaluate offers it receives in response to its 2016 ES RFO in light of the guidance that the Commission has provided in D.16-09-004 and any additional guidance the Commission provides in addressing this application.

III. CONCLUSION

For all of the foregoing reasons, as well as those presented in its prepared testimony in this proceeding, PG&E respectfully requests that the Commission:

- Approve the Agreement;
- Approve PG&E's recovery proposal for the Agreement, including application of the PCIA to the generation/market participation Agreement for its five-year life; and
- Determine that the Agreement contributes four MW toward PG&E's energy storage targets adopted by the Commission in the D.13-10-040.

⁵⁹ D.13-10-040, Appendix A, p. 10.

If the Commission were to reject the Agreement, then PG&E proposes that the Commission direct PG&E to add the resulting four MW shortfall in meeting PG&E's 2014 energy storage targets to PG&E's storage procurement targets for the 2016 ES RFO.

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Respectfully submitted,

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