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Agenda ID #16827
Ratesetting

TO PARTIES OF RECORD IN APPLICATION (A.) 17-12-002, A.17-12-003:

This is the proposed decision of Administrative Law Judge Brian R. Stevens. Until and unless the Commission hears the item and votes to approve it, the proposed decision has no legal effect. This item may be heard, at the earliest, at the Commission's October 11, 2018 Business Meeting. To confirm when the item will be heard, please see the Business Meeting agenda, which is posted on the Commission's website 10 days before each Business Meeting.

Parties of record may file comments on the proposed decision as provided in Rule 14.3 of the Commission's Rules of Practice and Procedure.

The Commission may hold a Ratesetting Deliberative Meeting to consider this item in closed session in advance of the Business Meeting at which the item will be heard. In such event, notice of the Ratesetting Deliberative Meeting will appear in the Daily Calendar, which is posted on the Commission's website. If a Ratesetting Deliberative Meeting is scheduled, ex parte communications are prohibited pursuant to Rule 8.3(c)(4)(B).

/s/ ANNE E. SIMON
Anne E. Simon
Chief Administrative Law Judge

AES:lil

Attachment

ALJ/BRC/lil **PROPOSED DECISION** Agenda ID #16827
Ratesetting

Decision **PROPOSED DECISION OF ALJ STEVENS (Mailed 9/7/2018)**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Southern California Edison Company (U338E) for Approval of the Results of Its 2016 Energy Storage and Distribution Deferral Request for Offers.	Application 17-12-002
And Related Matter.	Application 17-12-003

DECISION APPROVING ENERGY STORAGE AGREEMENTS AND ASSOCIATED COST RECOVERY MECHANISMS

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DECISION APPROVING ENERGY STORAGE AGREEMENTS AND ASSOCIATED COST RECOVERY MECHANISMS

Summary

This decision approves and grants cost recovery for one energy storage contract proposed by Southern California Edison Company and six energy storage contracts proposed by Pacific Gas and Electric Company. These energy storage contracts resulted from Energy Storage and Distribution Deferral Requests for Offers held in 2016 at the direction of the Commission. The approved energy storage contract with Southern California Edison Company is for a total of 10 megawatts of capacity. The approved six energy storage contracts with Pacific Gas and Electric Company are for a total of 165 megawatts of capacity, including one project that provides 20 megawatts of energy storage capacity that will provide distribution deferral services. This procurement is consistent with the direction the Commission provided in Decision 16-09-007 and satisfies the requirements to count towards the Assembly Bill 2514 energy storage targets adopted by the Commission for the respective investor owned utilities.

The proceeding is closed.

1. Background

In response to Assembly Bill (AB) 2514, the Commission issued Decision (D.) 13-10-040, known as the Energy Storage Framework Decision. The Energy Storage Framework Decision adopted biennial storage procurement targets for each of the three investor-owned utilities (IOUs). The IOUs' 2014 energy storage procurement solicitations were addressed in D.14-10-045, known as the 2014 Energy Storage Plan.

Two decisions addressed the results of the 2014 Energy Storage Request for Offers (RFO): D.16-09-004, which approved four and rejected two energy storage agreements by Pacific Gas and Electric Company (PG&E) and approved two energy storage agreements by Southern California Edison Company (SCE); and D.16-12-004, which rejected an energy storage agreement proposed by PG&E. D.16-12-004 determined that PG&E had not met its 2014 energy storage target, and directed that

PG&E's 2016 energy storage target should be increased to account for the identified shortfall.

D.16-09-007, known as the 2016 Energy Storage Plan Decision, approved SCE's and PG&E's 2016 Energy Storage Procurement Plans. Specifically, the 2016 Energy Storage Plan Decision authorized SCE to procure up to 20 megawatts (MW) of resource adequacy (RA) eligible energy storage projects in specified locations and PG&E to procure up to 120 MW of energy storage resources. The Commission also authorized SCE and PG&E to explore additional innovative use cases to include in its 2016 solicitations, including energy storage that can facilitate distribution deferral.

SCE and PG&E issued Energy Storage and Distribution Deferral RFOs in late 2016. Pursuant to the Energy Storage Framework Decision, SCE and PG&E submitted the instant applications requesting approval of the selected results of those solicitations.

SCE seeks approval for a total of 10 MW of capacity from one energy storage resource. PG&E seeks approval for a total of 165 MW of capacity from six energy storage resources, including a 20 MW resource that provides distribution deferral services.

Responses and protests were filed on both applications. Green Power Institute filed responses to both PG&E and SCE's application on January 2, 2018. The Utility Reform Network (TURN) and the Office of Ratepayer Advocates (ORA)[1] filed protests to SCE's application on January 3, 2018. A group of community choice aggregation entities (the CCA Parties)[2] and the California Energy Storage Alliance filed responses to PG&E's application on January 4, 2018. Additionally, ORA, TURN, East Bay Community Energy, and Direct Access Customer Coalition (DACC) and Alliance for Retail Energy Markets (AReM) filed protests to PG&E's application on January 4, 2018.

[1] The Office of Ratepayer Advocates was renamed the Public Advocates Office of the Public Utilities Commission pursuant to Senate Bill No. 854, which the Governor approved on June 27, 2018.

[2] Silicon Valley Clean Energy, Marin Clean Energy, Peninsula Clean Energy, and Sonoma Clean Power.

PG&E and SCE filed replies on January 16, 2018. A prehearing conference (PHC) was held on February 7, 2018 to determine parties, discuss the scope, the schedule, and other procedural matters.

As provided in the proceeding schedule, on May 14, 2018, PG&E, ORA, SCE, TURN, and joint DACC/AReM/CCA Parties filed closing briefs. On June 4, 2018, PG&E, ORA, SCE, TURN, and joint DACC/AReM/CCA Parties filed reply briefs.

2. Issues Before the Commission

There were three main issues set forth in the scoping memo: reasonableness of the proposed contracts, consistency with previous Commission direction, and proper cost recovery and allocation mechanisms.

1. Are PG&E's and SCE's 2016 Energy Storage and Distribution Deferral RFOs and the resulting procurements reasonable?
    a. Were PG&E's and SCE's 2016 Energy Storage and Distribution Deferral RFO processes fair and competitive?
    b. Were PG&E's and SCE's evaluation methodologies reasonable?
    c. Are the prices, terms, and conditions of the storage procurements reasonable?
    d. Was it reasonable for SCE to terminate Option 2, the all-source solicitation for renewable energy, energy storage, resource adequacy, load reduction, ancillary services, and/or renewable attributes from eligible preferred resources for purposes of distribution network upgrade deferral, of its request for offers?
    e. Should the resulting contracts submitted in PG&E and SCE's Applications be approved?
2. Are PG&E's and SCE's Applications compliant with the requirements and procurement authority granted by the Commission, including the 2016 Energy Storage Procurement Plan Decision, the Decision on Multiple Use Application Issues, and the Public Utilities Code?
3. Are the proposed rate treatment, cost recovery, and cost allocation proposals just and reasonable?
    a. Are PG&E's cost allocation and cost recovery proposals for its proposed distribution reliability project, which will provide multiple services, reasonable?

3. Overview of the Seven Contracts

SCE selected one offer for an energy storage project that will provide 10 MW of capacity, and PG&E selected six offers for projects that in total provide 165 MW of capacity. The dispatch duration for each of the selected projects is four hours, and all of the projects qualify for RA with the Commission and the California Independent System Operator's (CAISO) RA programs. SCE received 328 conforming offers.[3] PG&E received 140 offers with over 600 variations.[4] Of the offers received, SCE and PG&E signed contracts, contingent on Commission approval, for the following projects.

Utility	Project Name	Developer	Capacity and Contract Duration	Grid Domain	Technology	Online Date
SCE	Powin	Powin SBI	10 MW for 10 years	Distribution	Lithium Iron Phosphate	January 2020
PG&E	Cascade Energy Storage	Enel	25 MW for 20 years	Transmission	Lithium Ion	December 2022
PG&E	Kingston Energy	Enel	50 MW for 10 years	Transmission	Lithium Ion	December 2023
PG&E	Sierra Energy Storage	Enel	10 MW for 10 years	Transmission	Lithium Ion	December 2023
PG&E	Diablo Energy Storage	LS Power	50 MW for 10 years	Transmission	Lithium Ion	December 2021
PG&E	Calstor, LLC	Calstor	10 MW for 10 years	Customer	Lithium Ion	November 2020
PG&E	Llagas Energy Storage	Tesla (PG&E Owned)	20 MW for 20 years	Distribution	Lithium Ion	November 2021

[3] Exhibit SCE-01 at 12.

[4] Exhibit PGE-01 at 2-4.

4. The Reasonableness of SCE and PG&E's RFO and Corresponding Conduct

Both SCE and PG&E conducted RFO processes based on the direction provided in D.16-09-007.

4.1. SCE

SCE issued its 2016 Energy Storage and Distribution Deferral RFO on December 1, 2016.[5]

In releasing its 2016 Energy Storage and Distribution Deferral RFO, SCE focused on the Commission's goal to transform the energy storage market to overcome the barriers that are hindering broader adoption of emerging storage technologies.[6] Despite having met its 2016 Energy Storage target, SCE conducted a 2016 energy storage solicitation to maintain momentum in transforming the energy storage market. The 2016 solicitation encompassed two procurement options.

In Option 1, SCE sought up to 20 MW of RA-eligible energy storage projects, limiting each offer to 10 MW to allow for broader market participation. SCE's 2016 Energy Storage Procurement Plan identified the following high load A-bank, 220/66 kilovolt substations where energy storage can provide local RA value and improve system performance by maintaining reliable service in constrained areas: Goleta, Johanna, Laguna Bell, and Santiago.

Option 2 was an all-source solicitation for renewable energy, energy storage, RA, load reduction, ancillary services and/or renewable attributes from eligible Preferred Resources for purposes of distribution network upgrade deferral. In Option 2, SCE sought to explore whether a deeper penetration of distributed energy resources (DER) in a particular location could effectively defer traditional distribution network upgrades without a loss to system reliability. In its distribution planning process, SCE identified

[5] Exhibit SCE-01 at 1.

[6] D.13-10-040 at 7.

four distribution substations and 14 corresponding circuits with a 2019 distribution upgrade requirement as potential distribution deferral locations. After carefully evaluating all conforming Option 2 offers, SCE determined that it was not currently cost competitive to deploy DER solutions in lieu of traditional distribution network upgrades at the proposed locations, even on a demonstration basis. On March 31, 2017, SCE sent a formal notice to market participants cancelling Option 2 of the 2016 Energy Storage and Distribution Deferral RFO.

TURN raised concern in its protest about SCE's decision to terminate Option 2 of its RFO. TURN recommended that the Commission carefully examine SCE's decision to abandon Option 2 because of potential bias toward utility rate-based projects.[7] Given that SCE's proposed rate recovery for the Option 1 RFO is through the Energy Resource Recovery Account, and not to be rate-based, we do not give weight to TURN's concern about the abandonment of the Option 2 to increase utility rate-base.

Prior to launch, SCE finalized all documents that were part of the 2016 Energy Storage and Distribution Deferral RFO (e.g., pro forma agreements, RFO participant instructions, offer workbooks, and offer forms) and the Energy Storage and Distribution Deferral RFO website. SCE also reviewed the Energy Storage and Distribution Deferral RFO details with internal and external stakeholders including the Independent Evaluator (IE), the Cost Allocation Mechanism (CAM) oversight group, and the Procurement Review Group (PRG), which includes the Commission's Energy Division.

SCE's Energy Storage and Distribution Deferral RFO website included all of the information that sellers needed to participate. SCE notified potential sellers for both procurement options via an email list containing more than 3,000 email addresses, and through various service lists for Commission dockets involving energy storage and other DER matters.

[7] TURN Protest to A.17-12-002 at 2.

The IE, Sedway Consulting, concluded that SCE did a good job of administering its 2016 Energy Storage and Distribution Deferral Option 1 RFO.[8]

In light of the record the Commission finds that SCE's RFO and its corresponding conduct was reasonable, including the decision to terminate the Option 2 RFO.

4.2. PG&E

PG&E issued its 2016 Energy Storage and Distribution Deferral RFO on November 30, 2016 to solicit offers for at least 120 MW of distribution and transmission connected energy storage projects.[9] In its 2016 Energy Storage and Distribution Deferral RFO materials to prospective participants, PG&E provided detailed guidance on project requirements, particularly around interconnection. PG&E's approved 2016 Energy Storage and Distribution Deferral RFO Procurement Plan contemplated all forms of resource ownership, including utility-owned and third-party owned.[10] Participants in the PG&E's 2016 Energy Storage and Distribution Deferral RFO that submitted offers for third-party owned projects could seek to execute a RA-only agreement, a capacity storage agreement, or a behind-the-retail meter capacity storage agreement. In each case, a third-party owned energy storage project would operate solely as a wholesale market resource and continue to be third-party owned for the duration of the contract.

PG&E determined that in addition to seeking proposals for third-party owned projects, it would also pursue storage-based projects to complement utility-owned photovoltaic sites and storage-based distribution reliability projects.

PG&E increased the requirements for project site control and electric interconnection for the 2016 Energy Storage and Distribution Deferral RFO as compared its 2014 Energy Storage RFO. Participants had to demonstrate site control at the time of

[8] Exhibit SCE-02 at Appendix C, 13.

[9] Exhibit PGE-01 at 2-1.

[10] Application 16-03-001 Application Testimony at 3-1.

offer submission, except for offers for the PG&E-owned photovoltaic site projects, PG&E-owned distribution deferral assets, and customer-connected projects.

PG&E conducted extensive outreach to potential participants as part of the Energy Storage and Distribution Deferral RFO launch on November 30, 2016. PG&E announced the issuance of the 2016 Energy Storage and Distribution Deferral RFO by e-mail notification and provided eight e-mail update notifications to PG&E's mailing list with approximately 2,800 recipients.

After the shortlist was developed, PG&E initiated negotiations with each participant with a shortlisted offer to review its offer and receive any updates to the project since the offer was submitted. In the initial meetings, all shortlisted participants were told that PG&E had purposefully shortlisted procurement for more volume than it needed to meet its 2016 energy storage target. Thus, some negotiations would not result in an executed agreement.

As a condition of remaining on PG&E's shortlist for 2016 Energy Storage and Distribution Deferral RFO negotiations, participants were required to provide information about their storage technology and the safety history of both the participant or contractors.

PG&E conducted a number of meetings with its PRG throughout the Energy Storage and Distribution Deferral RFO process. On November 10, 2016, PG&E distributed the 2016 Energy Storage and Distribution Deferral RFO materials for review at the November 15, 2016 PRG meeting. This timing was to ensure that PG&E could incorporate any PRG feedback before issuance of the 2016 Energy Storage and Distribution Deferral RFO.

The IE, Merrimack Energy Group, concluded that "PG&E has implemented the 2016 Energy Storage RFO in an exemplary, fair and consistent manner, marked by an

overall objective to maintain a reasonably transparent and competitive solicitation process designed to be inclusive for all bidders."[11]

We agree that PG&E's RFO and its corresponding conduct was reasonable.

5. Conformance of the RFO and Resulting Contracts with the 2016 Energy Storage Plan Decision and Other Applicable State Law

5.1. SCE

SCE's RFO resulted in one awarded contract for 10 MW with the Powin project. SCE contends that its RFO and the resulting contract selection conforms with the 2016 Energy Storage Plan Decision and other applicable state law.

The 2016 Energy Storage Plan Decision approved SCE's 2016 Energy Storage and Distribution Deferral Plan authorizing SCE to solicit up to 20 MW of RA-eligible energy storage resources in specified locations. The Commission also authorized SCE to explore additional innovative use cases to include in its 2016 solicitation, including energy storage that can facilitate distribution deferral.

Cumulatively, SCE's targets through the second biennial procurement cycle, beginning in 2016, are 115 MW of transmission domain energy storage, 70 MW of distribution domain energy storage, and 25 MW of customer domain energy storage, a total of 210 MW of energy storage across the three grid domains. Currently, SCE's planned and existing energy storage amounts to approximately: 120 MW in the transmission-connected domain, 119 MW in the distribution-connected domain, and 253 MW in customer-connected domain.[12] After accounting for the flexibility rules adopted in Rulemaking (R.) 15-03-011, which allows SCE to apply up to 85 MW of

[11] Exhibit PGE-01 at C-92.

[12] Exhibit SCE-01 at 2.

customer-connected storage toward meeting the targets in the transmission and distribution domains, SCE has already satisfied its procurement target for 2016.[13]

Despite having met its target, SCE chose to conduct a 2016 energy storage solicitation to maintain momentum in transforming the energy storage market.

SCE contends that the Powin contract furthers the Commission's energy storage procurement policy. SCE's rationale is rooted in the Commission's first decision addressing energy storage, which established the policies and mechanisms for procurement of energy storage pursuant to AB 2514.[14] With the goal of market transformation, the Commission set procurement targets to encourage the development and integration of cost-effective energy storage systems into California's electric system. As part of this framework, the Commission established three guiding principles: (1) optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of transmission and distribution upgrade investments, (2) integration of renewable energy, and (3) reduction of greenhouse gas emissions to 80 percent below 1990 levels by 2050, per California goals. All energy storage procured must meet one or more of these operational requirements.[15]

SCE indicates that the Powin contract furthers the Commission's goal of optimizing the grid. The selected contract provides the CAISO with a flexible resource that is also capable of providing energy should an N-2 reliability event[16] occur in the Santa Barbara and Goleta area. This project will be incorporated into SCE's N-2 restoration plans and offer energy delivery flexibility during such an event.

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[13] Exhibit SCE-01 at 2.

[14] D.13-10-040.

[15] D.13-10-040 at 9.

[16] Exhibit SCE-01 at 15: ""N-2 event" means a simultaneous outage of the two Goleta-Santa Clara 220 kV transmission lines resulting from failure of, or damage to, any portion of the transmission infrastructure (including circuit towers, transmission lines, or other related equipment), such that electrical power is unable to flow on both such lines."

Additionally, SCE states that the selected contract will help integrate renewables and can provide energy during times of peak load. Fundamentally, this project can store energy to be used at another time and provide ancillary services when needed. SCE states that these attributes could potentially mitigate extreme market prices, provide necessary generation during high load scenarios, and conversely absorb excess energy on the grid by charging. The addition of 15 local resource constrained days gives SCE additional flexibility to control the battery when peak loads are expected. The 15 local resource constrained days requirement gives SCE 15 days annually to instruct storage owners to dispatch their units in accordance with SCE instructions, which will enable SCE to respond to local area needs when those needs do not coincide with system-wide needs.[17]

SCE also indicates that the selected contract also furthers the Commission's goal of market transformation by helping advance energy storage technology. The Powin contract will use the next-generation of lithium iron phosphate prismatic technology, while retaining a stable, safe chemistry with a significant amount of deployed run time.

The quantitative component of the valuation entailed forecasting (1) the present value of the contract benefits, (2) the present value of the contract costs, and (3) the net value between (1) and (2).[18] The sole quantitative benefit SCE calculated was the RA value. The quantitative costs SCE calculated included fixed contract costs, debt equivalence, and transmission and distribution upgrade costs.

We find that the SCE RFO and resulting contract conform to prior decisions and state law.

[17] Exhibit SCE-01 at 15.

[18] Exhibit SCE-01 at 17.

5.2. PG&E

5.2.1. Consistency with the 2016 Energy Storage Plan Decision

PG&E's indicates its 2016 Energy Storage and Distribution Deferral RFO was structured and developed to comply with the RFO requirements in the governing Commission energy storage decisions, namely the Energy Storage Framework Decision[19]and the 2016 Energy Storage Plan Decision.[20]

Consistent with PG&E's 2016 Procurement Plan approved by the Commission, PG&E issued its 2016 Energy Storage and Distribution Deferral RFO on November 30, 2016 to solicit offers for at least 120 MW of distribution and transmission connected energy storage projects. To account for prior project failures and Commission rejections, PG&E increased its target to approximately 160 MW.

PG&E conducted a number of meetings with its PRG throughout the Energy Storage and Distribution Deferral RFO process. On November 10, 2016, PG&E distributed the 2016 Energy Storage and Distribution Deferral RFO materials for review at the November 15, 2016 PRG meeting. PG&E states this timing was to ensure that PG&E could incorporate any PRG feedback before issuance of the 2016 Energy Storage and Distribution Deferral RFO.

After issuing the 2016 Energy Storage and Distribution Deferral RFO, PG&E reviewed the shortlist with the PRG on May 2, 2017. On October 31, 2017, PG&E reviewed with the PRG the list of projects with which it would seek to execute agreements.

As required by the 2016 Energy Storage Plan Decision,[21] PG&E engaged an IE from the Commission's approved list of IEs for the 2016 Energy Storage and Distribution

[19] D.13-10-040.

[20] D.16-09-007.

[21] D.16-09-007.

Deferral RFO. The IE for this solicitation was Merrimack Consulting. PG&E worked closely with the IE throughout the entire 2016 Energy Storage and Distribution Deferral RFO process, beginning in May 2016. 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 2016 Energy Storage and Distribution Deferral RFO related PRG meetings.

PG&E implemented a code of conduct because the 2016 Energy Storage and Distribution Deferral RFO sought offers for both third-party-owned and utility-owned energy storage projects. The purpose of the code of conduct was to ensure that offers leading to utility ownership of storage facilities were not favored over projects that provided a pass-through of energy costs. PG&E employees and consultants working on RFO offers associated with utility-owned energy storage projects were walled off from PG&E employees and consultants working on RFO offers associated with third-party-owned energy storage projects to ensure that those evaluating the utility-owned project offers could not acquire sensitive RFO information that other, non-utility developers did not have.

ORA notes, and PG&E agreed, that in the 2016 Procurement Plan Decision, the Commission required that when a utility presents a distribution deferral project for approval, it is to provide a comparison between the costs of the deferred asset and the proposed energy storage system over the deferment period.[22]

ORA asserts that PG&E did not comply with this requirement because PG&E limited its comparison to capital costs. However, as PG&E described in Chapter 5 of its prepared testimony, D.16-09-007 requires PG&E to respond to five statements when proposing a distribution deferral project such as the agreement with Tesla for the Llagas project.[23] PG&E responds to each of the five statements in Chapter 5.

[22] D.16-09-007 at 18.

[23] Exhibit PGE-01C at 5-1.

Chapter 4 of PG&E's prepared testimony discusses the complete valuation results for the Llagas project, concluding that the project has a Portfolio Adjusted Value (PAV) greater than zero, indicating the project is cost-effective for customers.[24] Chapter 4 presents PG&E's valuation results and describes in detail what is included in PG&E's valuation calculation.

We agree that PG&E conducted its 2016 Energy Storage and Distribution Deferral RFO consistent with its approved 2016 Energy Storage and Distribution Deferral RFO Plan Decision. PG&E conducted extensive outreach to potential participants, which facilitated a robust response from the market. PG&E received numerous responses representing a great variety of configurations. Consistent with its desire to achieve the Commission's goals for energy storage, such as diversity, PG&E shortlisted offers based on a combination of value and other qualitative factors. Lastly, PG&E had extensive interaction with both its PRG and IE throughout the entire process, and implemented a code of conduct for utility-owned and third-party-owned projects.

5.2.2. Consistency with the Decision on Multiple Use Application Issues

ORA raises concern about the consistency of PG&E's conduct in the proposed Llagas Purchase Sale Agreement (PSA) with direction provided by the Commission in the Decision on Multiple-Use Application (MUA) Issues.[25]

PG&E states that it prioritized the Llagas PSA as a distribution reliability project over market participation consistent with the Commission's MUA decision. PG&E states that "[d]istribution reliability needs will take priority over market participation, as per Rule 5 in the Commission's [MUA] decision."[26] MUA Rule 5 provides that, "[i]f one of

[24] Exhibit PGE-01 at Chapter 4.

[25] D.18-01-003.

[26] Exhibit PGE-01 at Chapter 3, 3-2.

the services provided by a storage resource is a reliability service, then that service must have priority,"[27]

However, ORA takes issue with MUA Rule 7 that states, "[i]f using different portions of capacity to perform services, storage providers must clearly demonstrate, when contracting for services, the total capacity of the resource, with a guarantee that a certain, distinct capacity be dedicated and available to the capacity-differentiated reliability services."[28] ORA contends that although the Llagas PSA is subject to Rule 7 because PG&E is reserving a portion of the project's capacity for a distribution reliability function while seeking to serve other functions, PG&E does not identify the specific capacity amount that will be dedicated to the distribution reliability function.

In this case, however, there is no contract between a storage provider and PG&E. PG&E will own and operate the Llagas project. PG&E itself, rather than a third party under contract to PG&E, will use the project to provide distribution reliability. In this context, it does not make sense to discuss a contractual commitment, as there is no contract between PG&E and another entity for energy storage services, rather solely a contract for the purchase and sale of the facility.

PG&E must prioritize the Llagas capacity to provide distribution reliability services. PG&E's proposal is in compliance with MUA Rule 7, taking into account that while the language of Rule 7 anticipates a contractual arrangement between PG&E and a storage provider, here PG&E itself is the storage owner and provider, thus there is no contract. Instead, there is PG&E's commitment to prioritize the Llagas capacity for its intended distribution reliability service.

We are not persuaded by ORA's assertion that the Llagas project is in violation of Rule 7 of the MUA decision. Additionally, in light of the record, we agree that the Llagas project is consistent with the MUA decision.

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[27] D.18-01-003 at Appendix A.

[28] D.18-01-003 at Appendix A.

6. Reasonableness of the Price and Terms of the Contracts

6.1. SCE

SCE asserts that the price and terms of the Powin contract are reasonable.

SCE used the Least Cost, Best Fit (LCBF) methodology to value and award contracts in Option 1. SCE asserts that this methodology is consistent with valuations performed by SCE in other solicitations.[29] SCE's valuation considers quantitative and qualitative components. SCE's valuation considers quantitative and qualitative components. SCE asserts that while the Powin project had a slightly negative net present value, the project is cost-effective in light of the qualitative benefits of the project.

SCE concludes that cost-effectiveness "is not a bright-line rule, but rather leaves a degree of judgment to the utilities to ensure that their procurement does not create an unreasonable financial obligation for their customers."[30] SCE asserts that it seeks to maximize the value of energy storage procurement on behalf of its customers in furtherance of the Commission's stated objective to transform the energy storage market. SCE indicated that it selects only those contracts that are forecasted to provide a cost competitive solution to meeting its procurement obligations on behalf of its customers.[31]

TURN raised concerns regarding the cost-effectiveness of the Powin contract and references D.16-09-004 where a PG&E energy storage project was denied partly based on the net market value analysis presented by PG&E.[32] TURN urges the Commission, whether or not it approves the Powin contract in this proceeding, to clarify that a utility cannot demonstrate cost-effectiveness in the context of AB 2514 procurement simply by showing that the selected project was more attractive on a cost and net present value (NPV) basis than other offers received in response to a RFO. Rather, TURN argues that

[29] SCE references its 2014 Energy Storage RFO, Local Capacity Requirements RFO, Combined Heat and Power RFOs, Renewables Portfolio Standard solicitations, and All-source RFOs for energy and RA.

[30] SCE Closing Brief at 8-9.

[31] SCE Closing Brief at 9.

[32] TURN Reply Brief at 8.

the Commission's commitment to ratepayer protection in its implementation of AB 2514 should require it to also consider whether ratepayers would enjoy a net benefit from the project, according to the methodology for assessing costs and benefits employed by the utility.

TURN recommends that the Commission carefully consider the value of the qualitative benefits identified by SCE in order to approve the Powin contract.[33]

TURN admits that while the resiliency benefit claimed by SCE may be real, the additional benefits cited by SCE are speculative and may not be realized.[34] TURN notes that if the battery had already discharged energy, no reliability benefit would be realized. If the battery were fully charged, it would only meet the minimum delivery requirement for RA eligibility (up to four hours for three consecutive days at peak discharge rates).[35]

TURN further asserts that the resource would only serve a limited number of customers.[36] TURN notes that if the local system were approaching peak load conditions as an N-2 event is experienced, the 10 MW system would serve around one percent of the load for just one of the two relevant local systems.[37]

TURN also asserts that because the contract entitles SCE to "dispatch the resource up to 15 days per calendar year," SCE would not otherwise control the dispatch rights under the contract.[38] If SCE's 15 dispatch days have already been utilized, the storage facility would not be obligated to serve load during the N-2 event.[39]

SCE asserts that the Powin energy storage facility will assist in system restoration and serve load during an N-2 event, mitigating the impact of potential rolling blackouts

[33] TURN Reply Brief at 7.

[34] TURN Opening Brief at 2.

[35] Exhibit TURN-01 at 2.

[36] Exhibit TURN-01 at 2.

[37] Exhibit TURN-01 at 3.

[38] Exhibit TURN-01 at 2.

[39] Exhibit TURN-01 at 2.

regardless of its size.[40] SCE also notes for Commission consideration that as a local RA resource, the energy storage facility provides both local and system reliability. Individual capacity resources are not expected to provide all, or even a substantial portion of reliability in an area.[41] Meaning that although it may only represent one percent of load, for resiliency purposes it is part of a portfolio of solutions that need to be present. Thus, an individual capacity resource like the Powin facility would still be a valuable resource during an N-2 event.

SCE also responds that as a Base Ramping (Category 1) Flexible RA resource, the Powin energy storage facility has a Must Offer Obligation that requires it to make its capacity available to the CAISO.[42] Additionally, the facility will be a party to the standard Wholesale Distribution Access Tariff interconnection agreement whereby it will be obligated to respond to emergency conditions and instructions from the distribution provider. This obligation exists regardless of whether the resource has an RA contract with SCE that includes or does not include a certain number of SCE-directed dispatch days. Thus, even if the facility had already reached its contracted annual limit of 15 SCE dispatches, it would still be required to be available to respond to an N-2 event.

The culminating value streams provided by the Powin project justify its approval. We agree with SCE that the Powin contract furthers the Commission's goals of optimizing the grid and supporting market transformation by utilizing the lithium iron phosphate technology.

The Powin facility will assist in system restoration and serve load during an N-2 event. We are not compelled by TURN's concern that the resiliency benefit of the Powin facility is limited. We agree with SCE that the Powin facility should not be expected to

[40] Exhibit SCE-03 at 5.

[41] Exhibit SCE-03 at 5.

[42] Exhibit SCE-03 at 5.

provide all, or even a substantial portion of, resiliency in order to still be a valuable resource during an N-2 event.

We find that the price and terms of the Powin contract are reasonable because the combination of the quantitative and qualitative benefits in the Powin project are likely to establish cost-effectiveness. Factoring in the qualitative benefits that SCE references, it is persuasive that this project is cost-effective.

We agree with TURN that as the energy storage market matures, it may be prudent to consider the uniformity of cost-effectiveness valuation metrics for energy storage systems across the IOUs in California.

TURN proposes that if the Powin contract is approved, the Commission should direct SCE to evaluate the option of utilizing the Powin storage facility for distribution reliability should SCE determine in the future that distribution upgrades or services are needed in the area and that these can be met technically, reliably, and cost-effectively with the storage resource.[43] TURN also recommends that SCE track the materialization of claimed benefits through annual reporting, should the Commission approve the Powin contract.[44]

We agree with TURN's general principle that SCE should ensure that it is obtaining the maximum net value from the resource. SCE indicates that the Commission should be evaluating whether the procurement of an RA-only resource complied with the 2016 Procurement Plan approved in D.16-09-007. There, SCE explained that it would be seeking RA-only energy storage resources through its 2016 solicitation. D.16-09-007 approved SCE's 2016 Procurement Plan authorizing SCE to solicit RA-only energy storage resources.[45] Thus, SCE's solicitation of RA-only energy storage resources is consistent with its procurement plan and complies with the procurement authority granted

[43] TURN Opening Brief at 1.

[44] TURN Opening Brief at 1.

[45] D.16-09-007 at 4, 25 (OP 2).

by the Commission in D.16-09-007. In addition, here, SCE does not forecast a distribution deferral need at the Milpas circuit, which is where the project connects to SCE's system. SCE indicates that if a distribution deferral need arises in the future, SCE will consider all feasible options for meeting the need, including assessment of whether the Powin facility has the capability to meet the need, and if it does, whether it is cost competitive with other options to meet the need.

SCE suggests it would be unreasonable to place additional one-off reporting requirements on this project. The Powin contract is an RA-only contract, so SCE would not be bidding the resource into the market or metering it. Therefore, SCE will not have access to the information being requested, nor is Powin contractually required to provide this information to SCE. The sole contracted purpose for the Powin facility is to provide RA, therefore, it should only be evaluated on how it meets its contract terms and conditions.

In addition, SCE's management of its contracts is reviewed annually in its Energy Resource Recovery Account (ERRA) Review filing. Adding an additional reporting requirement to evaluate performance based on information that SCE does not have access to and that the resource owner is not obligated to report is unreasonable and unnecessary.

We approve the Powin contract. However, if a distribution deferral need arises at the Milpas circuit in the future, we direct SCE to consider all feasible options for meeting the need, including assessment of whether the Powin facility has the capability to meet the need and, if it does, whether it is cost competitive with other options.

6.2. PG&E

PG&E requests approval of five Capacity Storage Agreements (CSA) and one PSA. To carry out its evaluation, PG&E started with Net Market Value, and then looked at PAV. Then, in consideration of other qualitative factors, PG&E chose highly ranked offers that would lead to a diverse set of final agreements. PG&E executed a collection of agreements that provide a diversity of sizes, online dates, and terms. In sum, these

executed agreements represent good value while providing portfolio diversity, which is critical to developing knowledge of how storage can meet customer needs.

6.2.1. PG&E's Five Capacity Storage Agreements

PG&E requests approval of five CSAs, totaling 145 MW of storage. PG&E plans to use these energy storage contracts to help meet its RA obligations. The key terms of the CSAs are very similar, with limited differences in the CSA with Calstor, LLC for a behind-the-meter project.

Under the CSAs, PG&E is entitled to all of the capacity attributes that can be derived from the operational characteristics guaranteed in the contract. The operational characteristics used to calculate the capacity attributes were included in each seller's offer and are fixed values that were agreed upon by both parties at execution. Capacity attributes are inclusive of system, local and flexible RA, as well as any other future capacity attributes that may be defined by the CAISO, a governmental authority, or other person having jurisdiction. These capacity attributes are considered the product.

The CSAs require that projects take all steps necessary to allow PG&E to count the capacities noted above towards its requirements under D.13-10-040, or any subsequent related Commission decision. The sellers also agree to comply with CAISO requirements to enable PG&E to apply the capacity of each project to its RA requirements during the delivery term.

The conditions precedent to the initial delivery date include Commission approval, seller's completion of the energy storage and interconnection facilities, seller's posting of collateral, seller's execution of required CAISO agreements, and seller's submission to PG&E of seller's Project Safety Plan, among other things.

No party contested the reasonableness of the price and terms of PG&E's five proposed CSAs. The price and terms of PG&E's five proposed CSAs are reasonable.

6.2.2. PG&E's Purchase and Sale Agreement

In addition to the five CSAs, PG&E requests approval of one PSA for the Llagas energy storage project. PG&E's proposal is for it to own the Llagas energy storage

project once operational. The executed PSA provides 20 MW of energy storage to enable PG&E to maintain distribution reliability, to participate in CAISO markets, and contribute to PG&E's satisfaction of its RA requirements.

The proposed Llagas energy storage project provides 20 MW of capacity from a four-hour lithium-ion energy storage resource located in Gilroy, in Santa Clara County, California. The land for the project site is currently owned by PG&E and utilized for construction material storage. The project will help maintain distribution reliability by shaving peak loads on Llagas Bank 3.

The proposed Llagas energy storage project is to be designed and constructed by Tesla, Inc (Tesla). Tesla has demonstrated significant experience with the deployment of utility-scale energy storage facilities, including a similarly sized 20 MW, four-hour system deployed for SCE in 2016 adjacent to the Mira Loma substation.

ORA raised numerous issues of concern with the Llagas project, none that independently nor in totality present compelling analyses to reject the project. ORA raises concerns about the cost-effectiveness of the Llagas project, indicates that it is cost prohibitive for a distribution deferral project, indicates that PG&E's comparison to the traditional substation bank upgrade is flawed, and asserts uncertainty on whether PG&E has already received funds to replace the substation in three consecutive general rate cases. Additionally, ORA asserts issues with the need for the project, indicating the Llagas PSA will not come online in time to meet PG&E's forecasted substation overload.

Regarding the cost of the Llagas distribution deferral project, PG&E asserts that it was one of the most economically viable projects among the offers submitted in the 2016 Energy Storage and Distribution Deferral RFO. Accounting for the costs and expected benefits as an energy storage and distribution deferral project, Tesla's Llagas offer was valued at or near the top of the list of offers. This conclusion remains unchanged under PG&E's most recent forward market value estimates.

ORA argues that the proposed Llagas storage project is not cost-effective relative to an immediate transformer upgrade, comparing various combinations of the estimated

capital costs, and the revenue requirement streams associated with the estimated capital costs of the two projects.[46] ORA's comparison does not reflect the expected impact of the two projects on PG&E's distribution customers. However, when not only capital costs, but also expected market revenues, are taken into account, the Llagas project was one of the most economically viable projects among offers submitted in the PG&E's 2016 Energy Storage and Distribution Deferral RFO.

ORA states that PG&E has requested and received funding authorization for a project at the Llagas substation in three consecutive General Rate Cases (GRC) starting with its 2011 GRC. PG&E responds by indicating it requested funding in its 2011, 2014 and 2017 GRCs to upgrade the bank capacity at Llagas. However, settlement agreements adopted with modifications and clarifications in PG&E's various GRCs specify overall expense and capital expenditure amounts for Electric Distribution as a whole. ORA indicated that PG&E reprioritized other work on its distribution network.[47] Given that PG&E reprioritized other more immediate work on its distribution system, we are not compelled to reject the project due to the issue being raised in previous GRCs. However, future PG&E GRCs should take into account this funding approval for this distribution deferral asset.

While PG&E indicates the overload will occur in 2022, ORA indicates that through PG&E's data requests, the Llagas substation's Bank 3 would overload in the summer of 2021. With a capacity rating of 44.6 MW indicated by ORA, ORA indicates the forecasted peak load in 2021 of 44.8 MW as reason to deny the energy storage project. However, we find this explicit reasoning to approve the project that will alleviate overloading at the Llagas substation compelling. PG&E must take action to ensure that the system will remain reliable prior to the commercial online date of this project.

[46] ORA Closing Brief (Confidential Version) at 9.

[47] Exhibit ORA-01 at 1-13.

However, the fact that a small need may materialize months early is not sufficient reasoning to deny the project.

The Llagas energy storage project is cost competitive, and the record substantiates no compelling reasoning to reject the project. As a result, we find that the price and terms of PG&E's proposed Llagas energy storage project are reasonable.

7. Have SCE and PG&E Met Their AB 2514 Storage Procurement Obligations?

Prior to this RFO, SCE had already met its 2016 AB 2514 energy storage target. While the Powin project will not count towards SCE's 2016 target, it will fulfill a portion of SCE's obligation for its 2018 target.

PG&E's energy storage target for 2016 was established as 65 MW of transmission domain storage, 40 MW of distribution domain storage, and 15 MW of customer domain storage for a total need of 120 MW. PG&E included additional procurement to meet its existing shortfall resulting from prior project failure and Commission rejections. Therefore, PG&E's total need is approximately 160 MW. Regarding customer domain energy storage from the self-generation incentive program, 9.54 MW counts towards PG&E's 15 MW customer domain target for 2016, resulting in a 2016 target of 5.46 MW for the customer domain.[48] This decision authorizes 135 MW of transmission domain storage, 20 MW of distribution domain storage, and 10 MW of customer domain storage. With this resulting procurement, PG&E will be ahead of its 2016 target with the excess procurement applying to its 2018 AB 2514 energy storage target. D 13-10-040 affords specific cross-domain flexibility; in this case, 20 MW PG&E's distribution domain target is being met by storage interconnected at the transmission level.[49]

[48] Exhibit PGE-01 at 1-4.

[49] D. 13-10-040 at Appendix A-2.

8. Rate Recovery and Cost Allocation

8.1. SCE

SCE proposes to recover the costs of the Powin resource in its ERRA Balancing Account.

SCE plans to forecast the annual costs of the resource in its annual ERRA Forecast Application. In the ERRA Forecast Application the Commission determines a Power Charge Indifference Adjustment (PCIA) rate that would include the above market costs of SCE's non-CAM generation portfolio. The ERRA balancing account will be used to record differences between the forecast for these storage costs included in generation rates, and the actual recorded cost. Over-collections recorded in the ERRA are refunded to customers in the subsequent year. Likewise, under-collections recorded in the ERRA are recovered from customers in the subsequent year. Along with all of SCE's power procurement costs, the recorded costs for these storage projects will be reviewed by the Commission in SCE's annual ERRA Compliance Review Application consistent with the Commission approved process for reviewing costs recorded in the ERRA balancing account.

Here the resource selected in this solicitation serves the Generation and Market function. Thus, SCE proposes to recover the costs from all bundled service customers through generation rates, and from departing load customers who depart bundled service after the execution of these contracts through their PCIA rate.

No party contested SCE's proposed rate recovery and cost allocation proposal. SCE's proposal for rate recovery and cost allocation is consistent with prior Commission policy and is approved.

The PCIA treatment is subject to modification upon future Commission direction on the rate recovery of the above market costs of existing energy resource contracts.

8.2. PG&E

8.2.1. Cost Recovery for the Five CSAs

PG&E proposes that costs incurred from the contracts under the five CSAs would be recovered in its ERRA Balancing Account. Like other long-term procurement, the energy storage contracts would be included in the appropriate vintages of PG&E's PCIA portfolios.

No party contested PG&E's proposed rate recovery and cost allocation proposal for the five CSAs. We find that PG&E's proposal for rate recovery and cost allocation is reasonable and consistent with prior Commission policy and should be approved. The PCIA treatment is subject to modification upon future Commission direction on the rate recovery of the above market costs of existing energy resource contracts.

8.2.2. Cost Recovery for the PSA

PG&E requests approval for an energy storage resource PSA that will be connected at the distribution level, be utility-owned, and provide a distribution reliability function. This resource will also participate in the wholesale energy market and will provide RA benefits that could be sold or otherwise monetized to generate revenues.

For the interim period of 2021-2022, PG&E proposes to reflect $4.7 million in the revenue requirement associated with this project, based on the cost estimates presented in Chapter 5 of its direct testimony for its 2020 GRC.[50] During 2021-2022, PG&E proposes to use a new Distribution Revenue Adjustment Mechanism (DRAM) balancing account line item to capture the actual revenues generated by this resource when it is not prioritized to provide distribution reliability service.

Beginning in 2023, PG&E proposes that the revenue requirement for this distribution resource be recovered in distribution rates and rolled into PG&E's base revenue requirement as approved in PG&E's 2023 GRC. PG&E proposes to continue to

[50] Exhibit PGE-01 at Chapter 5.

use the new DRAM line item to capture the actual revenues generated by this resource during periods when it is not prioritized to provide distribution reliability service. PG&E proposes continuing this new DRAM line item for the life of the project.

PG&E proposes that once the distribution reliability resource is online, its capacity will be prioritized to provide distribution reliability services. However, during periods when it is not providing distribution reliability services, PG&E intends to use the project to generate energy and ancillary services revenue in the wholesale market when the resource is not prioritized to provide distribution reliability services. During those periods, the resource can also generate wholesale market revenues to maximize its value and reduce the distribution reliability function cost. This is reflected in PG&E's project valuation.

PG&E also proposes to monetize the project's RA value when the resource is not prioritized to provide distribution reliability services. As part of the cost recovery pilot, PG&E proposes that the project's charging costs and market revenues would be tracked via the CAISO Service Account Identification assigned to the unit. These amounts are to be included in distribution rates through the new DRAM line item, which PG&E has proposed in this proceeding.

PG&E additionally proposes to track the actual monetized value of the project's RA capacity through this new DRAM line item. This mechanism allows the realized wholesale market value of the resource to flow to the same set of customers financing the distribution reliability service, thereby reducing the overall cost of the project to the customers receiving the reliability service. As part of this project, PG&E proposes that the amount recorded in the new DRAM line item in a given year be amortized in rates the subsequent year, effectively crediting back to customers the revenues from the monetized RA.

Because these project revenue streams were valued consistent with other energy storage projects in the RFO using the approved PAV methodology, PG&E requests that the Commission make an upfront determination on reasonableness of the expected net

market cost and revenues and RA benefits. In other words, the actual net costs and revenues generated through market participation and monetization of RA benefits would not be subject to retroactive reasonableness review.

DACC, AReM, the CCA parties (The Joint Parties) assert that PG&E has not provided sufficient information regarding its proposed cost recovery methodology for the multi-use Llagas project to determine whether the proposal is reasonable, equitable and competitively neutral.

The Joint Parties also suggest the Commission adopt a usage-based cost recovery methodology for multi-use storage that was adopted in D.14-10-045, and which is consistent with the Commission's policy to base cost recovery for storage on regulatory function. They recommend the Commission defer a decision on the appropriate cost recovery methodology for the Llagas project and instead consider and establish a uniform cost recovery methodology for multi-use storage in the IOUs' 2018 storage procurement plans proceeding.

The Joint Parties indicate, however, that if the Commission approves the proposed cost recovery,

- The mechanism should be interim and subject to revision until a true-up consistent with the uniform cost allocation policy for multi-use storage is adopted by the Commission;
- PG&E's proposal to monetize the RA value of the Llagas Project should be rejected and, instead, the Commission should allocate the RA value of the resource proportionally to Energy Service Providers and other non-utility Load Serving Entities' (LSE) serving load in PG&E's service territory;
- PG&E's request for an upfront reasonableness determination of the market revenues and RA value obtained for the Llagas Project should be rejected, and
- The capacity value of the Llagas Project should be applied to the automatic limiter consistent with D.17-04-039 and Resolution E-4892.5.

In response, PG&E indicates that the Commission has not provided specific guidance on the issue of dual-use (or multi-use) assets. In D.14-10-045, the 2014

Procurement Plan Decision, the Commission states "[i]n this decision, we defer the resolution of the proposed 'Dual Use' cost recovery proposal for combined generation/ distribution energy storage for the initial 2014 biennial procurement period. We direct SDG&E, PG&E, and SCE to file Dual Use cost recovery methodologies for combined generation/distribution energy storage if and when they propose such projects to the Commission."[51]

PG&E agrees that the cost recovery adopted in this proceeding for the Llagas project should not be automatically applied to later similar projects. This is because the Commission has not yet adopted a general policy on the cost allocation for distribution deferral or multi-use application energy storage facilities. In its testimony, PG&E explicitly recommended that this cost-recovery proposal be considered precedential for other projects.

PG&E further agrees that it makes sense for the Commission to consider a uniform policy defining the appropriate cost recovery options for multi-use energy storage. However, PG&E advocates that the general issue should not be added to the 2018 Energy Storage Plan Proceeding. The Commission is currently hosting a series of workshops in the MUA working group. PG&E recommends that the issue of cost recovery for multi-use energy storage be addressed in this working group venue, or in a subsequent MUA rulemaking.

PG&E advocates that an important part of the regulatory approval of any project is how its costs will be recovered from customers. From PG&E's perspective, it is appropriate to recover the costs of the Llagas project in distribution rates. PG&E advocates that there is no need to postpone the cost allocation decision for the Llagas project because PG&E, AReM, and DACC each agree that the treatment adopted on this project will not set precedent.

[51] D.14-10-045 at 48.

PG&E indicated it would be comfortable allocating RA as proposed by the Joint Parties, conditional upon the Commission determining the appropriate process for allocation. PG&E clarified that the volume of RA available for allocation would be the residual capacity that is not being reserved for the distribution function, which takes priority and will vary with grid conditions.

PG&E agrees that if its cost allocation proposal is adopted, then the Llagas storage capacity should apply to the automatic limiter.

8.2.2.1. Determination of Cost Recovery for the PSA

We grant PG&E's requested cost recovery mechanism for the Llagas energy storage facility PSA. However, this approval is not precedential for future multiple-use application, including distribution deferral energy storage contracts. This approval of the mechanism of cost recovery for the Llagas PSA is subject to modification with the adoption of a uniform policy for cost recovery for MUA or distribution deferral energy storage contracts.

The Joint Parties make a compelling showing that the Commission should proceed forward with caution in determining a cost recovery mechanism for distribution deferral energy storage projects. Often, what is set as an interim policy can hold strong precedent in the absence of compelling alternate direction. The major issue, however, is that the Joint Parties did not provide a compelling case for an alternative methodology beyond a high-level usage based proposal.

There is insufficient record to determine if and how the RA benefit should be allocated to third party LSE's serving load in PG&E's distribution service territory. The Joint Parties make a strong showing that all RA from the facility should be shared on a load proportional basis, while PG&E makes a compelling showing that the RA should be dedicated to the distribution deferral function and any residual RA that is serving solely a generation function should be shared on a load proportional basis. Given this equipoise, the request for a proportion of the RA from the distribution deferral to be shared with third party LSEs is denied, although it may occur through the later development of a

uniform cost recovery and allocation mechanism. Creating a new RA sharing mechanism for one project would likely create a significant and uneconomical administrative burden.

We accept, on an interim basis until a uniform policy is developed, PG&E's proposal that the project's charging costs and market revenues would be tracked via the CAISO Service Account Identification assigned to the unit, and that these amounts be included in distribution rates through a new DRAM line item. We also accept PG&E's proposal, on an interim basis, to track the actual monetized value of the project's RA capacity when the resource is not prioritized to provide distribution reliability services in this new DRAM line item. This mechanism allows the realized wholesale market value of the resource to flow to the same set of customers financing the distribution reliability service, thereby reducing the overall cost of the project to the customers receiving the reliability service. As part of this pilot, we accept PG&E's proposal that the amount recorded in the new DRAM line item in a given year be amortized in rates the subsequent year.

PG&E and the Joint Parties both agreed that the capacity value of the Llagas Project should be applied to the automatic limiter consistent with D.17-04-039 and Resolution E-4892.5. The Commission agrees.

We accept PG&E's proposal based on the cost estimates presented in its direct testimony to reflect $4.7 million in revenue requirement associated with the project in its 2020 GRC on the condition that PG&E prudently manages the agreement with Tesla. During 2021-2022, PG&E proposes to use a new DRAM.

Subject to change from the development of a uniform cost recovery mechanism applicable to multiple use application or distribution deferral energy storage resources, we accept PG&E's proposal that beginning in 2023, the revenue requirement for this distribution resource be rolled into PG&E's base revenue requirement as approved in PG&E's 2023 GRC, and be recovered in distribution rates. Absent the development of a uniform cost recovery mechanism, PG&E may continue to use the new DRAM line item

to capture the actual revenues generated by this resource during periods when it is not prioritized to provide distribution reliability service.

9. Comments on Proposed Decision

The proposed decision of ALJ Stevens in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on_____, and reply comments were filed on _____ by _____.

10. Assignment of Proceeding

Carla J. Peterman is the assigned Commissioner and Michelle Cooke and Brian Stevens are the assigned Administrative Law Judges (ALJ) in this proceeding.

11. Exhibit Identification, Confidential Treatment, and Outstanding Procedural Matters

This proceeding included the following exhibits:

SCE-01: Testimony on the Results of Its 2016 Energy Storage and Distribution Deferral Request for Offers

SCE-02: Appendices to the Testimony of SCE on the Results of Its 2016 Energy Storage and Distribution Deferral Request for Offers

SCE-03: Rebuttal Testimony of Southern California Edison Company (U338E) on the Results of Its 2016 Energy Storage and Distribution Deferral Request for Offers

PGE-01: Pacific Gas and Electric Company Results of 2016 Energy Storage Solicitation Prepared Testimony (Confidential as Volume 1-4)

PGE-02: Pacific Gas and Electric Company Results of 2016 Energy Storage Solicitation Rebuttal Testimony

TURN-01: Prepared Testimony of Eric Borden Addressing the Proposal of Southern California Edison for Energy Storage Procurement

ORA-01: Testimony on Pacific and Gas and Electric Company's Application for Approval of Agreements Resulting from its 2016-2017 Energy Storage Solution and Related Cost Recovery

AReM-01: Testimony on Behalf of the Alliance for Retail Energy Markets and Direct Access Customer Coalition

SCE and PG&E's testimony includes confidential materials and therefore public (SCE-01, SCE-02, SCE-03, PGE-01, PGE-02, ORA-01, TURN-01, and AReM-01) and confidential (SCE-01C, SCE-02C, SCE-03C, PGE-01C, PGE-02C ORA-01C, TURN-01C) versions of several exhibits were submitted. Consistent with the requirements of D.06-06-066, SCE-01 and PGE-01 include a declaration setting forth which data is proposed for confidential treatment and why.

The parties have proposed that the following exhibits be admitted under seal because they contain market-sensitive data: Exhibits SCE-01C, SCE-02C, SCE-03C, PGE-01C, PGE-02C ORA-01C, TURN-01C, and AReM-01C. Good cause being shown, these exhibits are admitted under seal. Exhibits SCE-01C, SCE-02C, SCE-03C, and TURN-01C are admitted under seal for durations consistent with the timing specified in Exhibit SCE-01: A-3 through A-9 and A-10 to A-11. Exhibits PGE-01C, PGE-02C, ORA-01C, and AReM-01C are admitted under seal for durations consistent with the timing specified in Exhibit PGE-01: D-9 through D-13. All marked exhibits (SCE-01, SCE-01C, SCE-02, SCE-02C, SCE-03, SCE-03C, PGE-01, PGE-01C, PGE-02, PGE-02C, ORA-01, ORA-01C, TURN-01, TURN-01C, AReM-01, and AReM-01C) are received into evidence as of the date of this decision.

The Commission affirms all rulings made by the assigned Commissioner and assigned ALJs. All motions not previously ruled on are denied as moot.

Findings of Fact

1. SCE and PG&E issued energy storage and distribution deferral requests for offers in late 2016.

2. SCE and PG&E both considered third party owned energy storage systems, and PG&E additionally considered utility owned energy storage systems, in their respective RFOs.

3. The respective 2016 RFOs for SCE and PG&E both comply with the 2016 Energy Storage Plan decision.

4. SCE selected an RA-only contract for 10 MW of capacity with a 10-year contract length with Powin SBI, LLC.

5. PG&E selected an RA-only contract for the Cascade Energy Storage project developed by Enel that will provide 25 MW of capacity with a 20-year contract length.

6. PG&E selected an RA-only contract for the Kingston Energy project developed by Enel that will provide 50 MW of capacity with a 10-year contract length.

7. PG&E selected an RA-only contract for the Sierra Energy Storage project developed by Enel that will provide 10 MW of capacity with a 10-year contract length.

8. PG&E selected an RA-only contract for the Diablo Energy Storage project developed by LS Power that will provide 50 MW of capacity with a 10-year contract length.

9. PG&E selected an RA-only contract for the Calstor, LLC project developed by Calstor, LLC that will provide 10 MW of capacity with a 10-year contract length.

10. PG&E selected a purchase and storage agreement with Tesla that will primarily provide distribution deferral services from 20 MW of capacity with a 20-year duration.

11. The independent evaluator, Sedway Consulting, concluded that SCE did a good job administering its 2016 Energy Storage and Distribution Deferral RFO.

12. The independent evaluator, Merrimack Energy Group, concluded that PG&E implemented the 2016 Energy Storage and Distribution Deferral RFO in an exemplary, clear, and consistent manner, marked by an overall objective to maintain a reasonably transparent and competitive solicitation.

13. Despite having met its 2016 AB 2514 target for energy storage procurement, SCE conducted a 2016 energy storage solicitation to maintain momentum in transforming the energy storage market.

14. SCE utilized a LCBF methodology to value the contracts that resulted from its RFO.

15. SCE's contract with Powin Energy furthers the Commission's energy storage procurement policy for grid optimization, the integration of renewables, and an overall reduction in greenhouse gas emissions.

16. The Commission has yet to establish a uniform cost-effectiveness metric for energy storage systems.

17. The combination of quantitative and qualitative benefits persuasively indicates that SCE's proposed Powin contract is cost effective.

18. The contracts selected by PG&E are cost effective.

19. The Llagas distribution deferral energy storage project complies with the Commission's direction on MUA energy storage systems.

20. The price and terms of the contracts proposed by SCE and PG&E are reasonable.

21. It was reasonable for SCE to sign RA-only energy storage contracts.

22. It would not be reasonable to establish individual data reporting requirements on a one-off basis for the Powin contract with SCE.

23. If a distribution deferral need arises at the Milpas circuit in SCE's system, the Powin contract may provide the necessary services to offset a distribution upgrade.

24. SCE's request for cost recovery for the Powin project in the ERRA proceeding is reasonable, with the condition that the indifference methodology may be updated by the Commission.

25. PG&E's request for cost recovery for the five CSA projects in the ERRA proceeding is reasonable, with the condition that the indifference methodology may be updated by the Commission.

26. PG&E's request to reflect $4.7 million in revenue requirement associated with the Llagas PSA in the interim period 2021-2022, on the condition that PG&E prudently manages the agreement, is reasonable.

27. PG&E's requested cost recovery for the Llagas PSA with the condition that the cost recovery mechanism for the project may be updated to conform with a future

uniform policy for cost recovery for multiple use application or distribution deferral energy storage projects is reasonable.

28. It is not reasonable to develop a new one-off mechanism for allocating RA from the Llagas PSA to third party LSEs, although that policy may be developed in a future uniform policy for multiple use application or distribution deferral energy storage projects.

29. The automatic limiter, consistent with D.17-04-039 and Resolution E-4892, applies to projects like the Llagas project.

Conclusions of Law

1. SCE's Application should be approved with the conditions detailed in this decision.

2. PG&E's Application should be approved with the conditions detailed in this decision.

3. SCE's 2016 Energy Storage and Distribution Deferral Request for Offers and its respective conduct are reasonable.

4. PG&E's 2016 Energy Storage and Distribution Deferral Request for Offers and its respective conduct are reasonable.

5. The contract with Powin Energy that SCE selected in its 2016 Energy Storage and Distribution Deferral Request for Offers should be considered reasonable and approved.

6. Payments made by SCE pursuant to the contract with Powin Energy that SCE selected in its 2016 Energy Storage and Distribution Deferral Request for Offers should be eligible to be recovered in full by SCE through the ERRA proceeding, subject to Southern California Edison's prudent administration of the contract.

7. If a distribution deferral need arises at the Milpas circuit in the future, SCE should consider all feasible options for meeting the need, including assessment of whether the Powin facility has the capability to meet the need and, if it does, whether it is cost competitive with other options.

8. SCE's energy storage contract resulting from the 2016 Energy Storage and

Distribution Deferral Request for Offers should be eligible to count towards SCE's energy storage target pursuant to D.13-10-040.

9. PG&E's Capacity and Storage Agreements and Purchase and Sale Agreement resulting from the 2016 Energy Storage and Distribution Deferral Request for Offers should be considered reasonable and eligible to count towards PG&E's energy storage target pursuant to D.13-10-040.

10. PG&E should be authorized to fully recover the cost of this energy storage procurement in rates.

11. The costs associated with PG&E's proposed Capacity and Storage Agreements should be eligible for recovery in PG&E's ERRA and to be reflected in the procurement cost indifference amount calculations consistent with Commission policy.

12. PG&E should be authorized to fully recover the costs associated with the Purchase and Sale Agreement with Tesla, Inc. in rates subject to PG&E's prudent administration of the agreement.

13. PG&E should be authorized to recover a total of $4.7 million in rates in 2021 and 2022 in connection with its approved Energy Storage Agreement with Tesla, Inc., subject to PG&E's prudent administration of the agreement with Tesla, Inc.

14. The costs of PG&E's Energy Storage Agreement with Tesla, Inc. should be authorized to be recovered in PG&E's distribution revenue adjustment mechanism, offset by net revenues associated with the project from participation in the wholesale energy, ancillary services, and capacity markets during periods when the project is not prioritized to provide distribution reliability service, subject to PG&E's prudent administration of the agreement.

15. The cost recovery mechanism adopted in this decision for Energy Storage Agreement with Tesla, Inc. should be subject to change if the Commission adopts a uniform cost recovery mechanism applicable to multiple use application or distribution deferral energy storage resources.

16. The capacity value of the Purchase and Sale Agreement with Tesla, Inc. should be applied to the automatic limiter consistent with D.17-04-039 and Resolution E-4892.

17. Exhibits SCE-01, SCE-02, SCE-03, PGE-01, PGE-02, TURN-01, ORA-01, AReM-01 should be identified and received into evidence as of the date of this decision.

18. Exhibits SCE-01C, SCE-02C, SCE-03C, and TURN-01C should be admitted under seal for durations consistent with the timing specified in Exhibit SCE-01: A-3 through A-9 and A-10 to A-11.

19. Exhibits PGE-01C, PGE-02C ORA-01C, and AReM-01C should be admitted under seal for durations consistent with the timing specified in Exhibit PGE-01: D-9 through D-13.

20. Application 17-12-002 and 17-02-003 should be closed.

O R D E R

IT IS ORDERED that:

1. Southern California Edison Company's Application is approved with the conditions detailed in this decision.

2. Pacific Gas and Electric Company's Application is approved with the conditions detailed in this decision.

3. Payments made by Southern California Edison Company pursuant to the contract with Powin Energy that Southern California Edison Company selected in its 2016 Energy Storage and Distribution Deferral Request for Offers are eligible to be recovered in full by Southern California Edison through the Energy Resource Recovery Account proceeding, subject to Southern California Edison Company's prudent administration of the contract.

4. If a distribution deferral need arises at the Milpas circuit in the future, we direct Southern California Edison Company to consider all feasible options for meeting the need, including assessment of whether the Powin facility has the capability to meet the need and, if it does, whether it is cost competitive with other options.

5. Southern California Edison Company's energy storage contract resulting from the 2016 Energy Storage and Distribution Deferral Request for Offers is eligible to count towards Southern California Edison's energy storage target pursuant to Decision 13-10-040.

6. Pacific Gas and Electric Company's Capacity and Storage Agreements and Purchase and Sale Agreement resulting from the 2016 Energy Storage and Distribution Deferral Request for Offers are reasonable and eligible to count towards Pacific Gas and Electric Company's energy storage target pursuant to Decision 13-10-040.

7. The costs associated with the Pacific Gas and Electric Company's proposed Capacity and Storage Agreements are eligible for recovery in Pacific Gas and Electric Company's Energy Resource Recovery Account and to be reflected in the procurement cost indifference amount calculations consistent with Commission policy.

8. Pacific Gas and Electric Company is authorized to fully recover the costs associated with the Purchase and Sale Agreement with Tesla, Inc. in rates subject to Pacific Gas and Electric Company's prudent administration of the agreement.

9. Pacific Gas and Electric Company is authorized to recover a total of $4.7 million in rates in 2021 and 2022 in connection with its Purchase and Sale Agreement with Tesla Inc., subject to Pacific Gas and Electric Company's prudent administration of the agreement with Tesla, Inc.

10. The costs of Pacific Gas and Electric Company's Purchase and Sale Agreement with Tesla, Inc. is authorized to be recovered in Pacific Gas and Electric Company's distribution revenue adjustment mechanism, offset by net revenues associated with the project from participation in the wholesale energy, ancillary services, and capacity markets during periods when the project is not prioritized to provide distribution reliability service, subject to Pacific Gas and Electric Company's prudent administration of the agreement.

11. The cost recovery mechanism adopted in this decision for the Purchase and Sale Agreement with Tesla, Inc. is subject to change if the Commission adopts a uniform cost

recovery mechanism applicable to multiple use application or distribution deferral energy storage resources.

12. The capacity value of the Purchase and Sale Agreement with Tesla, Inc. is applied to the automatic limiter consistent with Decision 17-04-039 and Resolution E-4892.

13. Exhibits SCE-01, SCE-02, SCE-03, PGE-01, PGE-02, TURN-01, ORA-1, and AReM-01 are identified and received into evidence as of the date of this decision.

14. Exhibits SCE-01C, SCE-02C, SCE-03C, and TURN-01C are admitted under seal for durations consistent with the timing specified in Exhibit SCE-01: A-3 through A-9 and A-10 to A-11.

15. Exhibits PGE-01C, PGE-02C ORA-01C, and AReM-01C are admitted under seal for durations consistent with the timing specified in Exhibit PGE-01: D-9 through D-13.

16. Applications 17-12-002 and 17-12-003 are closed.

This order is effective today.

Dated _____, at San Francisco, California.