PUBLIC UTILITIES COMMISSION 505 Van Ness Avenue San Francisco CA 94102-3298



Pacific Gas & Electric Company ELC (Corp ID 39) Status of Advice Letter 5826E As of November 17, 2020

Subject: System Reliability Contracts Resulting from PG&E's Phase 1 Request for Offers Under

D.19-11-016

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May 18, 2020

Advice 5826-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: System Reliability Contracts Resulting from PG&E's Phase 1 Request for Offers Under D.19-11-016

I. <u>Purpose</u>

Pursuant to Decision (D.) 19-11-016 (Decision), Pacific Gas and Electric Company (PG&E) hereby submits this Advice Letter to obtain approval from the California Public Utilities Commission (Commission or CPUC) of seven agreements resulting from PG&E's 2020 System Reliability Request for Offers – Phase 1 (SR RFO – Phase 1):

Counterparty (Project Name)	Technology	Commercial Online Date	Initial Delivery Date	Term (Years)	Size (MW)
Dynegy Marketing and Trade, LLC (MOSS100 Energy Storage)	Lithium Ion Batteries	7/18/2021	10/1/2021	10	100
Diablo Energy Storage, LLC (Diablo Energy Storage – Tranche 1)			10/1/2021	15	50
Diablo Energy Storage, LLC (Diablo Energy Storage – Tranche 2)	Lithium Ion Batteries	7/18/2021	10/1/2021	15	50
Diablo Energy Storage, LLC (Diablo Lithium II Energy Storage – Tranche 3) Batterie		7/18/2021	10/1/2021	15	50
Gateway Energy Storage, LLC (Gateway Energy Storage)	Lithium Ion Batteries	7/18/2021	10/1/2021	15	50
NextEra Energy Resources Development, LLC (Blythe Energy Storage 110)	Lithium Ion Batteries	7/18/2021	10/1/2021	15	63
Coso Battery Storage, LLC (Coso Battery Storage)	Lithium Ion Batteries	7/18/2021	10/1/2021	15	60

II. Background

On November 13, 2019, the Commission issued D.19-11-016, which takes a number of steps to address the potential for system resource adequacy (RA) shortages beginning in 2021, including ordering incremental electric system reliability procurement by all load-serving entities (LSEs) operating within the California Independent System Operator's (CAISO's) balancing area to meet system RA needs for the period 2021-2023. The Decision requires incremental procurement of system-level qualifying RA capacity of 3,300 megawatts (MWs), of which PG&E is responsible for 716.9 MWs for its bundled customer portion. Further, the Decision requires that at least 50 percent of LSE resource responsibilities come online by August 1, 2021, at least 75 percent by August 1, 2022, and the remaining by August 1, 2023.

Additionally, the Decision affirms that the investor-owned utilities (IOUs) are to act as the backstop procurement agent for Customer Choice Aggregators (CCAs) and Energy Service Providers (ESPs) that choose not to voluntarily self-procure or that fail to meet their procurement responsibilities after electing to self-provide their assigned MWs of system RA capacity under the Decision. On April 15, 2020, Administrative Law Judge (ALJ) Fitch issued a ruling in Rulemaking 16-02-007 that informed PG&E that it must procure 48.2 MWs of system RA resources for LSEs that chose to opt-out of voluntarily self-providing their required portion.

Furthermore, the Decision outlined eligibility requirements for resources to meet the procurement obligations and requirements for the solicitation, including evaluation criteria and information that the IOUs need to include in advice letters presenting the results of their solicitation and approval of contracts.

On February 28, 2020, in compliance with the Decision, PG&E issued a System Reliability Request for Offers – Phase 1. PG&E now submits this Tier 3 Advice Letter seeking approval of seven cost-effective system RA agreements resulting from this RFO in order to meet its procurement responsibilities for the August 1, 2021 requirement.

III. Requirements for the Solicitation

The Decision provided that:

- 1. PG&E and the other large investor-owned utilities (IOUs) should conduct all-source solicitations to procure their incremental system RA obligations.¹
- 2. The IOU solicitations must consider existing as well as new resources, demandside resources, combined heat and power, and storage, as long as all resources

¹ D.19-11-016, Ordering Paragraph (OP) 7.

are shown to be incremental to the baseline resource list issued by an Administrative Law Judge Ruling.^{2,3}

- 3. The IOUs should utilize the Demand Response Auction Mechanism contract as a starting point for negotiations with any demand response resources that bid into the solicitations.⁴ For any demand-side resources, the incrementality principles adopted in D.16-12-036 should be used as a starting point for negotiations.
- 4. The IOUs solicitations may not consider natural gas generation turbines at new sites, even if storage is added, except for:⁵
 - a. generation at new facilities or new sites that utilize biomethane;
 - compressed air storage at new sites that uses natural gas in its process;
 and
 - c. expansion of existing natural gas capacity at existing sites, where permitted, but the addition of capacity must be shown to create emissions benefits, such as by reducing the rate of emissions from plant operations by adding storage, or by utilizing biomethane
- 5. The IOUs should adhere to all existing rules about utility and affiliate participation in utility-run solicitations.⁶

IV. Overview of 2020 System Reliability Request for Offers – Phase 1

PG&E developed and conducted the 2020 System Reliability Request for Offers – Phase 1 (SR RFO – Phase 1) in accordance with the requirements of the Decision. PG&E describes the RFO process below and provides additional detail about its Evaluation Methodology in Appendix J.

³ ALJ Fitch issued a Ruling on January 3, 2020, that finalized the baseline resources list for purposes of determining whether procurement required by the Decision counts as incremental to the baseline.

² Ibid.

⁴ D.19-11-016, OP 7.

⁵ D.20-03-028, OP 16, modified the solicitation eligibility of natural gas and biomethane resources to meet the incremental procurement requirements.

⁶ D.19-11-016, Conclusion of Law 31.

A. RFO Structure

PG&E issued its SR RFO – Phase 1 on February 28, 2020, to solicit offers from participants for the purchase of eligible system RA to come online by August 1, 2021, and count towards PG&E's requirement of 765.1 MWs.⁷

In its SR RFO – Phase 1 materials, PG&E provided detailed guidance on project requirements to prospective participants. Participants could submit offers to four agreement types: (1) Long Term Resource Adequacy Agreement (LT RAA), (2) Behindthe-Meter Resource Adequacy Agreement (BTM RAA), (3) Resource Adequacy Confirm (RA Confirm), and (4) Demand Response Agreement (DRA). The RFO required an online date of August 1, 2021, and a minimum size requirement of 10 MWs for all agreement types. Participants were required to demonstrate site control, that the project could be interconnected by August 1, 2021, and that the project would be incremental to the Integrated Resource Planning baseline resources list.⁸ Offers for both existing resources and aggregated behind-the-meter resources did not need to show proof of site control. Offers had to meet the applicable CPUC and CAISO requirements for deliverability, as well as any other requirements that will enable PG&E to receive the Resource Adequacy (RA) benefits associated with the agreements.

B. Participant Outreach

PG&E announced the issuance of the 2020 SR RFO – Phase 1 by email notification and provided four e-mail update notifications to PG&E's mailing list, which included approximately 2,700 recipients. The issuance email provided potential participants with information on the location of solicitation documents, participant webinar information, and important action items.

2020 SR RFO – Phase 1 documents were finalized for release on February 28, 2020, and remain available on the PG&E website.9 The documents include the 2020 SR RFO - Phase 1 solicitation protocol which includes information, requirements, and directions to submit a conforming offer. In addition to the 2020 SR RFO - Phase 1 dedicated PG&E established **RFO** Phase website. а 2020 SR 1 mailbox (SystemReliabilityRFO@pge.com) for participants and other interested parties to submit questions. PG&E received questions in the mailbox throughout the solicitation and posted the questions and corresponding answers that might have been useful to all participants in a frequently asked questions (FAQ) document on the website.

⁷ As noted above, PG&E was informed on April 15 via ALJ Ruling that it is required to procure an additional 48.2 MW for CCAs and ESPs in its TAC area that chose not to self-provide their required portion of incremental system RA. 765.1 MW is inclusive of the original 716.9 MW and additional 48.2 MW of backstop procurement.

⁸ CPUC IRP Website with Baseline list of resources: https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442463663

⁹ www.pge.com/rfo/systemreliabilityrfo-phaseone

On March 5, 2020, PG&E conducted a participants' conference via webinar to explain the 2020 SR RFO – Phase 1 solicitation protocol, form agreements, and the offer submittal process as well as answer questions from potential participants. About 80 individuals attended the webinar via phone or WebEx. PG&E posted the presentation to the 2020 SR RFO – Phase 1 website after the webinar.

On March 19, 2020, PG&E conducted a participants' conference via webinar to explain the 2020 SR RFO – Phase 1 offer form and the offer submittal process as well as answer questions from potential participants. About 25 individuals attended the webinar via phone or WebEx. PG&E posted the presentation to the 2020 SR RFO – Phase 1 website after the webinar.

PG&E requested offers for the 2020 SR RFO – Phase 1 by March 25, 2020, and notified participants via e-mail of their status regarding the shortlist on April 10, 2020. Shortlisted participants were notified in their email letter of additional requirements to remain on the shortlist and be eligible for negotiations. PG&E conducted calls with participants who were not shortlisted to provide feedback on their offers.

C. Offers Received

In response to the 2020 SR RFO – Phase 1, PG&E received 23 unique offers from 12 counterparties. Two of the offer variations were non-conforming for the following reasons:

- 1. Offered a product PG&E was not seeking.
- 2. Did not meet the minimum size requirements.

PG&E provided participants with an opportunity to revise offers that were missing information or required clarification by sending deficiency notices requesting further information by a specified date. Some participants were not able to rectify their non-conforming issues. Where 1) an offer was non-conforming and subsequent modification by the participant did not result in a conforming offer, or 2) where PG&E determined that an offer was in violation of the terms of RFO participation, that offer or variation was considered non-conforming and eliminated from further evaluation.

D. 2020 System Reliability RFO – Phase 1 Evaluation Protocol and Shortlist

PG&E evaluated offers based on Net Market Value (NMV). The evaluation methodology used to select shortlisted offers is described in Appendix J.

PG&E shortlisted offers based on a combination of NMV and other qualitative factors included in the solicitation protocol to achieve a shortlisted portfolio that could provide incremental system RA consistent with D.19-11-016. The shortlisted projects represented three different agreement types: LT RAA, RA Confirm, and DRA.

E. Negotiations

PG&E initiated negotiations with each participant that had a shortlisted offer. The negotiations began with a review of the counterparties' offer and a discussion of any updates to the project since the offer was submitted. PG&E also confirmed with participants if they would be able to accept the agreement as-is, noting that, per the Solicitation Protocol, PG&E did not intend to entertain substantive modifications to the form. All shortlisted participants were told that discussions would not necessarily result in an executed agreement.

F. Procurement Review Group

On April 6, 2020, PG&E emailed the Procurement Review Group (PRG) shortlist materials including: the 2020 SR RFO – Phase 1 requirements, offers received, and PG&E's proposed shortlist. This timing was to ensure that PG&E could incorporate any PRG feedback before participants were to be updated of their shortlist status on April 10, 2020.

On May 4, 2020, PG&E emailed the PRG the list of projects with which PG&E sought to execute agreements. This timing was to ensure that PG&E could incorporate any PRG feedback before agreement execution.

G. Independent Evaluator

PG&E engaged an Independent Evaluator (IE) from the Commission's approved list of IEs for the 2020 System Reliability RFO – Phase 1. The IE for this solicitation was Merrimack Energy, represented by Wayne Oliver and Keith Oliver.

The IE's involvement is outlined below:

- Reviewed and provided feedback on the RFO documentation.
- Reviewed and evaluated offers received and assisted in shortlist development.
- Discussed with PG&E the reasons the offers were considered non-conforming.
- Participated in feedback calls with participants that were not selected to be on the shortlist.
- Participated in contract negotiations that were held for each shortlisted participant.

The confidential version of the IE Report is provided in Appendix H1, and the public version of the IE Report is provided in Appendix H2.

V. <u>Selected Projects</u>

PG&E is requesting approval of seven agreements resulting from PG&E's SR RFO – Phase 1 as described below. The final executed agreements can be found in Confidential Appendices A - G and additional contract terms can be found in Confidential Appendix I. The seven agreements together total 423 MW of incremental system RA, which exceeds

PG&E's minimum procurement responsibility of 382.55 MW to be online by August 1, 2021.

A. Dynegy Marketing and Trade, LLC – Vistra MOSS100 Energy Storage Project

PG&E executed a LT RAA for the Vistra Energy MOSS100 Energy Storage project. The project will be owned by Dynegy Marketing and Trade, LLC (Dynegy). Dynegy is a subsidiary of Vistra Energy Corp. Vistra Energy Corp. merged with Dynegy Inc. in April 2018 and the combined entity manages a portfolio of 41 gigawatts (GW) of installed capacity across 20 states.

The project will be a transmission-connected, stand-alone lithium ion battery energy storage resource located in Moss Landing in Monterey County. The project is a 100 MW, four-hour duration project. The project has completed the CAISO Interconnection process and has an executed Interconnection Agreement. Appendix I provides additional project and LT RAA detail.

Term	Provision
Counterparty and Project	Dynegy Marketing and Trade, LLC, Vistra Energy MOSS100 Energy Storage
Technology	Lithium Ion Battery
Location	Moss Landing, CA
Type of Interconnection	Transmission
Term	10 years
Commercial Online Date	75 days prior to IDD (by July 18, 2021)
Initial Delivery Date	October 1, 2021
Capacity	100 megawatt (MW)
Discharge Duration	4 hours

B. Diablo Energy Storage, LLC - Diablo Energy Storage Project

PG&E executed three LT RAAs for the Diablo Energy Storage project, each for 50 MW. Diablo Energy Storage, LLC is a wholly owned subsidiary of Bolt Energy, LLC ("Bolt"), which is a subsidiary and affiliate of LS Power Associates, L.P. Bolt was formed on January 30, 2019 with \$215 million of equity commitments from its members for the express purpose of building, financing and operating a portfolio of four California battery energy storage projects in operation, under construction, or in development, including the Diablo Energy Storage project. LS Power Group personnel will be responsible for all services required for the Project, including engineering services, development support, financial support, and other services. As described below, the LS Power Team has a successful history of developing and operating battery storage, power generation, and electric transmission lines and substations serving the CAISO market.

The projects will be transmission-connected, stand-alone lithium ion battery energy storage resources located in Contra Costa County. The three agreements make a total of a 150 MW, four-hour duration project. The Diablo Energy Storage has a Large Generator Interconnection Agreement (LGIA) executed with PG&E and CAISO. Appendix I provides additional project and LT RAA detail.

Term	Provision
Counterparty and Project	Diablo Energy Storage, LLC, Diablo Energy Storage
Technology	Lithium Ion Battery
Location	Pittsburg, CA
Type of Interconnection	Transmission
Term	15 years
Commercial Online Date	75 days prior to IDD (by July 18, 2021)
Initial Delivery Date	October 1, 2021
Capacity	150 MW
Discharge Duration	4 hours

C. Gateway Energy Storage, LLC – Gateway Energy Storage

PG&E executed a LT RAA for the Gateway Energy Storage project. It is a wholly owned subsidiary of Bolt Energy, LLC ("Bolt"), which is a subsidiary and affiliate of LS Power Associates, L.P. Bolt was formed on January 30, 2019 with \$215 million of equity commitments from its members for the express purpose of building, financing and operating a portfolio of four California battery energy storage projects in operation, under construction, or in development, including the Diablo Energy Storage project. LS Power Group personnel will be responsible for all services required for the Project, including engineering services, development support, financial support, and other services. As described below, the LS Power Team has a successful history of developing and operating battery storage, power generation, and electric transmission lines and substations serving the CAISO market.

The project will be a transmission-connected, stand-alone lithium ion battery energy storage resource located in San Diego County. The project is a 50 MW, four-hour duration project. The Gateway Energy Storage has a Large Generator Interconnection Agreement (LGIA) executed with SDG&E and CAISO. Appendix I provides additional project and LT RAA detail.

Term	Provision
Counterparty and Project	Gateway Energy Storage, LLC, Gateway Energy Storage
Technology	Lithium Ion Battery
Location	San Diego, CA
Type of Interconnection	Transmission
Term	15 years
Commercial Online Date	75 days prior to IDD (by July 18, 2021)
Initial Delivery Date	October 1, 2021
Capacity	50 MW
Discharge Duration	4 hours

NextEra Energy Resources Development, LLC – Blythe Energy Storage 110

PG&E executed a LT RAA for the Blythe Energy Storage 110 project. NextEra Energy Resources Development, LLC (NEER) is a wholly owned subsidiary of NextEra Energy Inc., the largest wholesale generator of clean power in the United States. NEER, together with its affiliated entities, is the world's largest generator of renewable energy from the wind and sun. NEER is one of the largest wholesale generators of electric power in the U.S., with approximately 20,700 MW of net generating capacity across 36 states. Through its subsidiaries, NEER currently owns, develops, constructs, manages and operates electric generation facilities.

The project will be a transmission-connected, lithium ion battery energy storage resource and is co-located with an existing 110 MW solar project built in 2016 located in Riverside County. The project is a 63 MW, four-hour duration project. In December 2019 NextEra submitted a Material Modification Request to the CAISO to transfer 101 MW of deliverability from solar to storage, thereby allowing up to 101 MW of storage with Full Capacity Deliverability Status at the site. Appendix I provides additional project and LT RAA detail.

Term	Provision
Counterparty and Project	NextEra Energy Resources Development, LLC, Blythe Energy Storage 110
Technology	Lithium Ion Battery
Location	Blythe, CA
Type of Interconnection	Transmission
Term	15 years
Commercial Online Date	75 days prior to IDD (by July 18, 2021)
Initial Delivery Date	October 1, 2021
Capacity	63 MW
Discharge Duration	4 hours

E. Coso Battery Storage, LLC – Coso Battery Storage

PG&E executed a LT RAA for the Coso Battery Storage project. Coso Battery Storage, LLC is a wholly owned subsidiary of CGP Holdings, LLC. Coso Battery Storage will have an Asset Management Agreement with Middle River Power LLC that will empower Middle River Power to act as the developer and manager during the construction and operation phase. Middle River Power has assets under management or in development that include over 3,000 MW of natural gas, coal, geothermal, and solar power generation facilities in California, Maryland, Virginia, and West Virginia.

The project will be a transmission-connected, lithium ion battery energy storage resource and is co-located with an existing geothermal project located in Inyo County. The project is a 60 MW, four-hour duration project. The geothermal project has an existing interconnection agreement with sufficient capacity and deliverability for the additional 60 MW from the energy storage project. A Material Modification Request has been submitted to the CAISO to transfer deliverability from the existing geothermal facility to storage and results are due in mid-May 2020. Appendix I provides additional project and LT RAA detail.

Term	Provision
Counterparty and Project	Coso Battery Storage, LLC, Coso Battery Storage
Technology	Lithium Ion Battery
Location	Little Lake, CA
Type of Interconnection	Transmission
Term	15 years
Commercial Online Date	75 days prior to IDD (by July 18, 2021)
Initial Delivery Date	October 1, 2021
Capacity	60 MW
Discharge Duration	4 hours

VI. Safety

As with PG&E's 2016 Energy Storage RFO and PG&E's 2018 Local Sub Area Energy Storage RFO, PG&E included safety as a qualitative evaluation criterion. As a condition of remaining on PG&E's shortlist for negotiations, PG&E required all shortlisted participants to provide information about their technology as well as the safety history of the participant and/or contractors (if known). Prior to contract execution, PG&E also used its Contractor Safety Program prequalification standards to assess safety performance and practices of each seller's organization. This process required all shortlisted participants with new construction projects to complete PG&E's safety registration and prequalification process with ISNetworld, PG&E's safety prequalification administrator, prior to contract execution.

To reduce, manage, and address the potential safety risks with respect to the proposed energy storage projects, PG&E used enhanced safety provisions within the proposed agreements similar to those previously included in PG&E's 2016 Energy Storage RFO and 2018 Local Sub Area Energy Storage RFO agreements. The safety provisions require sellers to practice responsible safety management enforced by contractual terms and conditions based on 1) standards for Prudent Electrical Practices, 2) all applicable laws and regulations, and 3) requirements of PG&E's Contractor Safety Program (Safety Requirements).

Under these enhanced safety provisions, all sellers are required to provide a project safety plan that demonstrates responsible safety management during all phases of the project lifecycle—including project design, construction, operation, and maintenance. Each project safety plan references the applicable safety-related codes and standards and the seller's current safety programs and policies. It includes a summary of the project design and description of key safety-related systems. The seller must also describe potential hazards and include risk mitigations and safeguards, such as operating

procedures, incident response, and recovery plans. In addition, the seller is required to demonstrate and enforce its contractors' and subcontractors' compliance with the Safety Requirements.

As additional project details become available during project development, PG&E will continue to monitor and perform additional safety checks of each seller's project safety plans for consistency with the Safety Requirements. Contract terms provide PG&E with the ability to enforce those requirements or, in certain cases, terminate the contracts in the case of non-compliance.

VII. Cost Recovery

In D.19-11-016 the Commission adopted the concept of a new modified Cost Allocation Mechanism (CAM) rate to address cost recovery for the procurement done by IOUs on behalf of LSEs that elect not to procure¹⁰ and ordered IOU procurement for its proportional share of the identified need.¹¹ Additionally, the Decision will require PG&E to procure incremental MWs for any LSE in its transsmission access charges (TAC) area that has certified it will self-provide but later becomes deficient in meeting its responsibility.¹²

The Decision deferred determination of specific details associated with the implementation of the modified CAM cost recovery mechanism to a future stakeholder workshop process.¹³ A workshop was held in the first quarter of 2020, and the newly-opened successor proceeding to R.16-02-007, R.20-05-003, indicates that a ruling seeking party input on the modified CAM is forthcoming, with a proposed decision expected in Spring 2021.

Until the Commission adopts the details associated with the cost recovery for procurement undertaken as a result of the Decision, including an implementation timeline, PG&E requests Commission approval to establish a new memorandum account. The Incremental Resource Adequacy Procurement Memorandum Account (IRAPMA) would track and record costs related to the procurement of incremental RA capacity required by the Decision and related administrative costs. The IRAPMA would separately track and record the following costs:¹⁴

¹⁰ D.19-11-016, Ordering Paragraph 5, p. 81-82.

¹¹ D.19-11-016, Ordering Paragraph 3, p. 80.

¹² At this time, it is unknown whether there will be self-procuring LSEs that fail to fully procure its assigned MW target but if this occurs, it is expected the Commission will order PG&E to procure the shortfall on behalf of the deficient LSEs in PG&E's TAC area.

¹³ D.19-11-016, p. 67.

¹⁴ PG&E will separately request to track and record costs to the IRAPMA associated with backstop procurement for LSEs that opted to self-procure but become deficient in meeting their responsibility, if such an event occurs.

- 1. Incremental system RA costs to meet bundled customer and opt-out LSE procurement requirement that are not currently being recovered in rates; and
- Incremental administrative costs, such as outside Independent Evaluator (IE)
 costs, for procurement to meet PG&E's responsibility and LSEs that opted-out of
 self-providing by the Commission's February 18, 2020 deadline.

For the first entry in the proposed memorandum account – incremental system RA costs that are not currently being recovered in rates – PG&E's request in this advice letter is to allow recovery of costs associated with bundled customer's procurement through the generation rate beginning in 2021¹⁵ and continue to recover costs through the generation rate until the Commission determines permanent cost recovery in R.20-05-003.

While PG&E's preference is to recover the full costs of the procurement ordered in this Decision beginning in 2021 once the contracts begin delivery, the reality is that there is not currently a rate mechanism in place to recover costs PG&E has incurred for the optout LSEs. Given the amount of this procurement is approximately 6 percent of the total procurement, PG&E is proposing that only the procurement costs associated with the optout LSEs for 2021 be tracked in the proposed memorandum account for later recovery via the modified CAM rate.

Establishing the memorandum account until the Commission determines permanent cost recovery in R.20-05-003 will help assure that all costs ordered by and benefits associated with the procurement are appropriately tracked and ultimately recovered from the benefiting customers.

Once the Commission adopts a specific cost recovery mechanism for the modified CAM, the implementation of the rate could be approved through PG&E's ERRA Forecast proceeding, which would include a proposal for disposition of any balance in the memorandum account.

In terms of timing, it is expected that the modified CAM mechanism will be approved sometime in the Spring of 2021 which will allow PG&E to implement the new rate component as part of its 2022 ERRA Forecast for rates effective January 1, 2022.¹⁶

PG&E's proposed tariff "Electric Preliminary Statement Part IF – Incremental Resource Adequacy Procurement Memorandum Account (IRAPMA)" is provided as Attachment 1 to this advice filing.

¹⁵ PG&E would only record costs in the memorandum account that are not already being recovered in rates. Thus, if the CPUC approves PG&E's interim rate proposal to recover incremental costs to meet bundled customer need in generation rates until a permanent cost recovery mechanism is approved, these costs would not be recorded in the proposed new IRAPMA.

¹⁶ PG&E's 2022 ERRA Forecast will be filed on or before June 1, 2021.

VIII. Compliance with the Decision

PG&E's RFO and its resulting incremental system RA contracts meet the requirements and goals set forth in the Decision as follows:

1. Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company should present the results of their solicitations required in Ordering Paragraph 7 of D.19-11-016 in one or more Tier 3 advice letters filed no later than January 1, 2021.

As required, PG&E is complying with the Decision by submitting this Tier 3 advice letter seeking Commision approval of the agreements resulting from PG&E's 2020 System Reliability Request for Offers – Phase 1 (SR RFO – Phase 1) prior to January 1, 2021.

2. PG&E is to conduct one or more all-source solicitations to procure its obligation.

PG&E issued the System Reliability RFO on February 28, 2020, to address its 2021 procurement obligation under D.19-11-016. In addition to this RFO, PG&E issued the System Reliability – Distributed Generation Enabled Microgrid Services RFO on December 11, 2019, and plans to issue the System Reliability RFO – Phase 2 in Q3 of 2020.

3. PG&E's solicitation(s) must consider existing as well as new resources, demand-side resources, combined heat and power, and storage, as long as all resources are shown to be incremental to the baseline resource list issued by an Administrative Law Judge Ruling.

In the 2020 System Reliability RFO – Phase 1 Solicitation protocol, PG&E solicitated offers for new and existing energy resources to provide system-level qualifying resource adequacy.

4. PG&E should utilize the Demand Response Auction Mechanism contract as a starting point for negotiations with any demand response resources that bid into the solicitations. For any demand-side resources, the incrementality principles adopted in D.16-12-036 should be used as a starting point for negotiations.

PG&E utilized the Demand Response Auction Mechanism contract posted on PG&E's 2020 SR RFO – Phase 1 solicitation website as a starting point for negotiations with Demand Response (DR) providers.

5. PG&E must procure at least 50 percent of its responsibility for incremental system RA (716.9 MW) and have it delivered by August 1, 2021.

Through this advice letter, PG&E is seeking Commission approval of seven system RA agreements totaling 423 MW, which exceeds the 50 percent minimum requirement to be delivered by August 1, 2021.

6. For the Customer Choice Aggregators (CCAs) and Energy Service Providers (ESPs) in PG&E's TAC area that opted-out of procuring the capacity required by the Decision for their own customers, PG&E must act as the backstop procurement agent and procure at least 50 percent of those LSEs incremental requirement and have it delivered by August 1, 2021.

Pursuant to the April 15, 2020, ALJ Ruling in R.16-02-007, PG&E is required to procure an additional 48.2 MWs for the CCAs and ESPs that opted-out of self-providing their incremental procurement responsibilities, of which 24.1 MW are to be online by August 1, 2021. With the addition of the LSE opt out procurement, PG&E's minimum requirement for August 1, 2021, is 382.55 MW (358.45 MW for bundled customers and 24.1 MW for the opt-out LSEs). PG&E is seeking approval of agreements that total 423 MW, which exceeds the minimum requirement for August 1, 2021.

7. PG&E may use imported power to satisfy up to 20 percent of its incremental procurement requirement, if the imported power is under a contract of at least three years in length, is associated with an identified specific resource and dynamically transferred or pseudo tied, and meets all other resource adequacy requirements for imports.

Since PG&E is not seeking approval of any contracts for imported power in this advice letter, the requirement is not applicable.

8. For any procurement of resources that are new after the date of the Decision, load serving entities with procurement obligations under this Decision shall enter into contracts of at least ten years in length except for energy efficiency resources, which shall be at least five years in length. For any procurement of existing resources, contracts shall be of at least three years in length.

Each of the agreements PG&E is seeking approval for is a new resource and the delivery term for each agreement is at least ten years.

9. PG&E should in its Tier 3 advice letter(s) presenting the results of its solicitation(s) include information on the metrics used to compare bids received in the solicitation(s).

As seen in Appendix G, the market valuations of the seven agreements are all positive. Appendix J, Evaluation Methodology, provides further detail on how the market valuation was calculated and how offers were evaluated.

10. PG&E should in its Tier 3 advice letter(s) presenting the results of its solicitation(s) demonstrate the incrementality of the resources procured to the finalized baseline resource list.

Each of the agreements PG&E is seeking approval for in this advice letter is for new battery storage resources that would be either: (1) built and co-located with solar or geothermal plants that currently have no existing battery storage onsite, (2) build at new battery storage projects that had available capacity to expand¹⁷, or (3) at a planned project that had available system RA capacity and is not in the baseline resources list. Additionally, in the solicitation protocol and offer form PG&E required participants to attest that their proposed project was incremental to the baseline resource list. While two of the projects (MOSS100 Energy Storage and Diablo Energy Storage) will be built at already planned battery storage locations, each of the five projects will be new and incremental to the baseline resource list.

11. PG&E should in its Tier 3 advice letters presenting the results of its solicitation(s) include information on the project development milestones suggested, including dates for site control, environmental application "deemed complete" or data adequate, and CAISO interconnection study completed.

In the solicitation protocol, PG&E required participants to demonstrate site control and provide the status of applicable permits, and they must have documentation showing that the project is on track to be fully deliverable by August 1, 2021.¹⁸ See Appendix K for additional information.

IX. Request for Commission Approval

PG&E requests that the Commission issue a Resolution no later than 80 days from the submittal of this Advice Letter that contains the following findings, conclusions, and orders:

 Approves the seven storage projects and associated contracts resulting from PG&E's 2020 System Reliability Request for Offers – Phase 1: Dynegy -MOSS100 Energy Storage LT RAA (100 MW); Diablo Energy Storage – Tranche 1 LT RAA (50 MW); Diablo Energy Storage – Tranche 2 LT RAA (50 MW); Diablo Energy Storage – Tranche 3 LT RAA (50 MW); Gateway Energy Storage LT RAA

¹⁷ D.19-11-016 OP 7 states that "modifications and augmentations to existing facilities are eligible for the incremental capacity addition, even if the facility is in the baseline [resources list]."

¹⁸ This date was amended to October 1, 2021 in the final agreements. Projects must be commercially operable and required to participate in the CAISO markets consistent with the obligations of a resource adequacy resource by August 1, 2021, which satisfies the requirements of D.19-11-016.

- (50 MW); NextEra Blythe Energy Storage (63 WM); and the Coso Battary Storage Project (60 MW).
- 2. Finds that the solicitation and agreements are consistent with D.19-11-016.
- 3. Pursuant to Ordering Paragraphs 3 and 6 of D.19-11-016, finds that the energy storage contracts, totaling 423 MW, count towards satisfying PG&E's incremental procurement obligations and incremental procurement required for CCAs and ESPs that opted out of self-providing their required portion and for which PG&E is required to procure on their behalf.
- 4. Pursuant to Ordering Paragraphs 3 and 5 of D.19-11-016, finds that 396.35 MW of the 423 MW count towards satisfying PG&E's incremental procurement obligation and 26.65 MW of the incremental procurement count towards satisfying the incremental procurement of the CCAs and ESPs that opted out of self-providing their required portion and for which PG&E is required to procure on their behalf.
- 5. Finds that the energy storage contracts, and PG&E's entry into them, is reasonable and prudent for all purposes, and that any payments to be made by PG&E pursuant to the contracts are recoverable in full by PG&E through the modified CAM described in D.19-11-016 or other recovery mechanism(s) approved by the Commission.
- 6. Finds that all procurement costs associated with the procurement agreements shall be eventually recovered in rates via the modified CAM described in D.19-11-016 or other recovery mechanism(s) approved by the Commission for the full term of the respective agreements.
- 7. Authorizes PG&E to establish a new memorandum account to track and record any contract payments and administrative expenses until the Commission adopts the mechanics of the modified CAM mechanism and PG&E implements a new rate component. The Commission specifically adopts PG&E's proposal to recover bundled customer costs through the generation rate until the modified CAM or other recovery mechanism is approved by the Commission.
- 8. Any other and further relief as the Commission finds just and reasonable.

X. Confidentiality Treatment

In support of this Advice Letter, PG&E has provided the confidential information listed below. This information is being submitted in the manner directed by Commission Decision (D.) 08-04-023 and the August 22, 2006, Administrative Law Judge's Ruling Clarifying Interim Procedures for Complying with D.06-06-066 to demonstrate the confidentiality of the material and to invoke the protection of confidential utility information

provided under Public Utilities Code section 454.5(g) or the Investor Owned Utility Matrix, Appendix 1 of D.06-06-066 and Appendix C of D.08-04-023. A separate Declaration Seeking Confidential Treatment is being submitted concurrently with this Advice Letter.

Confidential Appendices

- Appendix A: Dynegy Vistra MOSS100 Energy Storage Long Term Resource Adequacy Agreement (LT RAA)
- Appendix B: Diablo Diablo Energy Storage Tranche 1 Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix C: Diablo Diablo Energy Storage Tranche 2 Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix D: Diablo Diablo Energy Storage Tranche 3 Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix E: Gateway Gateway Energy Storage Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix F: NextEra Blythe Energy Storage 110 Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix G: Coso Coso Battery Storage Long-Term Resource Adequacy Agreement (LT RAA)
- Appendix H1: Independent Evaluator (IE) Report (Confidential)
- Appendix I: Summary of Key Long-Term Resource Adequacy Agreement Terms
- Appendix K: Project Development Milestones
- Appendix L: Quantitative Evaluation Results and Price Comparison

Public Appendices

Appendix H2: Independent Evaluator Report (Public)

Appendix J: Evaluation Methodology

XI. <u>Protests</u>

Due to the COVID-19 pandemic and the shelter at home orders, PG&E is currently unable to receive protests or comments to this advice letter via U.S. mail or fax. Please submit protests or comments to this advice letter to EDTariffUnit@cpuc.ca.gov and PGETariffs@pge.com

PG&E respectfully requests that under GO 96-B Section 1.3 the protest period be shortened to 10 days. Anyone wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than May 28, 2020, which is 10 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division ED Tariff Unit 505 Van Ness Avenue, 4th Floor San Francisco, California 94102

Facsimile: (415) 703-2200

E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Erik Jacobson
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582 E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

XII. Effective Date

PG&E requests that this Tier 3 advice submittal become effective upon Commission approval. Due to the need for resources to be in service by August 1, 2021, PG&E requests that the Commission issue a Resolution no later than 80 days from the submittal of this Advice Letter. As indicated by PG&E, Southern California Edison Company, and San Diego Gas & Electric Company in the joint response to California Energy Storage Alliance's petition for modification of D.19-11-016, projects already have a very limited time to begin deliveries by August 1, 2021 due to the time required for project permitting,

construction and interconnection.¹⁹ And now, PG&E has informally heard from energy storage developers that COVID-19 is presenting unique challenges with financing projects, sourcing of materials via existing supply chains, obtaining permits, and ensuring commercial construction can proceed during shelter-in-place orders by the State and also specific counties within the State. Given the already compressed timeline for projects to begin deliveries and any further complications that are or may be posed by COVID-19, PG&E requests the Commission issue a Resolution as soon as possible to ensure the approval of projects requested within can begin deliveries by August 1, 2021.

XIII. Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list R.16-02-007. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: http://www.pge.com/tariffs/.

/S

Erik Jacobson Director, Regulatory Relations

cc: Service Lists R.16-02-007

Attachments

¹⁹ See Joint Response of Southern California Edison Company, Pacific Gas And Electric Company and San Diego Gas & Electric Company to California Energy Storage Alliance's Petition for Modification of Decision 19-11-016 filed on April 21, 2020 in Rulemaking 16-02-007.





California Public Utilities Commission

ADVICE LETTER



LINLINGTOTILIT	CAU			
MUST BE COMPLETED BY UT	ILITY (Attach additional pages as needed)			
Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39E)				
Utility type: ELC GAS WATER PLC HEAT	Contact Person: Kimberly Loo Phone #: (415)973-4587 E-mail: PGETariffs@pge.com E-mail Disposition Notice to: KELM@pge.com			
EXPLANATION OF UTILITY TYPE ELC = Electric GAS = Gas WATER = Water PLC = Pipeline HEAT = Heat	(Date Submitted / Received Stamp by CPUC)			
Advice Letter (AL) #: 5826-E	Tier Designation: 3			
Subject of AL: System Reliability Contracts Resulting Keywords (choose from CPUC listing): Compliant	ng from PG&E's Phase 1 Request for Offers Under D.19-11-016			
AL Type: Monthly Quarterly Annu-				
	on order, indicate relevant Decision/Resolution #:			
Does AL replace a withdrawn or rejected AL? I	f so, identify the prior AL: $_{ m No}$			
Summarize differences between the AL and the prior withdrawn or rejected AL:				
Confidential treatment requested? 🔽 Yes 🗌 No				
If yes, specification of confidential information: See Confidentiality Declaration and Matrix Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information: Marino Monardi, (415)973-8573, M3Mt@pge.com				
Resolution required? 🔽 Yes 🗌 No				
Requested effective date:	No. of tariff sheets: 3			
Estimated system annual revenue effect (%): $_{ m N/A}$				
Estimated system average rate effect (%): $\mathrm{N/A}$				
When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).				
Tariff schedules affected: See Attachment 1				
Service affected and changes proposed $^{1:}$ $_{ m N/A}$				
Pending advice letters that revise the same tariff sheets: $ m N/A$				

Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

CPUC, Energy Division Attention: Tariff Unit 505 Van Ness Avenue San Francisco, CA 94102

Email: EDTariffUnit@cpuc.ca.gov

Name: Erik Jacobson, c/o Megan Lawson

Title: Director, Regulatory Relations

Utility Name: Pacific Gas and Electric Company Address: 77 Beale Street, Mail Code B13U

City: San Francisco, CA 94177

State: California Zip: 94177

Telephone (xxx) xxx-xxxx: (415)973-2093 Facsimile (xxx) xxx-xxxx: (415)973-3582

Email: PGETariffs@pge.com

Name:

Title:

Utility Name:

Address:

City:

State: District of Columbia

Zip:

Telephone (xxx) xxx-xxxx: Facsimile (xxx) xxx-xxxx:

Email:

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

PACIFIC GAS AND ELECTRIC COMPANY ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS 2020 SYSTEM RELIABILITY – PHASE 1 REQUEST FOR OFFERS PURSUANT TO DECISION 19-11-016

DECLARATION OF MARINO MONARDI SEEKING CONFIDENTIAL TREATMENT FOR CERTAIN DATA AND INFORMATION CONTAINED IN PG&E'S ADVICE LETTER

I, Marino Monardi, declare:

- 1. I am a Director in the Energy Procurement and Policy Organization at Pacific Gas and Electric Company (PG&E). In this position, I am responsible for procurement of various electric resources and products including energy storage and renewable energy. This declaration is based on my personal knowledge of PG&E's practices and my understanding of the Commission's decisions protecting the confidentiality of market-sensitive information.
- 2. Based on my knowledge and experience, and in accordance with the Decisions 06-06-066, 08-04-023, and relevant Commission rules, I make this declaration seeking confidential treatment for certain data and information contained in PG&E's Advice Letter pursuant to Decision 19-11-016.
- 3. Attached to this declaration is a matrix identifying the data and information for which PG&E is seeking confidential treatment. The matrix specifies that the material PG&E is seeking to protect constitutes confidential market sensitive data and information covered by D.06-06-066, Appendix 1, and Public Utilities Code §454.5(G). The matrix also specifies why confidential protection is justified. Further, the data and information: (1) is not already public; and (2) cannot be aggregated, redacted, summarized or otherwise protected in a way that allows partial disclosure. By this reference, I am incorporating into this declaration all of the explanatory text that is pertinent to my testimony in the attached matrix.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct. Executed on May 15, 2020 at San Anselmo, California.

Marino Monardi

ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS SYSTEM RELIABILITY REQUEST FOR OFFERS – PHASE 1 PURSUANT TO DECISION 19-11-016 MAY 15, 2020

IDENTIFICATION OF CONFIDENTIAL INFORMATION				
Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	PG&E's Justification for Confidential Treatment	Length of Time	
Confidential Appendices				
Appendix A: Dynegy – Vistra MOSS100 LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.	
Appendix B: Diablo – Diablo Energy Storage – Tranche 1 LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.	
Appendix C: Diablo – Diablo Energy Storage – Tranche 2 LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.	

ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS SYSTEM RELIABILITY REQUEST FOR OFFERS – PHASE 1 PURSUANT TO DECISION 19-11-016 MAY 15, 2020

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	PG&E's Justification for Confidential Treatment	Length of Time
Appendix D: Diablo – Diablo Energy Storage – Tranche 3 LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.
Appendix E: Gateway – Gateway Energy Storage LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.
Appendix F: NextEra – Blythe Energy Storage 110 LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.

ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS SYSTEM RELIABILITY REQUEST FOR OFFERS – PHASE 1 PURSUANT TO DECISION 19-11-016 MAY 15, 2020

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	PG&E's Justification for Confidential Treatment	Length of Time
Appendix G: Coso – Coso Battery Storage LTRAA	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	The terms of the Long-Term Resource Adequacy Agreement (LTRAA) Agreement presented in this appendix are generally confidential. The terms of this contract that are public pursuant to Item VII. B. are publicly disclosed in section V. Selected Energy Storage Projects.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.

ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS SYSTEM RELIABILITY REQUEST FOR OFFERS – PHASE 1 PURSUANT TO DECISION 19-11-016 MAY 15, 2020

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	PG&E's Justification for Confidential Treatment	Length of Time
Appendix H1: Independent Evaluator (IE) Report (Confidential)	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)); Item VIII. B) Specific quantitative analysis involved in scoring and evaluation of participating bids.	The IE Report contains extensive discussion of the specific terms of the LTRAA Contracts. All contract terms, except for the 8 contract characteristics noted as public in Matrix VII.B, are confidential. The IE Report also contains information on the shortlist, which constitutes the confidential results of bid scoring and evaluation.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first. Information under Item VIII. B is confidential for three years from the date winning contracts are submitted for CPUC approval.
Appendix I: Summary of Key Long-Term Resource Adequacy Agreement Terms	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	Contract specific terms between PG&E and the counterparty and between the counterparty and suppliers are confidential terms as they are not identified as public by Matrix term VII.B.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.

ADVICE LETTER FOR APPROVAL OF CONTRACTS RESULTING FROM ITS SYSTEM RELIABILITY REQUEST FOR OFFERS – PHASE 1 PURSUANT TO DECISION 19-11-016 MAY 15, 2020

Redaction Reference	Category from D.06-06-066, Appendix 1, or Separate Confidentiality Order That Data Corresponds To	PG&E's Justification for Confidential Treatment	Length of Time
Appendix K: Project Development Milestones	Item VII.B (Contracts and Power Purchase Agreements between utilities and non-Affiliated Third Parties (except RPS)).	Contract specific terms between PG&E and the counterparty and between the counterparty and suppliers are confidential terms as they are not identified as public by Matrix term VII.B.	Contract documents and terms of contracts are confidential for three years from the date that the contract states that deliveries are to begin, or until one year following expiration, whichever comes first.
Appendix L: Quantitative Evaluation Results and Price Comparison	Item VIII. B) Specific quantitative analysis involved in scoring and evaluation of participating bids.	The appendix contains information on the shortlist, which constitutes the confidential results of bid scoring and evaluation.	Information under Item VIII. B is confidential for three years from the date winning contracts are submitted for CPUC approval.

Attachment 1 Advice 5826-E

Cal P.U.C. Sheet No.	Title of Sheet	Cancelling Cal P.U.C. Sheet No.
46665-E	ELECTRIC PRELIMINARY STATEMENT PART IF INCREMENTAL RESOUCE ADEQUACY PROCUREMENT MEMORANDUM ACCOUNT Sheet 1	
46666-E	ELECTRIC TABLE OF CONTENTS Sheet 1	46111-E
46667-E	ELECTRIC TABLE OF CONTENTS Sheet 17	46345-E

ELECTRIC PRELIMINARY STATEMENT PART IF Sheet 1 (N) INCREMENTAL RESOUCE ADEQUACY PROCUREMENT MEMORANDUM ACCOUNT (N) INCREMENTAL RESOURCE ADEQUACY PROCUREMENT MEMORANDUM ACCOUNT (N) (IRAPMA) 1. PURPOSE: The purpose of the Incremental Resource Adequacy Procurement Memorandum (N) Account (IRAPMA) is to track and record the costs related to the procurement of incremental resource adequacy (RA) capacity required by CPUC Decision (D.) 19-11-016 and related administrative costs that are not otherwise recovered in rates. Such costs may include: (1) procurement expense for incremental RA capacity allocated to PG&E's bundled customers and/or load-serving entities (LSE) that have opted-out of self-procurement, and (2) incremental administrative costs associated with the procurement. The IRAPMA will not include costs related to baseline procurement or costs recorded and recovered in another account. 2. APPLICABILITY: The IRAPMA shall apply to all customer classes, except for those specifically excluded by the Commission. 3. REVISION DATES: Disposition of the balances in the account shall be as authorized by the Commission. 4. RATES: The IRAPMA does not have a separate rate component. 5. ACCOUNTING PROCEDURE: The following entries will be made each month, or as applicable: a) A debit entry equal to costs of incremental RA capacity purchased for PG&E's bundled customers and customers of LSEs that have opted-out of self-procurement that are not otherwise recovered in rates: b) A debit entry equal to incremental administrative costs related to entry a) above; An entry to record the transfer of amounts to or from other accounts as approved by the Commission; and An entry equal to interest on the average balance in the account at the beginning of the month and the balance after the above entries, at a rate equal to one-twelfth of the

interest rate on three-month Commercial Paper for the previous month, as reported in

the Federal Reserve Statistical Release, H.15 or its successor.

(Continued)

Advice 5826-E Decision D.19-11-016

Issued by **Robert S. Kenney**Vice President, Regulatory Affairs

Submitted _____ Effective Resolution

May 18, 2020

(N)

Revised Cancelling Revised

Cal. P.U.C. Sheet No. Cal. P.U.C. Sheet No.

46666-E 46111-E

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(Continued)

 Advice
 5826-E

 Decision
 D.19-11-016

Issued by **Robert S. Kenney**Vice President, Regulatory Affairs

Submitted Effective Resolution

May 18, 2020

Part IB Part IF Revised Cancelling Revised

Cal. P.U.C. Sheet No. Cal. P.U.C. Sheet No.

46667-E 46345-E

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(Continued)

(N)

Advice 5826-E Issued by Submitted May 18, 2020
Decision D.19-11-016 Robert S. Kenney Effective Vice President, Regulatory Affairs Resolution

General Rate Case Memorandum Account – Electric (GRCMA-E) 45750*,45751*-E

PACIFIC GAS AND ELECTRIC COMPANY

Appendix A

Dynegy – Vistra MOSS100 Energy Storage Long Term Resource Adequacy Agreement (LT RAA) (Confidential)

Appendix B

Diablo – Diablo Energy Storage –
Tranche 1 Long-Term Resource Adequacy
Agreement (LT RAA)
(Confidential)

Appendix C

Diablo – Diablo Energy Storage –
Tranche 2 Long-Term Resource Adequacy
Agreement (LT RAA)
(Confidential)

Appendix D

Diablo – Diablo Energy Storage –
Tranche 3 Long-Term Resource Adequacy
Agreement (LT RAA)
(Confidential)

Appendix E

Gateway – Gateway Energy Storage Long-Term Resource Adequacy Agreement (LT RAA) (Confidential)

Appendix F

NextEra – Blythe Energy Storage 110 Long-Term Resource Adequacy Agreement (LT RAA) (Confidential)

Appendix G

Coso – Coso Battery Storage Long-Term Resource Adequacy Agreement (LT RAA) (Confidential)

Appendix H1

Independent Evaluator (IE) Report (Confidential)

Appendix H2

Independent Evaluator Report (Public)

Pacific Gas and Electric Company 2020 System Reliability Request for Offers Public Version

Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1

May 18, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



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Attachment E: Coso Battery Storage, LLC Long-Term Resource Adequacy Agreement

I. Introduction

A. Overview of the 2020 System Reliability Request for Offers – Phase 1

On February 28, 2020, Pacific Gas & Electric Company ("PG&E" or "Company") issued its 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1") seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021, pursuant to California Public Utility Commission ("CPUC") Decision D.19-11-016.

Decision D.19-11-016 requires PG&E to undertake incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come on-line between August 1, 2021 and August 1, 2023. Decision D.19-11-016 requires PG&E to procure and have online 50% (358.4 MW) of the target capacity by August 1, 2021. To meet the CPUC Decision, PG&E proposes to execute Agreements in two phases. Phase 1 (this solicitation) is intended to meet August 1, 2021 online date requirements. Phase 2 will be for projects that intend to come online after August 1, 2021 and before August 1, 2023. PG&E intends to issue a subsequent System Reliability Request for Offers - Phase 2 in Q3 2020, if it does not procure its full requirements in Phase 1.

On February 28, 2020 PG&E launched the 2020 System Reliability RFO – Phase 1 and posted the Solicitation Protocol document and other associated documents on its website. In the 2020 System Reliability RFO – Phase 1 Protocol document, PG&E listed a number of requirements and preferences to inform prospective Participants of the requirements for competing in the procurement process. A summary of the key provisions of the Phase 1 Solicitation Protocol is provided in Table 1.

Table 1: Provisions of the 2020 System Reliability RFO – Phase One

2020 System Reliability RFO – Phase One Requirements or Characteristics	Description of Key Provisions
Resource Needs	PG&E is seeking new and existing energy resources to provide system-level qualifying resource adequacy ("RA") capacity beginning August 1, 2021. All resources will be expected to be incremental in counting toward PG&E's procurement responsibilities as specified in Decision D.19-11-016. Procurement in this RFO is designed to meet the target of 358.45 MW online by August 1, 2021 and will qualify towards the minimum procurement requirements of 716.9 MW per the California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"), issued on November 13, 2019.

¹ PG&E also states in the RFO Protocol that subsequent to this RFO, PG&E will seek to procure additional system-level qualifying resource adequacy (RA) capacity to come online between August 1, 2021 and

Merrimack Energy Group, Inc.

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Products Solicited	Through this RFO, PG&E is seeking Resource Adequacy only (system and local RA). Eligible Resources include: (1) All Resources (existing projects only) with delivery terms of 3 or 5 years; (2) All Resources ² (new projects only) with delivery terms of 10 or 15 years; (3) Behind the Meter Resources (New projects only) with a delivery term of 10 or 15 years; and (4) Incremental Demand Response with a delivery term of 3 years. All resources must meet the minimum size requirement of 10 MWs.
Proposed	The Schedule contained in the 2020 System Reliability RFO – Phase 1
Schedule	Protocol document included the following key dates for the RFO: • February 28, 2020 – PG&E issues the RFO; • March 5, 2020 - Participants Webinar;
	 March 25, 2020 – Deadline for Participants to submit offers by 1:00 PM PPT;
	• April 10, 2020 – PG&E notifies selected Participants that their offers will be included on a shortlist;
	• April 13, 2020 – Deadline for notified shortlisted Participants to accept shortlist status;
	• April 15, 2020 – Deadline for notified shortlisted Participants to post Shortlist Offer Deposit;
	• Early May, 2020 – Target Agreement Execution: Mid-May, 2020 – Target Filing for CPUC Approval.
Agreement	PG&E is only seeking third-party owned projects for Phase 1. PG&E
Types	prefers to execute agreements that are substantially similar to the form
	agreements provided. Agreement types by Product include:
	1. <u>EEI Master Resource Adequacy Confirmation (RA Confirm)</u>
	- PG&E will consider offers for RA products provided by
	existing projects of any resource type in the CAISO network or
	dynamically transferred or pseudo-tied into the CAISO through
	the Resource Adequacy Confirm;
	2. <u>Long-Term Resource Adequacy Agreement (LTRAA)</u> –
	PG&E will consider offers for RA products provided by in-
	front-of-the-meter projects through a Long-Term Resource
	Adequacy Agreement;
	3. <u>Behind-the-Meter Resource Adequacy Agreement (BTM</u>
	<u>RAA</u>) – PG&E will consider offers for RA products provided
	by behind-the-meter projects through a Behind-the-Meter
	Resource Adequacy Agreement;
	4. <u>Demand Response Agreement</u> – PG&E will consider offers
	for RA products provided by behind-the-meter projects
	through a Behind-the-Meter Resource Adequacy Agreement.
	The Demand Response Agreement will use the draft 2020

August 1, 2023 to meet any residual amount necessary for PG&E to obtain the minimum of 716.9 MW of new resources required by the Decision.

² Includes incremental capacity additions located at existing projects.

	Demand Response Auction Mechanism Purchase Agreement.
Eligibility Requirements	Phase 1 of this Solicitation is for new and existing resources providing system RA, and for projects that are online by 8/1/2021. Offers must meet the minimum requirements listed below: 1) Eligible Resources — Resources must be incremental to the Integrated Resource Planning Baseline Resource List: 2) Project Size — PG&E will consider offers where multiple resources are aggregated to meet the minimum size. Multiple resources can be aggregated so long as: (1) the aggregate product has a single CAISO Resource ID, (2) the aggregate product can be measured similar to having a single CAISO meter, (3) the aggregate product has one Locational Marginal Price node, and (4) the aggregate product complies with the CAISO Tariff; 3) Site Control — For in-front-of-the-meter resources, Participants must demonstrate site control at the time of offer submission, except for offers for BTM customer-connected and Demand Response resources. Examples of acceptable forms of site control are: (1) Fee title, (2) Recorded Exclusive Easement, (3) Executed Option Agreement, (4) Lease (Non-revocable), (5) Lease Option (Non-revocable); 4) Performance and Operational Requirements — Offers in this Solicitation must provide RA. Products must meet the applicable CPUC RA requirements, CAISO requirements for deliverability, as well as any other requirements that will enable PG&E to receive all of the benefits associated with the project; 5) Electric Interconnection — At the time of offer submittal, Participants must have documentation showing that the project is on track to receive Full Capacity Deliverability Status (FCDS) by August 1, 2021. Participants must remain active in the applicable interconnection queue until the project's required network upgrades have been completed. At a minimum, projects, except BTM, must have an interconnection report or agreement as a result of an interconnection request demonstrating evidence of a construction schedule that can meet the proposed Commercial Operation Date; 6) Incrementality — Sellers must provide
Pricing	Participants are required to provide a complete Offer package, and include pricing in their Offer Form depending on the Agreement type.

Number of Offers and Variations Allowed Evaluation Process and Evaluation of Offers Received	Participants may submit up to 5 offer variations at a specific interconnection point. Participants may vary any attribute of the offer provided the total offers submitted for a single project does not exceed this limit. PG&E will apply "least-cost, best-fit" principles using quantitative and qualitative criteria to evaluate offers submitted. The quantitative evaluation compares an offer's costs to its benefits. The cost may consist of the contract fixed cost, variable cost and transmission network upgrade cost. The benefit may consist of capacity value and energy value, to the extent provided in the agreement. PG&E may also consider Qualitative factors that could impact the value of an offer including, but not limited to, the following: project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, Participant's supply chain responsibility status, and completeness of the offer.
Offer Submittal	All Offers must be received by March 25, 2020 at 1:00 P.M. (PPT).
Process	All offers for this RFO must be submitted electronically through PowerAdvocate.
Offer Package	Offers must contain all required information and must be organized in accordance with the instructions listed in the RFO Protocol. Information required includes: 1. Offer Form 2. Supplemental RFO Documents/Project Description – Appendix B 3. FERC 717 Waiver Appendix C 4. Form Agreement Appendix E1 – E4 5. Letter of Credit – Appendix G1 6. Request for Taxpayer ID – Appendix G2 7. Map of Facilities
Credit	Upon execution of an Agreement with PG&E, the Participant must post collateral to PG&E. Each of the Agreements requires that the Participant post collateral with PG&E prior to and following commercial operation of the facility in varying amounts and form, as provided in the applicable Agreement.
	For projects with delivery term options of 3 or five years and existing resources only, for both the Pre-Delivery Security and the Delivery Term security, the Participant is required to provide 10% of the highest 2 consecutive years of estimated monthly payments within 5 days of Execution. For projects with delivery terms greater than 10 years and for new resources only, for Pre-Delivery Security the Participant is required to post credit in the amount of \$15/kW within 5 days of execution, and an additional \$25/kW within 5 days of CPUC approval (total posted Pre-Delivery security of \$40/kW). For Delivery

	Term security, Participants are required to post the greater of (A) \$40/kW or (B) 10% of the highest 3 consecutive years of estimated monthly payments.
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CPUC Approval	Whether an Agreement goes into effect or not is expressly conditioned
	on PG&E's receipt of Approvals, which are more specifically defined
	in each of the Agreements or Term Sheets. At a minimum, PG&E will
	require a finding from the CPUC that PG&E's entry into the
	Agreement satisfies PG&E's compliance with the Decision, that the
	terms are reasonable, and that PG&E will recover the costs incurred
	under the Agreement in its rates. Additionally, most Agreements will
	be subject to a no-fault termination if Approval does not occur within
	a specified period, as set forth in each of the applicable Agreements.
	Approvals typically require the approval of the Agreement by the
	CPUC to be final and non-appealable without any modifications that
	are unacceptable to either of the parties.

B. Issues Addressed in This Report

This report addresses Merrimack Energy's assessment and conclusions regarding the following issues identified in the CPUC's IE Report Template:

- 1. Describe the role of the IE throughout the solicitation process;
- 2. How did the IOU conduct outreach to bidders? Was the solicitation robust?
- 3. Evaluate the administration of the solicitation process including the fairness of the investor-owned utility's ("IOU's") bid evaluation and selection process (i.e. quantitative and qualitative methodology used to evaluate and select offers, and consistency of evaluation and selection methods with criteria specified in bid documents, etc.);
- 4. Describe PG&E's Least Cost Best Fit ("LCBF") methodology for evaluating offers. Was the LCBF process fairly administered? Evaluate the strengths and weaknesses of the IOU's methodology;
- 5. Describe the applicable project specific negotiations. Highlight any areas of concern including unique terms and conditions;
- 6. If applicable, describe safeguards, code of conduct and methodologies employed by the IOU to compare affiliate bids or utility-owned generation ownership offers. If a utility selected an offer from an affiliate or an offer that would result in utility asset ownership, explain whether the IOU's selection of such offer was appropriate;

- 7. Do the contract(s) merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market?
- 8. Based on the complete bid process, was the RFO acceptable?

Given the number of contracts executed, PG&E and the IE held discussions with respect to the best approach for presenting the IE's findings regarding the overall 2020 System Reliability RFO – Phase 1 solicitation process and assessment of contract negotiations and final contract execution. It was agreed that organizationally it would be preferable to include the issues listed in point 5 above regarding the description of contract negotiations and point 7 regarding CPUC approval of the contract in a separate Attachment to this report for each contract executed associated with the 2020 System Reliability RFO – Phase 1 solicitation process. Attachments A through E include a description and assessment of each of the contracts executed by PG&E through this 2020 System Reliability RFO – Phase 1 solicitation.³

II. Description of the Role of the IE

A. Regulatory Requirements For the IE

The requirements for participation by an IE in utility solicitations are outlined in CPUC Decisions ("D").04-12-048 (Findings of Fact 94-95, Ordering Paragraph 28), D.06-05-039 (Finding of Fact 20, Conclusion of Law 3, Ordering Paragraph 8) of the CPUC, D.09-06-050 and D.10-07-042.

The role of IEs in California IOU procurement processes has evolved over the past ten to twelve years. In D.04-12-048 (December 16, 2004), the CPUC required the use of an IE by investor-owned utilities (IOUs) in resource solicitations where there is an affiliated bidder or bidders, or where the utility proposed to build a project or where a bidder proposed to sell a project or build a project under a turnkey contract that would ultimately be owned by a utility. The CPUC generally endorsed the guidelines issued by the Federal Energy Regulatory Commission ("FERC") for independent evaluation where an affiliate of the purchaser is a bidder in a competitive solicitation, but stated that the role of the IE would not be to make binding decisions on behalf of the utilities or administer the entire process.⁴ Instead, the IE would be consulted by the IOU, along with the Procurement Review Group ("PRG") on the design, administration, and evaluation aspects of the Request for Proposals ("RFP"). The Decision identifies the technical expertise and experience of the IE with regard to industry contracts, quantitative evaluation methodologies, power market derivatives, and other aspects of power project

³ A total of seven contracts were executed with five counterparties. PG&E executed three contracts with Diablo Energy Storage, LLC, each for 50 MW . Merrimack Energy has submitted one report to address the three contracts .

⁴ Decision 04-12-048 at 129-37. The FERC guidelines are set forth in Ameren Energy Generating Company, 108 FERC ¶ 61,081 (June 29, 2004).

development. From a process standpoint, the IOU could contract directly with the IE, in consultation with its PRG, but the IE would coordinate with the Energy Division.

In D.06-05-039 (May 25, 2006), the CPUC required each IOU to employ an IE regarding all RFPs issued pursuant to the RPS, regardless of whether there are any utility-owned or affiliate-owned projects under consideration. This was extended to any long-term contract for new generation in D.06-07-029 (July 21, 2006). In addition, the CPUC directed the IE for each RFP to provide separate reports (a preliminary report with the shortlist and final reports with IOU advice letters to approve contracts) on the entire bid, solicitation, evaluation and selection process, with the reports submitted to the utility, PRG, and CPUC and made available to the public (subject to confidential treatment of protected information). The IE would also make periodic presentations regarding its findings to the utility and the utility's PRG consistent with preserving the independence of the IE by ensuring free and unfettered communication between the IE and the CPUC's Energy Division, and an open, fair, and transparent process that the PRG could confirm.

In 2007, the use of an IE was required for any competitive solicitation seeking products for a term of more than three months in D.07-12-052 (December 21, 2007). Also, the process for retaining IEs was modified substantially, with IOUs developing a pool of qualified IEs, subject to feedback and any recommendations from the IOU's PRG and the Energy Division, an internal review process for IE candidates, and final approval of IEs by the Energy Division.

In 2008, in D.08-11-008, the CPUC changed the minimum term requirement from three months to two years and reiterated that an IE must be utilized whenever an affiliate or utility bidder participates in the RFO, regardless of contract duration.

In D.09-06-050 issued on June 18, 2009 in Rulemaking 08-08-009, Order Instituting Rulemaking to Continue Implementation and Administration of California Renewable Portfolio Standard Program, the CPUC required that bilateral contracts should be reviewed according to the same processes and standards as contracts that come through a solicitation. This includes review by the utility's PRG and its IE, including a report filed by the IE.

In D.10-07-042 issued on July 29, 2010, the Commission reaffirmed the role of the IE and required the Energy Division to revise the IE Template to ensure that the IEs focus on their core responsibility of evaluating whether an IOU conducted a well-designed, fair, and transparent RFO for the purpose of obtaining the lowest market prices for ratepayers, taking into account many factors (e.g. project viability, transmission access, etc.).

This IE report is submitted in conformance with the above requirements.

B. Description of Key IE Roles

In compliance with the above requirements, PG&E selected Merrimack Energy to serve as IE for the System Reliability RFOs in November 2019.⁵ The overall objective of the role of the IE is to ensure that the solicitation process is undertaken in a fair, consistent, unbiased, and objective manner and that the best resources are selected and acquired for the benefit of customers consistent with the solicitation requirements. This role generally involves a detailed review and assessment of the evaluation process and the results of the quantitative and qualitative analysis.

In addition to the requirements identified in CPUC Orders, the Scope of Work included in the Contract Work Authorization ("CWA") between Merrimack Energy and PG&E clearly identifies the tasks to be performed by the IE. These include the following tasks:

- Advise on the consistency of solicitation activities with the CPUC's procurementrelated rules and procedures and PG&E's Commission-approved procurement authority;
- Assist in the development, design, and review of the Solicitation. Promptly submit any recommendations to PG&E and/or CPUC, consistent with the objective of ensuring a competitive, open and transparent process, and to ensure that the overall scope of the solicitation process is not unnecessarily broad or too narrow;
- Monitor all communications and/or negotiations between PG&E and counterparties, as required by the solicitation's objectives as outlined in the solicitation Protocol and approved by the CPUC;
- Provide recommendations and reports, if required by PG&E and/or the CPUC, concerning the definition of products sought and price and non-price evaluation criteria; so that all aspects of the products are clearly understood, and all bidders may effectively respond to the solicitation, as applicable;
- Review the comprehensive quantitative and qualitative bid evaluation criteria and methodologies applied to any 2020 System Reliability – Phase 1 Solicitation and assess whether these are applied to all bids in a fair and non-discriminatory manner. The Consultant will be provided access to PG&E's personnel, modeling tools, and meeting documentation in order to credibly evaluate the bid evaluation and selection processes;
- Report on the outcome of a solicitation using the appropriate CPUC-approved Independent Evaluator Report Template, which may be amended from time to time, for inclusion in any Advice Letter, Application, and/or Quarterly Compliance Report filings;
- Monitor the solicitation, bilateral negotiation and/or contract amendment processes and promptly submit recommendations to PG&E's management to ensure that no bidder has an information advantage and that all bidders or counterparties, if applicable, receive access to relevant communications in a non-

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⁵ Merrimack Energy was retained to initially serve as IE for the 2019 System Reliability Request for Offers – Distributed Generation Enabled Microgrid Services (DGEMS) Phase, which was initiated in November 2019 and suspended in February, 2020.

- discriminatory manner. This task may include monitoring contract negotiations and/or keeping appraised of negotiation status and major issues;
- Provide presentations to PG&E's management, the Procurement Review Group (PRG), and the CPUC Energy Division (ED), if requested, regarding the Consultant's findings or status. Communicate periodically with the Energy Division ("ED") as a check on the solicitation process;
- Provide a written assessment as to whether the solicitation process was open, transparent and fair, and whether any bidder received material information that gave them a competitive advantage or disadvantage relative to other bidders;
- Provide a final written assessment as to whether or not PG&E's evaluation criteria and methodologies were reasonable and appropriate and were applied in a fair and non-discriminatory manner for all offers received;
- Prepare or assist in the preparation of direct and/or rebuttal testimony, and participate as a witness or in an advisory capacity during administrative hearings, as required, before the CPUC and/or FERC in any associated proceedings;
- Perform other duties as may be further defined in subsequent relevant regulatory proceedings or required by PG&E's senior management.

C. Description of IE Oversight Activities

As noted, Merrimack Energy was retained as the IE by PG&E in November 2019. In performing its oversight and evaluation role, the IE participated in and undertook a number of activities in connection with the solicitation process including reviewing the protocol documents, monitoring communications between PG&E and the Participants, reviewing and commenting on internal RFO Evaluation Protocol documents, organizing and summarizing the offers received, reviewing the evaluation results and shortlist and final selection, monitoring the status of short-listed offers, participating in meetings with Participants after receipt of offers and during contract negotiations, communicating with PG&E's Project Manager, project team, and transactors on a regular basis to discuss RFO and contract issues, participating in meetings with the PRG, PG&E's Evaluation Committee and PG&E's Advisory Committee, as held and as required, and monitoring the contract negotiation process with shortlisted Participants.

This report provides an assessment and review of PG&E's 2020 System Reliability RFO – Phase 1 procurement process from development of the RFO through execution of the final Agreements. The role of the IE is also discussed as it pertains to specific activities in Section IV of this report.

III. Did PG&E Do Adequate Outreach to Bidders and Was the Solicitation Robust?

This section of the Report focuses on the adequacy of outreach activities of PG&E and the robustness of the response of bidders with regard to the solicitation process.

A. Describe the IOU outreach to potential bidders (e.g., sufficient publicity, emails to expected interested firms)

Outreach activities are important to the success of a competitive solicitation process. PG&E's outreach efforts targeted a large number of potential Participants based on PG&E's contact lists of energy companies and individuals. These efforts likely played a role in the reasonably robust response to the RFO in terms of number of Participants and specific offers or projects.

PG&E maintains a detailed list of potential Participants with approximately 2,700 contacts that serves as the database for Seller contact and outreach. PG&E sent emails to all potential Participants on this list informing them of the 2020 System Reliability RFO – Phase 1 process and the issuance of the RFO. The list includes Diverse Suppliers. PG&E notified contacts on the mailing list of the issuance of the 2020 System Reliability RFO – Phase 1 and also provided several email notifications and updates to the email list during the solicitation process. In addition, while the notification of the RFO and timing for receipt of offers was very short, Participants were at least aware that PG&E had a procurement target and could pre-plan for participation in such an RFO going back to 2019 based on the CPUC Decision process.

PG&E initiated a comprehensive process for communicating with bidders for the 2020 System Reliability RFO – Phase 1 process. PG&E utilized the PowerAdvocate Platform as the means for Participants to submit their offers. In addition, PG&E also established a section on its public website for distribution of information to prospective Participants and other interested parties early on to notify Participants of the RFO. The public website also included contact information for PG&E should prospective Participants wish to ask any questions or request follow-up information.

The PG&E public website for the 2020 System Reliability RFO – Phase 1 contained general information to bidders to help bidders determine if they wanted to participate as a bidder in the process.⁶ The following documents and information were included on the public website for Participant review and utilization:

- CPUC Decision D.19-11-016:
- Solicitation Schedule for the 2020 System Reliability RFO Phase 1 process;
- RFO Documents including the 2020 System Reliability RFO Phase 1 Solicitation Protocol and associated Appendices⁷
- System Reliability RFO Phase 1 Participants Webinar
- System Reliability RFO Phase 1 Offer Form Webinar
- Contact Information for PG&E and the IE
- Questions and Answers from the Webinar

⁶ Participants would need to register with PowerAdvocate using the links included on the public website to gain access to the data room and applicable RFO documents and back-up information which would allow a participant to submit a bid into this solicitation.

⁷ The Appendices posted included the documents Participants must submit with their offers (i.e. Offer Form, Supplemental Project information, FERC Order 717 waiver, Confirmations and Agreements).

A total of 6 questions and answers were posted on the website. The IE found the website easy to access and navigate. All documents associated with the 2020 System Reliability RFO – Phase 1 were included on the website and were easy to identify, access, and download.

B. Identify Principles Used to Determine Adequate Robustness of a Solicitation (e.g. number of proposals submitted, number of MWhs associated with submitted proposals).

With regard to assessing whether the response to the solicitation was adequately robust, there are several criteria to consider:

- Was the response to the solicitation commensurate with the level of outreach?
- Did the solicitation encourage a diverse response from Participants in terms of products requested, project structure, pricing options, etc?
- Was the response large with respect to the number of proposals and megawatts ("MW") offered relative to the amount requested?
- Was the process a competitive process based on the amount of MW submitted by Bidders relative to the number of MW requested?
- Were the Solicitation Documents clear and concise such that Participants could clearly assess how to structure a competitive offer?

C. Did the IOU Do Adequate Outreach? If Not, Explain in What Ways it Was Deficient

There are several criteria generally applied for assessing the performance of the utility in its outreach and marketing activities:

- Did the utility contact a large number of prospective Participants?
- Were the utility's outreach efforts active or passive?
- Did the utility adequately market the solicitation?
- Could prospective bidders easily access information about the RFP?
- Did any prospective bidders complain about the process or access to information?

As noted above, PG&E contacted a large number of prospective Participants to inform them of the issuance of the RFO. The outreach activities of PG&E can be classified as "active" given that emails about the solicitation process were directly sent to prospective

Participants. In addition, PG&E held both a Participants webinar and an Offer Form webinar to provide information on the solicitation process, and to allow the Participants to ask questions and seek information about the solicitation process.

D. Was the Solicitation Adequately Robust

The overall result of this outreach activity was a reasonable interest in the RFO from the market and a reasonable response from Participants, particularly given the short turn-around time for the RFO. Offers were also received from a range of eligible Sellers who offered proposals for all products/contract structures requested at all identified sub-station locations.

PG&E received a total of offers from counterparties representing projects. Based on the largest eligible offer submitted, a total of of capacity was submitted. The IE found the response from the market to be reasonable and competitive for each product category, particularly given the short lead time allotted to submit offers.

In conclusion, the response of the market to PG&E's 2020 System Reliability RFO – Phase 1 provides evidence that the outreach and Participant engagement activities of PG&E were effective, and Participants felt they had an adequate opportunity to receive a contract from the process.

E. Did the IOUs Seek Adequate Feedback About the Bidding/Bid Evaluation Process From All Bidders After the Solicitation Was Complete?

PG&E's project team members were involved in regular communications with prospective Participants, primarily after submission of the offers for purposes of clarifying offers and gaining a perspective of the Participants ability to meet the August 1, 2021 COD Date. PG&E also scheduled calls with selected Participants to clarify the components of the offer. The IE participated in calls with Participants.

F. Was the Outreach Sufficient and Materials Clear Such That the Bids Received Meet the Needs the Solicitation Was Intending to Fill?

PG&E prepared initial versions of the Protocol Document and Offer Forms and issued the documents in an expedited manner to solicit interest from bidders. The IE reviewed the documents to ensure the documents were clear and concise.

The IE also found that PG&E's project team was particularly responsive to the needs of and comments provided by prospective Participants and also responded to questions in a reasonable timeframe.

G. Any Other Relevant Information or Observations

The majority of the Participants provided reasonably complete proposals with a moderate amount of clarification questions or information requirements after submission. After

submission of the Offers, PG&E's project team also worked diligently to ensure that the Participant Offer's conformed to the requirements of the RFO. Team members were in contact with the Participants within a day after submission of the Offers. PG&E's project team made every attempt to allow Participants to cure any deficiencies and conform their offers to RFO requirements within reason and subject to RFO requirements, in recognition of the short timeframe for preparing offers.

IV. Appropriateness of the 2020 System Reliability RFO – Phase 1 Bid Evaluation and Selection Methodology and Design

A. Identification of Principles for Evaluating PG&E's Bid Evaluation Methodology

This section of the report addresses the principles and framework underlying the IE's review of PG&E's evaluation and selection methodology for the 2020 System Reliability RFO – Phase 1 solicitation process. One of the important questions in this regard is whether the bid evaluation and selection methodology was fair and appropriate for this type of "all source" solicitation. Key areas of inquiry by the IE and the underlying principles used by the IE to evaluate the methodology include the following:

- Were the procurement targets, products solicited, principles and objectives clearly defined in PG&E's 2020 System Reliability RFO Phase 1 Solicitation Protocol and other materials?
- Is the IOU bid evaluation based on those criteria specified in the bid documents? In cases where bid evaluation goes beyond the criteria specified in the bid documents, the IE should note the criteria and comment on the evaluation process.
- Do the IOU bid documents clearly define the type and characteristics of products desired and what information the bidder should provide to ensure that the utility can conduct its evaluation?
- Does the methodology identify how qualitative and quantitative measures were considered and were consistent with an overall metric?
- Are there differences in the evaluation method for different technologies that cannot be explained in a technology-neutral manner?
- Was the bid evaluation and selection process and criteria reasonably transparent such that Participants would have a reasonable indication as to how they would be evaluated and selected?
- Was the bid evaluation methodology consistent with CPUC direction?

- Was PG&E's bid evaluation based on and consistent with the information requested in the RFO to be submitted by Participants in their proposal documents?
- Were the bid evaluation criteria consistently applied to all offers?
- Does the quantitative evaluation methodology allow for consistent evaluation of bids of different sizes and in-service dates? Are there differences in the evaluation method for different technologies that cannot be explained in a technology-neutral manner?
- Did the bid evaluation criteria and evaluation process contain any undue or unreasonable bias that might influence project ranking and selection results or in any way favor affiliate bids?
- Was the 2020 System Reliability RFO Phase 1 clear and concise to ensure that the information required by PG&E to conduct its evaluation was provided by project sponsors?
- Did the IOU bid evaluation criteria change after the bids were received? Explain the rationale for the changes.

In the view of the IE, the 2020 System Reliability RFO – Phase 1 Solicitation Protocol Document and related Appendices provide a reasonable amount of information on which Participants could base their offers. The documents contain detailed information on the products sought, the information required of Participants for offer submission, contract provisions, proposal documents and offer forms.

PG&E held a Participants Webinar to further describe the solicitation process but did not address the evaluation methodology or evaluation criteria in any detail. However, PG&E instead held a separate webinar for Participants to specifically review the offer form and information required of bidders. Overall, the IE concludes that the products solicited, procurement targets, protocol information and documents required to be provided with the offer were generally clearly defined and applied. PG&E also provided the IE with internal evaluation protocol documents for quantitative and qualitative factors prior to submission of Offers. Furthermore, the IE and PG&E's quantitative evaluation team did hold discussions prior to submission of offers to generally lock-down the evaluation methodology, input assumptions, and evaluation criteria. PG&E also provided documentation to the IE with regard to the evaluation results that allowed the IE to fully review and verify the inputs for each offer and the outputs based on the assessment of specific cost and benefit categories for each offer.

PG&E followed its evaluation criteria and methodology in undertaking the evaluation of the offers. Furthermore, the methodologies applied to the different types of products were fair and reasonable and did not unduly bias any technologies or products. Also, PG&E did apply consistent evaluation methodologies and models to the various proposals or

project structures sought. The methodologies applied were consistent with the project structure evaluated.

To address the other issues identified, the IE will first present a detailed description of the bid evaluation methodology and process implemented by PG&E to undertake the evaluation. This includes both the quantitative and qualitative criteria used in the evaluation. Subsequently, the IE then discusses the strengths and weaknesses of the methodology relative to the issues identified above.

B. Overview Description of PG&E's Least Cost Best Fit ("LCBF") Evaluation Methodology

This section of the report provides an overall description of PG&E's bid evaluation methodology, procedures, and criteria applicable to the 2020 System Reliability RFO – Phase 1 process. The methodology selected is designed to generally conform to the Least Cost Best Fit ("LCBF") procedures applied in other solicitations. For this report, the IE is providing a general summary of the overall methodology and criteria used in the evaluation in this section of the report.

The solicitation protocol for the 2020 System Reliability RFO – Phase 1 bid evaluation procedure and methodology states that PG&E will evaluate each offer using both quantitative and qualitative criteria, which includes but is not limited to: Net Market Value and Project Viability. The evaluation procedure protocol describes how to combine the criteria to determine the ranking and the shortlist.

From a quantitative perspective, an evaluation will be performed on all offers by first calculating each project's Net Market Value ("NMV"). Net Market Value will be measured in present value and ranked from highest to lowest.

The following describes the general evaluation process flow envisioned by PG&E for undertaking the evaluation process once the Evaluation Team commenced formal reviews⁸:

- All offers will be reviewed to determine whether or not they meet the applicable eligibility requirements for consideration in the RFO;
- Offers will be reviewed by the Solicitation Team for an assessment of Project Viability. The review may consist of, but will not be limited to the following factors:
 - Counterparty Experience
 - Site Control
 - Equipment Availability

⁸ PG&E's Evaluation Teams reviewed the offers when received to ensure the Participants provided the requested information and to identify any inconsistencies in the offer forms and other offer information. In addition, the Evaluation Team also identified cases where the data appeared inconsistent or where further clarification of the information was required. In such cases, PG&E contacted the Participants to seek to clarify or correct the data prior to conducting the offer evaluation process.

• Electric Grid Interconnection

The review team conducting the viability assessment will provide qualitative results in the form of

- A Net Market Value assessment will be performed on all offers
 - Valuations will be updated when new information is received from Participants;
- Offers will be ranked by Net Market Value
- To develop the shortlist, PG&E will consider the following factors:
 - Net Market Value
 - Overall Project Viability score;
- After shortlisting, the following additional criteria will be considered before executing an agreement:
 - Net Market Value (to account for changes in value which might occur during negotiations);
 - Project Viability;
 - Credit;
 - Contract Modifications;
 - Safety;
 - Contract term and Commercial Operation Date

C. Detailed Description of the Evaluation Process

The following section of the report provides a more in-depth discussion of the components of the quantitative evaluation methodology and process used by PG&E and describes in general how the various offers would be evaluated. In addition, this section includes a description of the input assumptions utilized for evaluation purposes.

Valuation Components Overview

PG&E's evaluation protocol specifies how the Market Valuation criterion will be applied to the individual offers received in the 2020 System Reliability RFO – Phase 1.

In the solicitation process, a Participant submits an offer detailing the costs and operational characteristics of the energy generation facility. For each offer, NMV is calculated based on the summation of several components as follows:

Net Market Value: NMV = C + E - F - T where

C = Capacity Value

E = Energy Value

F = Fixed Cost

T = Transmission Network Upgrade Costs



The market curves will be used for shortlisting Offers received.

Valuation Summary by Contract Type

PG&E prepared its evaluation methodologies to be consistent with the products and contract types requested. There are four contract types which bidders may offer:

- Behind the Meter Resource Adequacy Agreement;
- Long-Term Resource Adequacy Agreement;
- Demand Response Agreement, and
- Resource Adequacy Confirm.

While there are different contracts types, with different terms, they will largely all follow the same valuation process. Only the Behind the Meter Resource Adequacy Agreement has the

Valuation Components

The following sections describe in more detail how the costs and benefit values of each component are included for each Agreement type.

Energy Value

As noted,

Capacity Value

Capacity value is the net present value of monthly capacity values across all months during the delivery period.

The amount of NQC and EFC are determined by the particular asset operating characteristics as specified in its Offer. NQC for Energy Storage offers is, in general, based on the maximum discharge power that ES can continuously sustain for 4 hours in 3 consecutive days. EFC for Dispatchable Energy Storage offers will be determined based on the Appendix B of CPUC Decision 14-06-050 dated June 26, 2014. The calculations are implemented in the Offer Form.

Fixed Cost

Fixed costs are determined by the net present value of monthly Contract Payments made under the contract.

Transmission Network Upgrade Costs

For all offers that submit a Phase 1 interconnection study to CAISO, PG&E used the latest CAISO tariff rules and independent study results conducted as part of the feasibility study to determine the transmission network upgrade cost adder. For all offers that do not submit a Phase 1 interconnection study,

Alternative Capacity Value

In its IRP proceeding, the CPUC recently released a study of the Effective Load Carrying Capacity of batteries as more and more batteries are on the grid. The study⁹ showed that a marginal addition of 4-hour batteries becomes less effective at providing reliability if enough batteries are on the grid.

⁹ Please see CPUC publication "Inputs & Assumptions: 2019 – 2020 Integrated Resource Planning (February 2020)", Figure 7.2 on page 92.

Input Assumptions

An important aspect of the offer evaluation process is the development of input assumptions to use in the evaluation of the Participant's pricing formulas and other evaluation parameters. The key input prices for the evaluation include RA price curves and hourly energy prices. This includes the following components:



Qualitative Factors – Project Viability

In addition to the quantitative factors previously discussed, PG&E proposed to evaluate each offer using qualitative attributes to assess project viability as well. Project viability means the likelihood that any resource associated with an offer can (1) be successfully developed and (2) provide the product and services required for the period stated in the offer. This assessment is based on a review of the status and plans for key project activities (e.g. experience, site access, permitting, procurement, construction, interconnection, environmental impact, Participant experience and track record, project schedule/critical path, etc.). For assessment of the qualitative criteria, PG&E proposed to use subject matter experts to review and evaluate the offers relative to their criteria of expertise. A brief description of the qualitative factors to be considered includes:

PG&E will develop a single composite rating for Project Viability based on the status and plans for key project activities. PG&E may evaluate the financing viability of an offer. The evaluation may include the review of lender or investor commitment letters, financing package, project pro-forma, and other relevant documents. PG&E may also evaluate the environmental characteristics and environmental impacts of a project.

PG&E may screen project proposals to assess whether there are safety risks associated with their particular technology. Projects that fail the safety screen will not be considered and the remainder of the viability evaluation will not be conducted.



D. Revisions to Bid Evaluation Criteria

The CPUC IE Report Template requests the IE to address whether the bid evaluation criteria changed after the bids were received and to explain the rationale for the changes. In general, PG&E maintained the same proposed methodology as described in the 2020 System Reliability RFO – Phase 1 protocol. PG&E developed an internal Market Valuation Protocol that provided a more detailed description and explanation of the evaluation methodology. The IE found that PG&E maintained a consistent evaluation methodology based on the details described in the internal Market Valuation Protocol.

E. Evaluation of the Strengths and Weaknesses of PG&E's Methodology in This Solicitation

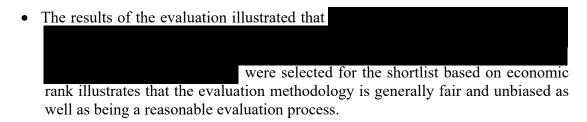
PG&E has implemented a methodology for evaluating the eligible offers received in response to the 2020 System Reliability RFO – Phase 1 that includes a combination of existing methodologies used in previous solicitations as well as revisions to traditional methodologies to address the requirements of this solicitation. Since the solicitation is seeking Resource Adequacy capacity, the focus on the evaluation methodology is designed to assess the cost and benefits of each offer.

Strengths of Evaluation and Ranking Methodology

The following represents the IEs perspective regarding the strengths associated with the evaluation and ranking methodology implemented by PG&E for the 2020 System Reliability RFO – Phase 1 which is primarily seeking RA capacity. These include:

- The methodology used by PG&E takes into consideration all reasonable costs and benefits associated with the various types of offers, project structures, and contract structures. Since PG&E is seeking RA capacity, the evaluation methodology is relatively straightforward with few cost and benefit components;
- The overall evaluation methodology is capable of effectively and consistently evaluating a range of different types of resources, project structures with different terms, product sizes, and operating parameters. The IE does not view the methodology as having a direct bias toward any product solicited in this RFO with respect to contract structure;

- PG&E uses consistent input assumptions for undertaking the evaluation of all offers;
- At the request of Merrimack Energy during the development of PG&E's 2014 Energy Storage RFO, PG&E developed an internal integration model to compile all input and output data for each of the Offers and provides a detailed summary of the components of the costs and benefits for each Offer, on a monthly basis including nominal and discounted dollars, and provides other pertinent data for each offer to allow the IE to undertake a detailed review of the evaluation results for each offer. This is a very valuable tool to allow the IE to easily and quickly assess the reasonableness of PG&E's evaluation results;
- PG&E's proposed methodology is generally consistent with Least Cost Best Fit principles by incorporating quantitative and qualitative factors to determine a shortlist of projects;
- PG&E prepared a detailed internal evaluation protocol documents that clearly described the evaluation methodologies and criteria, which facilitated review by the IE;
- The key inputs and assumptions (i.e. capacity price forward curve, discount rate, and a forward curve for power prices) were locked down prior to receipt of offers, which serves to minimize any potential evaluation bias;



Weaknesses of the Evaluation and Ranking Methodology

Based on the simplicity of the evaluation methodology, Merrimack Energy has raised only a few minor potential weaknesses.

- PG&E may want to consider if it should provide a signal to Participants if PG&E has any preferences related to offer selection. For example, if PG&E prefers shorter term offers (i.e. 10 years as opposed to 15 years) it should state so in the Protocol document;
- While PG&E provided an overall project viability score for each offer submitted, PG&E may want to consider disaggregating the qualitative evaluation criteria to also evaluate the component criteria underlying the overall score.

G. Future LCBF Improvements

There are several issues that should be considered as potential future improvements in the evaluation and ranking process. These include:

More detailed scoring factors and scoring systems, such as scoring relative to the highest and lowest performance on a given factor, can be developed and fully disclosed in the RFP documentation. In this way, bidders' pre-bid efforts could be concentrated on qualitative factors important to PG&E. Alternatively, PG&E could establish thresholds that all offers would have to meet. The IE would expect that as more new projects are proposed, qualitative criteria will be more important for screening out non-viable or risky projects;

• While it is challenging to undertake a reasonable project viability assessment for all offers submitted outside the general approach undertaken by PG&E to identify any potential fatal flaws, it may be worthwhile to include a more formal and detailed project viability assessment prior to shortlisting, particularly if a number of the projects selected through this solicitation fail to go forward;

H. Additional Information or Observations Regarding PG&E's Evaluation Methodology

No additional information or observations are provided.

V. Administration of the System Reliability RFO Solicitation Process

In performing its oversight role, the IE participated in and undertook a number of activities in connection with the 2020 System Reliability RFO – Phase 1 including reviewing the RFO documents, ¹⁰ participating in frequent conference calls with the PG&E project teams given the expedited nature of the solicitation, participating in both the Participants Webinar and Offer Form Webinar, participating in discussions on the offer evaluation methodology and selection process, organizing and summarizing the offers received, reviewing and commenting on the evaluation and selection process and results at each step of the process, and participating in calls with bidders (including shortlisted bidders) throughout the evaluation, selection and negotiation processes.

¹⁰ PG&E and Merrimack Energy had initial discussions regarding the All Source RFO in November, 2019. PG&E provided a draft of the RFO to the IE for review and the parties also conducted a conference call to discuss the RFO process. However, PG&E decided to push back the issuance date of the RFO and launched the DGEMS RFO in an attempt to secure projects to meet an in-service date prior to August 1, 2020.

A list of the key milestone events which occurred during the solicitation process as well as the activities of the IE during the procurement process consistent with the important activities and milestones for the process are described below.

Issuance of the 2020 System Reliability RFO – Phase 1

PG&E launched its 2020 System Reliability RFO – Phase 1 on February 28, 2020. PG&E announced issuance of the RFO via an email blast to its contact list. The email distributed identified the web address for PG&E's website¹¹ for the RFO and also provided information on the basis for and requirements of the RFO, schedule for the upcoming Participants Webinar on March 5, 2020, and deadline for Participants to submit offers on March 25, 2020.

RFO Protocol documents originally issued on February 28, 2020 was subsequently revised and updated on two occasions. On March 16, 2020, PG&E notified Participants via an email blast that Appendix A – Offer Form, Appendix B – Supplemental Project Information and Appendix E4 – Demand Response Agreement had been updated and uploaded to PG&E's website for the solicitation. On March 19, 2020 PG&E informed Participants that it had updated the form agreements available on the website.

The Solicitation Protocol provided an overview of the RFO including the solicitation goals, project types/agreements, eligibility requirements, and submission requirements. The RFO also contained several appendices, several of which bidders had to submit in their proposal. Appendices included:

- Appendix A Offer Form
- Appendix B Supplemental Project Information
- Appendix C FERC Order 717
- Appendix D Confidentiality Agreement
- Appendix E1 Resource Adequacy Confirm
- Appendix E2 Long Term Resource Adequacy Agreement
- Appendix E3 Behind-the-Meter Resource Adequacy Agreement
- Appendix E4 Demand Response Agreement
- Appendix G1 Letter of Credit
- Appendix G2 Request for Taxpayer ID (W-9) Form

PG&E used two websites for the RFO. PG&E maintained a webpage on its website devoted to the 2020 System Reliability RFO – Phase 1. The website contained information to assist bidders on the front-end of the solicitation process including RFO documents, Q&A, and other information to assist the bidders. PG&E also utilized the PowerAdvocate Platform, which was used as a repository for the bidders to submit their proposals.

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¹¹ The website address for the solicitation is www.pge.com/systemreliabilityrfo-phaseone.

Participants Webinar

PG&E held its Participants Webinar on March 5, 2020. The IE called into and monitored the Webinar. Topics addressed at the Webinar included:

- Objective of the 2020 System Reliability RFO Phase 1 and Agenda;
- Role of the Independent Evaluator;
- Overview of CPUC Decision D.19-11-016;
- Overview of the Solicitation;
- Overview of the Agreements;
- Offer Submittal;
- Solicitation Schedule;
- Application of PowerAdvocate;
- Offer submittal requirements;
- Communications and website;

A total of approximately 80 individuals attended the Participants Webinar.

Questions and Answers and Posted Documents for Bidders

PG&E provided responses to a total of 6 questions from prospective bidders. The Q&As were posted to PG&E's website under Frequently Asked Questions.

Offer Form Webinar

On March 19, 2020, PG&E held the Offer Form Webinar for the 2020 System Reliability RFO – Phase One. Topics discussed included an overview of the 2020 System Reliability RFO – Phase One process, RFO schedule, communications with PG&E and the IE, and a detailed description of the Offer submittal process and the forms and documents required as part of the offer package. The majority of the Webinar focused on a detailed walk through of the Offer Form to ensure Bidders fully understood the submittal requirements for each tab and cell in the Offer Form. PG&E's objective was to minimize Bidder error in completing the Offer Form so as to reduce the time necessary to allow for conformance with RFO requirements, and therefore, allow more time for the offer evaluation process given the extremely tight schedule for the solicitation. A total of twenty-four attendees called into the webinar.

<u>Reviewed and Commented on Internal Evaluation Protocols and Evaluation</u> <u>Methodology</u>

The IE had the opportunity to review an earlier version of the RFO protocol document prior to initiation of the DGEMS RFO but did not review the RFO Protocol document prior to issuance for the Phase 1 RFO. The IE did review the RFO once it was posted to the website and had no issues of concern with the RFO Protocol.

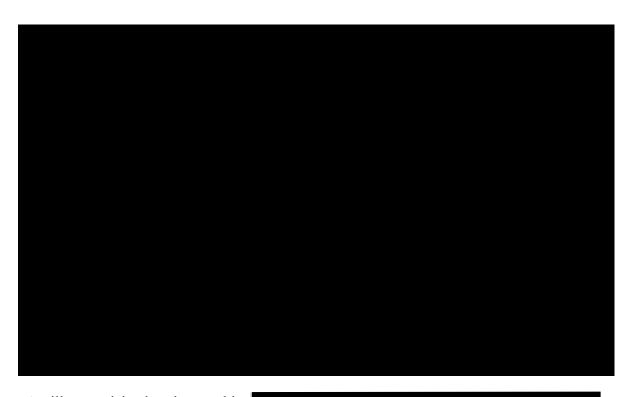
Receipt of Offers – March 25, 2020

The deadline for PG&E to receive offers was March 25, 2020. Participants were required to submit all required forms and documents to the PowerAdvocate Platform. Upon receipt of offers on PowerAdvocate, the IE reviewed the offers and prepared a summary table which contained pricing, operational information, commercial and other pertinent information associated with each offer. PG&E received a total of offers from counterparties, representing projects. PG&E received offers for a range of products and contract structures (i.e. Long-Term RA Agreement, RA Confirm, BTM RA Agreement, and Demand Response Agreement).

The IE and PG&E team also reviewed the offers for conformance with eligibility requirements and completeness of the offers. After review and discussions, it was determined that of the original offers were non-conforming and were conforming. With regard to the non-conforming offers,

Table 2 provides a list of all conforming offers submitted by Participants.

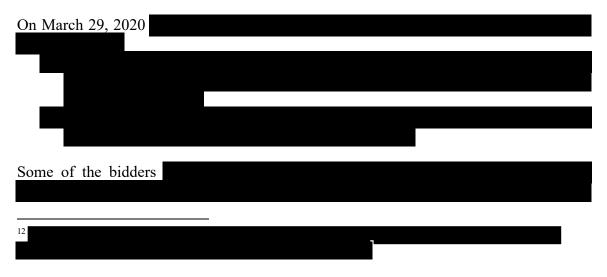




As illustrated in the above table,
bidders submitted offers for all contract structures eligible. PG&E received offers from bidders who submitted Demand Response offers, RA offer under an RA Confirm, and from bidders under a BTM Agreement structure.

Communications with Bidders

Upon receipt of the offers, the PG&E Phase 1 RFO team immediately began to review the offers submitted and identified either information that was missing from an offer, errors in submission, or sought clarification regarding information included in the offers. The initial round of communications to conform offer requirements took place within two days after offer submission.



PG&E scheduled calls with a few of the bidders in late March to clarify information regarding their offers. By April 1, 2020 PG&E was able to sufficiently clarify issues with offers to allow PG&E to undertake the offer evaluation process.

Evaluation of the Offers Submitted

Subsequent to the initial conformance review, PG&E began to evaluate the offers from a quantitative and qualitative perspective and prepare evaluation files with the offer evaluation results. PG&E submitted initial evaluation output files to the IE on April 2, 2020 with an explanation of "how to read the results" and a summary of the RA counting assumptions. Later in the same day, PG&E provided updated files to the IE regarding the evaluation results.

PG&E's evaluation files which were provided to the IE and served as the basis for the evaluation contained the following tabs:



Similar to the integration model prepared by PG&E at Merrimack Energy's request for previous Energy Storage Solicitations, the

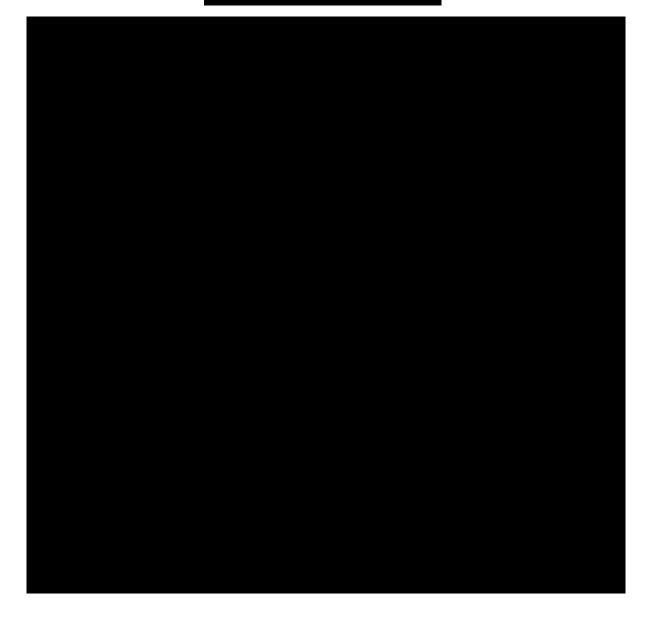
In the process of reviewing the quantitative evaluation results the IE team identified several follow-up questions. However, the team was able to reconcile the answers to the questions through the use of the

PG&E also provided the IE with the initial project viability assessment conducted on each offer by PG&E's qualitative evaluation team. The project viability assessment included a score for overall project viability for each offer as well as the project viability

score for interconnection. In addition, notes were provided for each score described above as the basis for awarding such a score.

Shortlist Selection

PG&E provided the IE with a slide deck that contained the proposed shortlist for the solicitation.





IE Comments on Shortlist

The IE reviewed the shortlist proposed by PG&E and was in general agreement with shortlist selection. The IE's initial view was that

On April 6, 2020, PG&E provided its project viability assessment to the IE.

PRG Slide Deck

PG&E sent a slide deck to the PRG on April 6, 2020 providing a solicitation overview and offer summary. The purpose of the presentation was to provide an overview and offer summary on PG&E's 2020 System Reliability RFO – Phase 1 Solicitation. In the presentation PG&E provided an overview of CPUC Decision D.19-11-016 with a focus on PG&E's minimum procurement requirements of 765.1 MW, with 50% of the MW target to come online by August 1, 2021. PG&E noted that the target for the Phase 1 solicitation was for 382.55 MW. PG&E also stated that it will issue Phase 2 in Q3 of 2020, with a target of 573.825 MW due online by August 1, 2022.

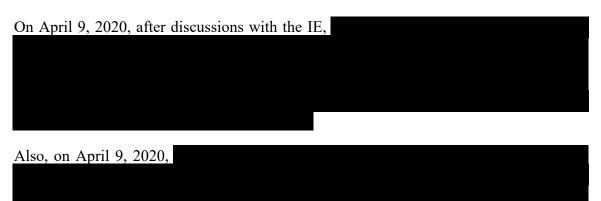
PG&E identified the products required (i.e. Resource Adequacy Only), the Agreement types, eligible resources, delivery terms and minimum sizes as listed in Table 1 of this report along with the eligibility requirements for each proposal. PG&E also provided a

summary of the offers submitted, noting that there were unique eligible offer variants provided by counterparties. The MWs offered totaled up to .

PG&E also prepared a list of the conforming offers including identifying the offers selected for the shortlist. were selected for the shortlist from

PG&E also included the solicitation schedule, which identified the proposed date for submitting agreements as Mid-May 2020.

Notification to Bidders



On April 10, 2020 PG&E notified bidders of their status in the 2020 System Reliability RFO – Phase 1 process. PG&E's letter to bidders selected for the shortlist informed the bidder its project had been selected for the shortlist. If the bidder wished to continue to participate in the solicitation, the bidder was required to respond to the email conveying the letter by April 13, 2020. As described in the letter, by accepting a shortlist position the bidder agrees to (1)

(2) acknowledge and accept PG&E's Confidentiality Agreement; and (3) inform if the project has been or will be submitted in another solicitation with PG&E or another entity. In addition, PG&E reminded the bidder that continued participation in the solicitation requires the submission of a Shortlist Offer Deposit of either cash or a letter of credit in the amount of \$3/kW of the payment quantity. The shortlist offer deposit must be received by close of business on April 15, 2020. Finally, PG&E also informed bidders that shortlisted RFO Participants are required to complete PG&E's safety registration and prequalification process with ISNetworld.

Initiation of Contract Negotiations

PG&E scheduled initial meetings with shortlisted Participants to discuss their projects and the steps in the negotiation process. The negotiation process for each executed

The IE concluded that all decisions regarding the above offers were reasonable and all bidders were treated fairly in the process.

Final Contracts

PG&E executed seven¹³ contracts as a result of the 2020 System Reliability RFO – Phase 1 for a total of 423 MW. The contracts executed are listed in Table 4.

Table 4: Summary of Contracts Executed by PG&E



¹³ As noted in footnote 3, PG&E executed three contracts with Diablo Energy Storage LLC for 50 MW each,

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VI. Did PG&E Fairly Administer the Evaluation Process?

A. Principles and Guidelines Used to Determine Fairness of Process

In evaluating PG&E's performance in implementing the 2020 System Reliability RFO – Phase 1 solicitation process, the IE has applied a number of principles and factors, which incorporate those suggested by the Commission's Energy Division in previous Templates as well as additional principles that the IE has used in its oversight of other competitive bidding processes. These include:

- What qualitative and quantitative factors were used to evaluate offers?
- If applicable, were affiliate offers treated the same as non-affiliate offers?
- Were economic evaluations consistent across offers?
- Was there a reasonable justification for any fixed parameters that enter into the methodology?
- Were all Participants treated the same regardless of the identity of the Participants?
- Were Participants questions answered fairly and consistently and the answers made available to all?
- Did the utility ask for "clarifications" from Participants, and what was the effect, if any, of these clarifications?

As described in detail in the previous sections of this report, PG&E evaluated the offers received based on both quantitative and qualitative factors.

In the opinion of the IE, PG&E assessed all offers in a similar manner although the components of the evaluation methodology and elements of the contract negotiation process varied appropriately by resource type. As previously noted, PG&E used reasonable methodologies for assessing each type of offer.

The IE felt that the economic evaluations were consistent across all types of offers, with the objective of the evaluation to assess the benefits and costs of each offer based on Net Market Value.

PG&E's project team was very actively engaged in the process from the very beginning. This included responding to bidder questions and seeking clarification from Participants when required. With regard to Bidder questions, PG&E both responded to questions from Participants about the solicitation process and posted the appropriate responses for all Participants to review on its website. The IE was copied on all Questions and Responses to Participants. We found no cases where PG&E favored a specific Participant over another. PG&E responded consistently to all Participants throughout the process.

B. Description of IE Methodology Used to Evaluate Administration of PG&E's Solicitation Process, Notably the LCBF Process

As previously discussed, the IE was actively involved in all phases of the process. The IE was copied on all emails exchanged between PG&E and Participants. The IE was also invited and attended most of the calls with Participants wherein PG&E sought to clarify any uncertainties about the offers or inconsistencies associated with submission of offer information.

The IE also compiled summaries of all offers and the results of the bid evaluation and was fully engaged in the process throughout the solicitation. In addition, the IE and PG&E evaluation and transaction teams held regular conference calls to discuss the progress of the solicitation and any issues that arose during the process.

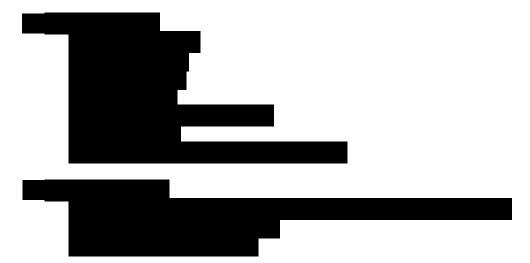
With regard to the quantitative evaluation, the IE held discussions with the quantitative evaluation team to discuss the bid evaluation methodology prior to submission of bids to ensure the IE had an understanding of the evaluation methodology and presentation of evaluation results. PG&E provided copies of the evaluation results generated by the quantitative evaluation team to the IE on several occasions during the evaluation process, including prior to shortlisting as well as results associated with final offers and selection.

At the request of the IE, PG&E prepared an integration model for use by the IE to review and validate the results of PG&E's LCBF evaluation process. ¹⁵ The Integration Model provided input and output results for each offer by integrating several spreadsheet tabs to organize all relevant data for a specific project/offer. The model allows the IE to enter the number of a specific offer in a specific cell in the workbook. Once the project number

Merrimack Energy Group, Inc.

¹⁵ PG&E had previously developed such a methodology for the CHP 2 and CHP 3 processes and the Energy Storage solicitations to allow Merrimack Energy to access all inputs and output results for each offer in an organized fashion to be able to verify the reasonableness of the offer evaluation results. Merrimack Energy requested expansion of the integration model for the first two Energy Storage solicitations. The model again used for this solicitation.

was entered, the integration model provided an array of information about each offer including the following data:



The integration model results allowed the IE to conduct a thorough review and assessment of the valuation results for each offer. In addition, the IE was able to use the integration model results to review and evaluate important metrics for each of the offers submitted.

For evaluating the LCBF process, the IE initially reviewed the evaluation results included in the spreadsheets submitted by PG&E to the IE to assess whether there appeared to be any inconsistencies or unexplained outliers in the results. The spreadsheets prepared by PG&E included both an input file and an output file. The output file included Net Market Value by component for all cost and benefit components.

After review of the bid evaluation methodology and testing of the results of the evaluation provided by PG&E, the IE concluded that the evaluation methodology was reasonable for this type of RA assessment and effectively evaluated offers with different products, terms, and contract structures. The IE found no evidence of undue bias in the evaluation methodology that favored one type of product over another.

Based on the IE's active involvement throughout the solicitation process, the IE concluded that PG&E followed the criteria outlined in the 2020 System Reliability RFO – Phase 1.

C. Identification of Non-Conforming Bids

After the offers were received, the initial task undertaken by PG&E's project team was to review the offers to assess if the offers conformed to the eligibility provisions listed in the Protocol. Although PG&E's objective was to be more inclusive, PG&E did follow its eligibility and threshold requirements when classifying offers as non-conforming. The non-conforming offers were identified in the appropriate section of this report. In addition, the report identifies any offers that withdrew.

D. Utility Evaluation and Outsourced Evaluation

This section of the IE Template asks the IE to identify those parts of the process conducted by the utility, and to opine on how the parameters and inputs were used and whether they were reasonable. In addition, the Template asks the IE to identify any parts of the process that were outsourced to either the IE or a third party, what information did the utility communicate to that party and what controls did the utility exercise over the quality or specifics of the outsourced analysis.

In short, PG&E was primarily responsible for all aspects of the solicitation process, including all the evaluations of the offers received. The IE did not have any direct requirement to lead or conduct any specific aspect of the evaluation. Instead, the IE's role was to primarily review and assess whether the results of the analysis undertaken by PG&E were accurate and whether the process was fair and consistent for all Participants.

The IE is not aware of PG&E outsourcing any aspects of the evaluation process to a third-party.

E. Transmission Analysis Procedures

For all offers that submit a Phase 1 interconnection study to CAISO, PG&E used the latest CAISO tariff rules and independent study results conducted as part of the feasibility study to determine the transmission network upgrade cost adder. For all offers that do not submit a Phase 1 interconnection study, PG&E used

PG&E included transmission cost adders in the evaluation

for

F. Criteria or Analysis Used to Create the Short-List

PG&E included a description of its offer evaluation methodology and approach in both the 2020 System Reliability RFO – Phase 1 Protocol and the Participants Webinar presentation. PG&E noted its evaluation methodology will apply "least-cost, best-fit" principles, using quantitative and qualitative criteria to evaluate the submitted Offers. PG&E stated that the final Net Market Value calculation would be used as the basis for ranking and selection.

G. Offer Evaluation Results and Shortlist Assessment

The offers received were evaluated based on the methodology described in the previous section of this report.

PG&E generally selected projects in merit order based on NMV ranking.

H. Conclusions Regarding Administration of the Bid Evaluation Process

The IE has concluded that the bid evaluation process was fairly administered with respect to all Offers. The IE felt that PG&E's project team performed their function in communicating with Participants throughout the process in an exemplary manner, including responses to Participants questions prior to offer submission to assist Participants with questions about submission requirements, follow-up communications with Participants to clarify offer forms and information about each specific offer after submission and prior to evaluation, and with regard to follow-up conference calls with Participants that were selected for the shortlist and contract negotiation. PG&E generally provided thorough and informative responses to Participant questions and did so in a timely manner. In addition, the IE found PG&E to be very inclusive of all potential Participants.

The IE felt that PG&E's evaluation methodology was effective in evaluating a range of potential products eligible for the solicitation and agreement structures in a consistent and fair manner. The fact that the evaluation results illustrated a mix of products in the rank order shows that the methodology is fair and unbiased. In addition, the quantitative evaluation methodology allowed for consistent evaluation of bids of different sizes and in-service dates and was designed to be technology neutral.

I. Any Other Relevant Information

None at this time.

VII. Treatment of Affiliate Bids and UOG Ownership Proposals

For this solicitation, third-party only agreements were expected. PG&E did not include any contract options that envisioned utility ownership possibilities.

VIII. Was the RFO Acceptable

- 1. Overall was the RFO conducted in a fair and competitive process, free of real or perceived conflict of interest?
- 2. Based on the complete bid process, should some component(s) be changed to ensure future RFOs are fairer or provide a more efficient, lower cost option?
- 3. Any other relevant information

The IE concludes that PG&E has implemented the 2020 System Reliability RFO – Phase 1 in a fair and consistent manner, marked by an overall objective to maintain a reasonably transparent and competitive solicitation process designed to be inclusive for all Participants. PG&E worked closely with the Participants to ensure they fully understood the requirements of the process and were able to submit all the necessary information to allow for a thorough and consistent evaluation process given the short time available to conduct the solicitation.

As noted in this report, PG&E's outreach activities were designed to encourage a wide range of participants. PG&E's interaction with Participants before and following submission of offers to clarify offers submitted facilitated participation by a broader supplier base.

The IE was in general agreement with PG&E's overall shortlist selection.

. The IE also supports the approval of all contracts executed by PG&E with five counterparties.

IX. Conclusions and Recommendations

A. Conclusions and Observations

Merrimack Energy has the following conclusions and observations regarding the 2020 System Reliability RFO – Phase 1 solicitation process based on its role of IE in this process:

1. PG&E implemented the 2020 System Reliability RFO – Phase 1 solicitation process consistent with CPUC Decision D.19-11-016 which requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716.9 MW to come on line between August 1, 2021 and August 1, 2023 and to procure and have online 50% (358.45 MW of the target by August 1, 2021. Through this RFO, PG&E has executed seven contracts for 423 MW to be on-line by August 1, 2021, with an IDD date of October 1, 2021. All contracts are for Battery Energy Storage offers with viable projects and counterparties;

- 2. PG&E's 2020 System Reliability RFO Phase 1 resulted in a reasonably robust response from the market, particularly given the relatively short lead-time. PG&E received offer variations, which represented projects from counterparties for a total of . Two of the contracts are with projects for which PG&E has an existing contract;
- 3. PG&E's outreach activities and interaction with Participants prior to and after submission of offers was designed to provide a significant base of information for Participants. This included holding a Participants Webinar Offer Form Webinar for potential Participants. PG&E engaged in discussions and email exchanges of a daily basis to ensure the Participants were in line with the schedule and process. The IE participated in these communications and felt that all Participants were treated fairly and equitably. In addition, PG&E sent emails to all contacts on its email list for solicitations, which totals nearly 2,700 contacts. Overall, PG&E's outreach activities were extensive;
- 4. PG&E developed the evaluation methodologies and process to reflect the products being solicited, similar to the "Least Cost Best Fit" methodology used for other recent similar RFOs. In addition, at the IE's request, PG&E prepared an integration model for use by the IE to review the results of the evaluation process;
- 5. The IE found the solicitation documents to be reasonably transparent and well-structured to allow potential Participants to effectively decide whether and how they wished to compete. The 2020 System Reliability RFO Phase 1 Solicitation documents clearly defined the procurement targets, products solicited, eligibility requirements, evaluation process and criteria, information required of Participants and company objectives;
- 6. PG&E undertook both a quantitative and qualitative evaluation of the offers submitted consistent with the evaluation process identified in the 2020 System Reliability RFO Phase 1 Solicitation Protocol and Offer Form Webinar. The quantitative evaluation provided a rank order of offers based on a Net Market Value ("NMV") evaluation metric . The output files also included individual cost and benefit components for each offer on a basis as well as total Net Market Value based on ;
- 7. Based on the evaluation process, PG&E selected an initial shortlist comprised of projects, including at least ;
- 8. The IE found no evidence of any preference toward any bidder or type of project;
- 9. The IE concludes that the process was undertaken in a fair and equitable manner and all Participants were treated equally. The IE received no complaints or criticisms about the process;

10. The IE recommends approval of all contracts executed by PG&E	
10. The 12 recommends approval of all contracts executed by 1 Gee2	
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Pacific Gas and Electric Company 2020 System Reliability Request for Offers – Phase 1

Independent Evaluator Report Public Version

Attachment A

Long Term Resource Adequacy Agreement with Diablo Energy Storage, LLC

May, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



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I. Introduction

A. Overview

Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements ("LTRAA") with Diablo Energy Storage, LLC¹ ("Diablo"), each for 50 MW for a total of 150 MW of Battery Energy Storage System capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements ("LTRAA") with Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements ("LTRAA") with Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource Adequacy Agreements PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PG&E") is seeking approval of three Long-Term Resource PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PGWE") is seeking approval of three Long-Term Resource PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PGWE") is seeking approval of three Long-Term Resource PG We Diablo Energy Storage System Capacity. Pacific Gas and Electric Company ("PGWE") is seeking approval of three Long-Term Resource PG We Diablo Energy Storage System Capacity. Pacific Gas and Pacific Ga
As described in the proposal of LS Power, the Diablo Energy Storage project is a nominal 200 MW lithium-ion based In-Front-of-the Meter battery energy storage project located within the PG&E Service territory, in a disadvantaged community in Pittsburg, California. Fifty megawatts (50 MW) of the project is currently under contract with PG&E resulting from the 2016 Energy Storage RFO, with a contractual online date of December 1, 2021.
Project capacity offered is incremental to baseline assumptions in the CPUC preferred System Plan adopted by the CPUC in Decision D.19-04-040.
The contract amount selected by PG&E for this project is comprised of a total of 150 MW/600 MWh battery storage systems with 4-hour duration under three separate contracts of 50 MW each.
Diablo Energy Storage, LLC

The LTRAA with Diablo Energy Storage, LLC was executed by PG&E pursuant to the Company's 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1"). Through this RFO, PG&E is seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021 pursuant to California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"). The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online, 50% (358.45 MW) of the target by August 1, 2021.

PG&E launched the 2020 System Reliability RFO – Phase 1 on February 28, 2020 and received offers on March 25, 2020. PG&E executed seven Agreements for eligible products as a result of the solicitation, representing a total of 423 MW, including a total of 150 MW of energy storage capacity under the three 50 MW LTRAAs with Diablo Energy Storage, LLC.

This Attachment A to the Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1 process focuses on the two sections of the CPUC IE Report Template associated with discussions of project-specific negotiations (Section E of the Report Template) and of the contract approval issue (Section H of the Report Template) – does the contract merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market? A separate Attachment is provided for each Agreement executed by PG&E with eligible resource providers vis this solicitation. Accordingly, the IE Report on PG&E's 2020 System Reliability RFO – Phase 1 will contain Attachment A through Attachment E, which address each contract executed through this solicitation.

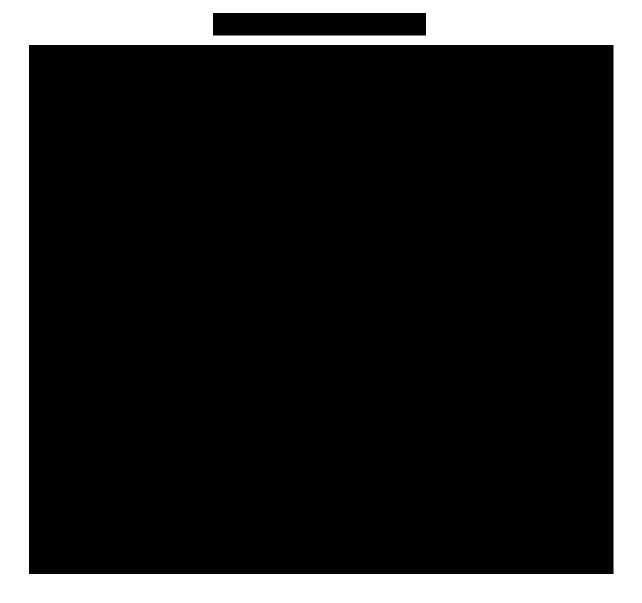
II. Offer Submission and Evaluation

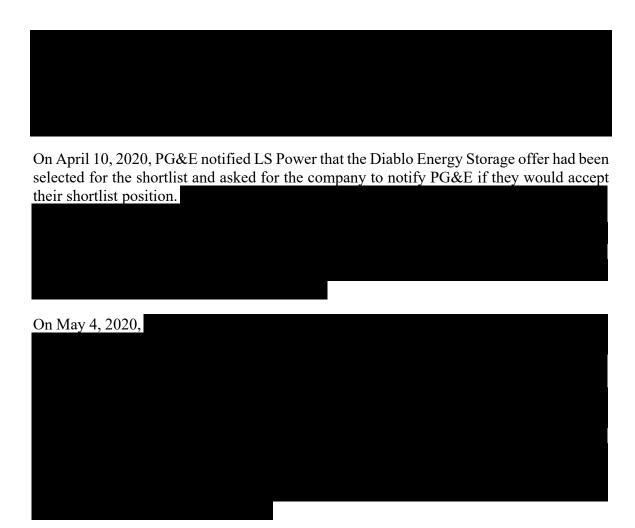
LS Power, developer of the project, submitted for the Diablo Energy Storage. LLC project into the 2020 System Reliability RFO – Phase 1.





A list of the initial shortlisted offers and variants are provided in Exhibit C-1.





III. Project Specific Contract Negotiations

For reviewing and evaluating the performance of the utility with regard to specific contract negotiations, the IE has addressed the issues raised in the CPUC Independent Evaluator Report Template. These include:

- 1. Identify the principles the IE used to evaluate negotiations;
- 2. Using the above principles, evaluate the project specific negotiations. Highlight any issues of interest/concern including unique terms and conditions;
- 3. Was similar information/options made available to other bidders when appropriate (i.e. if a bidder was told to reduce its price, was the same information made available to others?);

³

- 4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome;
- 5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

Principles Used to Evaluate Negotiations

The general principles followed by the IE in evaluating contract negotiations include assurance that the risk allocation provisions in the contract are reasonably balanced between the counterparties and that the utility customers are not placed at undue risk as a result of the contracting process. The IE generally "monitors" but does not actively participate in the contract negotiation process but will identify issues to the utility transactors if negotiations are moving off track or there are potential biases or inconsistencies in the process. The IE also attempts to ensure that similarly situated counterparties are treated the same or similarly and that all counterparties are provided with the same message. For example, PG&E has generally provided a clear message to counterparties in other solicitations (in addition to the 2020 System Reliability RFO – Phase 1 solicitation) that the process is a very competitive process with more projects shortlisted than PG&E intends to execute contracts for. As a result, counterparties should sharpen their pencils and price as competitively as possible.

However, given the lead times associated with completion of this RFO, PG&E essentially used a "standard" contract approach.⁴

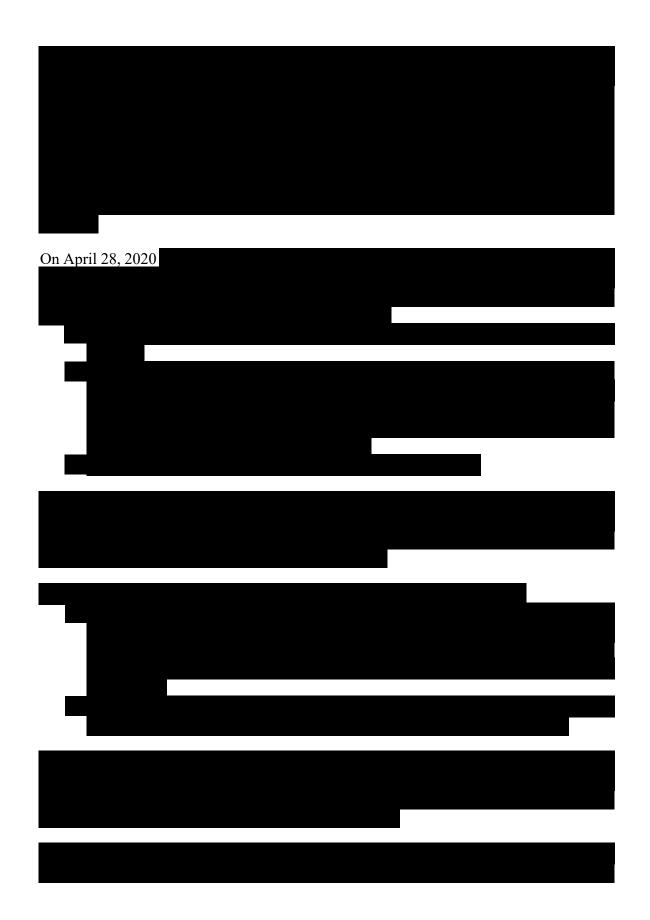
Revisions to the Pro Forma Long-Term Resource Adequacy Agreement

PG&E included a pro forma Long-Term Resource Adequacy Agreement in its 2020 System Reliability RFO – Phase 1 solicitation for Participants to review and redline.⁵ As a standalone battery energy storage project with a proposed fifteen-year term,



⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery term); Long Term Resource Adequacy Agreement (10 or 15 year term); Behind the Meter Resource Adequacy Agreement for new projects (10 or 15 year terms); and Demand Response Agreement (up to 10 year terms).

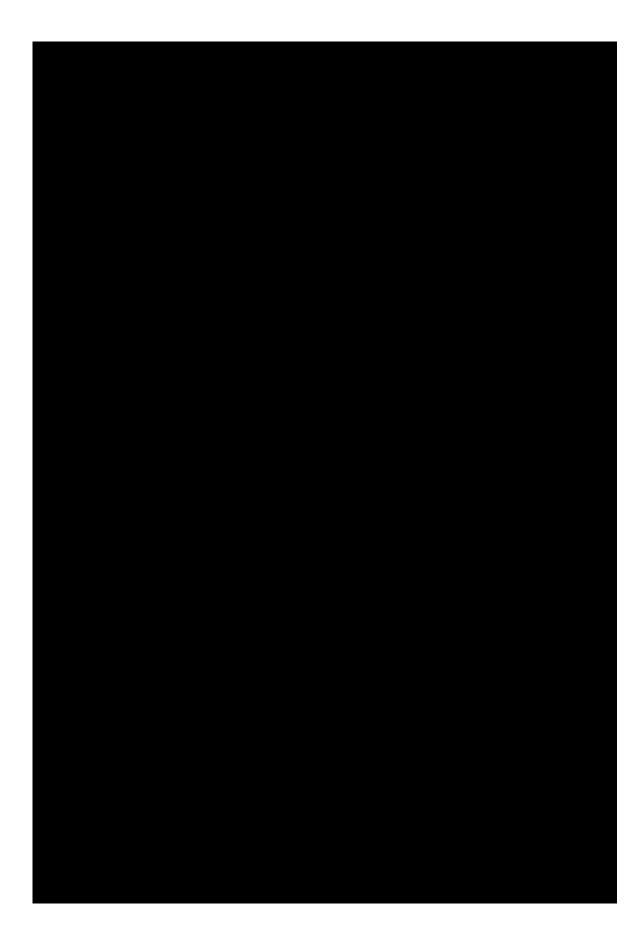
Given the timeframe for undertaking this solicitation,
In the RFO Protocol, PG&E
informed Participants that they must submit applicable Form Agreements with their offer
and must include all edits necessary to accurately describe the proposed project at the time
of offer submittal.
Shortly after shortlist notification,
Marrimoak Energy reviewed the radines to the pre-forms agreements prepared by the
Merrimack Energy reviewed the redlines to the pro forma agreements prepared by the shortlisted Participants.
shorthsted I articipants.



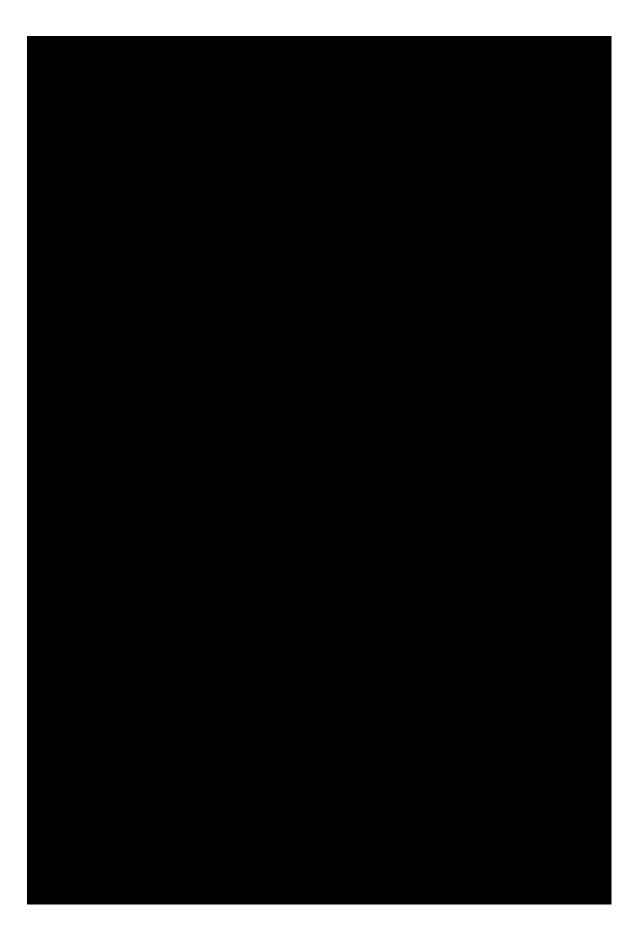
The key provisions of the final executed Diablo Energy Storage LLC LTRAA are summarized in Exhibit C-2.

Exhibit C-2: Final Contract Key Provisions – Diablo Energy Storage, LLC

Contract Provisions	Inclusion in Final Contract
Form of Agreement	Long Term Resource Adequacy Agreement













In addition to the contract provisions described above, the LTRAA also includes Appendix II and III which provide a description of the facility, unit, performance characteristics and operational limitations. The information from Appendix II and III is summarized in Exhibit C-3 below.

Exhibit C-3: Summary of LTRAA Appendix II and III for Diablo Energy Storage, LLC

Project Name	Diablo Energy Storage, LLC project – Tranche 16	
Technology Type	Lithium-Ion Batteries	
Physical Point of Interconnection	Pittsburg 230 kV Substation	
to the CAISO Grid		
Existing Zone	NP-15	
Nameplate Capacity (MW)	50 MW (of a larger 200 MW project)	
DMax	50 MW	
Dmin		
Discharge Duration	4.0 hours	
Storage Energy (MWh)	200 MWh	

III. Does the Contract Merit CPUC Approval

A. Introduction

This section of the Report addresses the issue "Does the Contract merit CPUC approval and is the contract reasonably priced and does it reflect a functioning market? To address these questions the IE Report Template requires that the following issues be addressed.

- 1. Provide a discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective;
 - a. Contract price, including cost adders (transmission, credit, etc.)
 - b. Portfolio fit
 - c. Project viability
 - i. Technology
 - ii. Bidder experience (financing, construction, operation)
 - iii. Credit and collateral
 - iv. Permitting, site control and other site-related matters
 - v. Fuel status
 - vi. Transmission upgrades
 - d. Any other relevant factors
- 2. Based on the complete bid process:
 - a. Does the IOU contract reflect a functioning market?
 - b. Is the IOU contract the best overall offer received by the IOU?
- 3. Is the contract a reasonable method of achieving the need identified in the RFO?
- 4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received or the products solicited in the RFO?
- 5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain

B. Need for Procurement

Through the 2020 System Reliability RFO – Phase 1 solicitation process, PG&E is seeking offers for the purchase of eligible system resource adequacy (RA) to come online by August 1, 2021 pursuant to CPUC Decision D.19-11-016. The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online 50% of the target or 358.45 MW by August 1, 2021. To meet the CPUC's Decision, PG&E will execute Agreements in two phases. Phase 1 is for projects that intend to meet the August 1, 2021 online date and Phase 2 is for projects that intend to come online after August 1, 2021 and before August 1, 2023.

PG&E indicated in its Protocol Document that it will issue a subsequent System Reliability Request for Offers – Phase 2 in Q3 2020. PG&E stated that it will only issue Phase 2 if it does not procure its full requirements in Phase 1. Subject to any limitations regarding resource eligibility, all resources are eligible for the solicitation including new and existing resources, Behind-the-meter resources from new projects and incremental Demand Response resources.

Through this 2020 System Reliability RFO – Phase 1 process, PG&E has procured 423 MW of eligible resource capacity. The execution of this agreement with Diablo Energy Storage, LLC is for a total of 150 MW (i.e. 50 MW each Agreement) or approximately 35% of the total procurement.

Chapter V of the IE's Report on the 2020 System Reliability RFO – Phase 1 process, provides evidence that the response to the RFO was reasonably robust, even in light of the short turnaround time for Participants to prepare their offers. As illustrated in this section of the IE report, PG&E received offer variations from projects and counterparties.

The detailed evaluation conducted by PG&E is described primarily in Chapters IV and V of the IE Report on the 2020 System Reliability RFO – Phase 1, and that description confirms that the Diablo Energy Storage, LLC Long-Term Resource Adequacy Agreement submitted by LS Power for the Diablo Energy Storage project was selected for execution based on its competitiveness, and on the applicable evaluation criteria, compared to other

similar lithium-ion battery LTRAA agreement options. The reasonableness of the Diablo Energy Storage, LLC LTRAA from the viewpoint of its cost competitiveness, as well as project viability and other evaluation criteria, is set forth in the next section of this Report.

C. Contract Pricing and Portfolio Fit



7

Exhibit C-4: Valuation Results for the Diablo Energy Storage Project

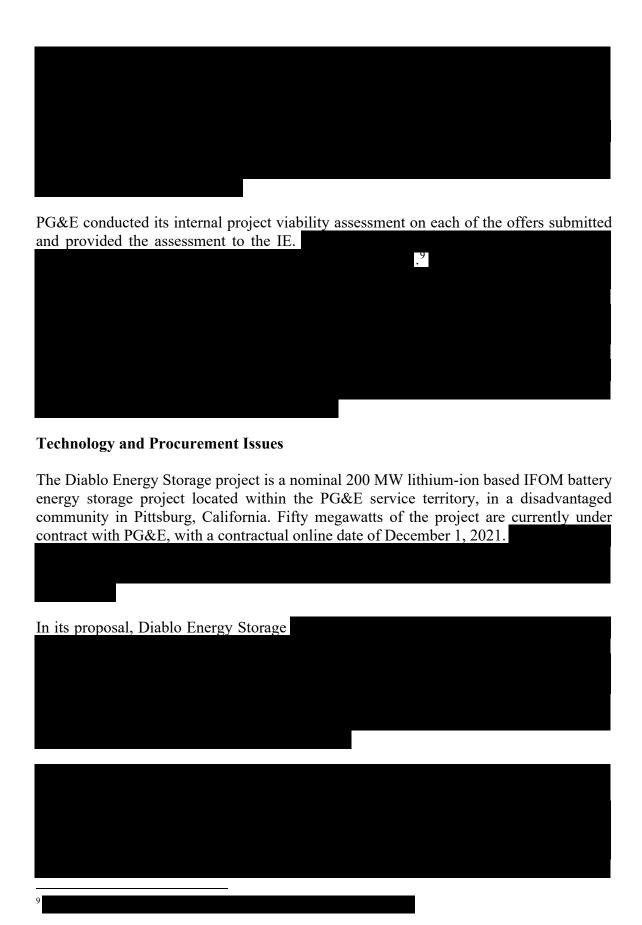
Valuation Components	NMV Components	NMV Components

D. Project Viability

Project Scrutiny

The 2020 System Reliability RFO – Phase 1 Offer Package requires Participants to complete and submit documents pertaining to aspects of project development for their offers. The Offer Form (Appendix A) includes information required from the Participant on project pricing, operational information, electrical interconnection information, developer experience, site control status, permitting status, and project finance status. In addition, Participants were required to submit Supplemental Project Information (Appendix B) which requested detailed information about the status of the project. PG&E relies on this information to conduct its own qualitative evaluation of the offers.

⁸ As noted in the RFO Protocol, PG&E may consider qualitative factors that could impact the value of an offer, including project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, supply chain responsibility status, and completeness of the offer.





Experience (Financing, construction, operation)

Diablo Energy Storage is a wholly owned subsidiary of Bolt Energy Holdings, LLC and an affiliate of LS Power. LS Power Group personnel will be responsible for all services required for the project, including engineering services, development support, financial support, and other services. LS Power has a successful history of developing and operating battery energy storage, power generation, and electric transmission lines and substations serving the CAISO market. LS Power has developed and owned a number of renewable and conventional power projects in California. With regard to storage, in addition to the Diablo Energy Storage project, LS Power has developed the Vista Energy Storage project (40 MW) located in Vista, California; the Gateway storage project in East San Diego County which was also offered into this RFO; and the LeConte energy storage project in Imperial County, California, located on the site of LS Power's Centinela Solar project.

LS Power has significant experience developing, financing, constructing and operating power transmission, storage and generating facilities. LS Power has raised approximately \$41 billion of equity and debt over the previous 20 years. In its proposal,

Site Control and Other Site Issues, Permitting,

In terms of site control, the project site is controlled by Diablo Energy Storage pursuant to

In terms of permitting,



Interconnection



Schedule

Diablo provided

Diablo Energy Storage's schedule appears to be reasonable and

Conclusion

Based on the foregoing, it appears to the IE that the Diablo Energy Storage project should have a reasonable probability of success for completing the project by the target dates established in the LTRAA. The Diablo Energy Storage project is a 200 MW battery energy storage project located in Pittsburg California. Fifty MW of the project is under contract with PG&E from the 2016 Energy Storage RFO.

The 150 MW project is from this solicitation will be constructed along with the initial 50 MW. LS Power, the developer of the Diablo Energy Storage project, is a very experienced energy project development company, with substantial development experience in California and in other markets in the US. LS Power has raised over \$40 billion in equity and debt to support project development and financing. LS Power has developed, financed, and constructed over 9,000 MW of power plant development.

Given the unique requirements of this solicitation, the IE recommends approval of the LTRAA with Diablo Energy Storage, LLC given the need to move forward with new resources in-service by August 1, 2021.

Pacific Gas and Electric Company 2020 System Reliability Request for Offers – Phase 1

Independent Evaluator Report Public Version

Attachment B

Long Term Resource Adequacy Agreement with Gateway Energy Storage, LLC

May, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



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I. Introduction

A. Overview

Pacific Gas and Electric Company ("PG&E) is seeking approval of a Long-Term Resource Adequacy Agreement ("LTRAA") with Gateway Energy Storage, LLC ¹ for a 50 MW Battery Energy Storage System located in San Diego County, California.
The project includes the installation of a 50 MW/200 MWh standalone lithium-ion battery system. The contract between PG&E and Gateway Energy Storage is for a 15-year term and has a Commercial Operation Date ("COD") 75 days prior to the Initial Delivery Date ("IDD") of October 1, 2021.
As described in the proposal of LS Power, the Gateway Energy Storage project is a nominal 250 MW lithium-ion based In-Front-of-the Meter battery energy storage project currently under construction, located within the community of East Otay Mesa, San Diego County, California.
Project capacity offered is incremental to baseline assumptions in the CPUC preferred System Plan adopted by the CPUC in Decision D.19-04-040.
1



The LTRAA with Gateway Energy Storage, LLC was executed by PG&E pursuant to the Company's 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1"). Through this RFO, PG&E is seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021 pursuant to California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"). The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online, 50% (358.45 MW) of the target by August 1, 2021.

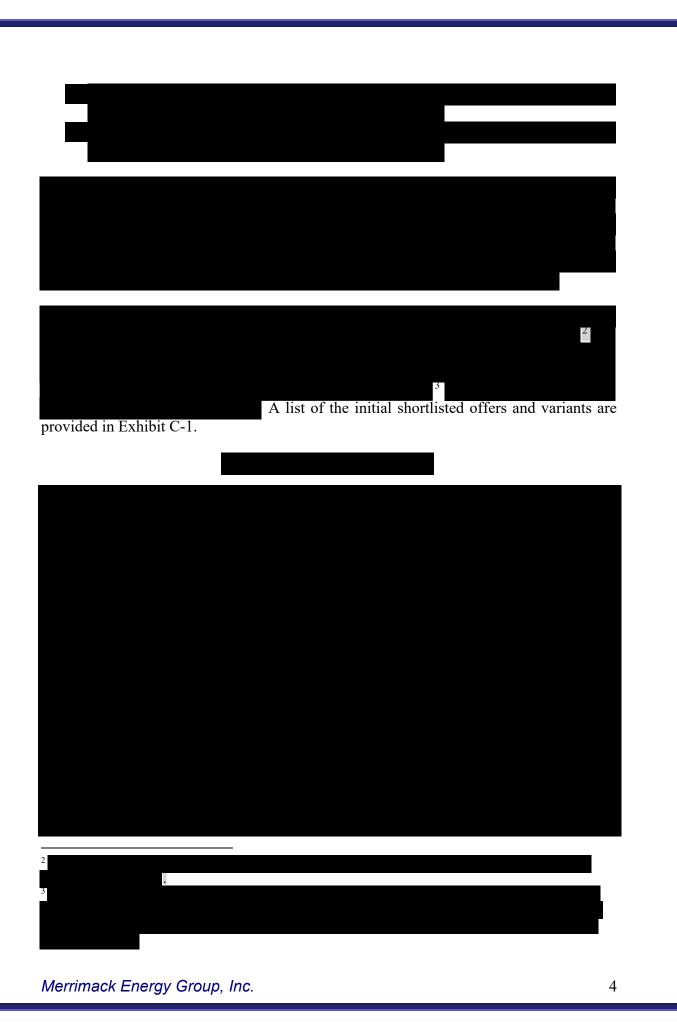
PG&E launched the 2020 System Reliability RFO – Phase 1 on February 28, 2020 and received offers on March 25, 2020. PG&E executed seven Agreements for eligible products as a result of the solicitation, representing a total of 423 MW, including 50 MW of energy storage capacity under the LTRAA with Gateway Energy Storage, LLC.

This Attachment B to the Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1 process focuses on the two sections of the CPUC IE Report Template associated with discussions of project-specific negotiations (Section E of the Report Template) and of the contract approval issue (Section H of the Report Template) – does the contract merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market? A separate Attachment is provided for each Agreement executed by PG&E with eligible resource providers vis this solicitation. Accordingly, the IE Report on PG&E's 2020 System Reliability RFO – Phase 1 will contain Attachment A through Attachment F, which address each contract executed through this solicitation.

II. Offer Submission and Evaluation

LS Power, developer of the project, submitted for the Gateway Energy Storage. LLC project into the 2020 System Reliability RFO – Phase 1.







On April 10, 2020, PG&E notified LS Power that the Gateway Energy Storage offer had been selected for the shortlist and asked for the company to notify PG&E if they would accept their shortlist position.

III. Project Specific Contract Negotiations

For reviewing and evaluating the performance of the utility with regard to specific contract negotiations, the IE has addressed the issues raised in the CPUC Independent Evaluator Report Template. These include:

- 1. Identify the principles the IE used to evaluate negotiations;
- 2. Using the above principles, evaluate the project specific negotiations. Highlight any issues of interest/concern including unique terms and conditions;
- 3. Was similar information/options made available to other bidders when appropriate (i.e. if a bidder was told to reduce its price, was the same information made available to others?);
- 4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome;

5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

Principles Used to Evaluate Negotiations

The general principles followed by the IE in evaluating contract negotiations include assurance that the risk allocation provisions in the contract are reasonably balanced between the counterparties and that the utility customers are not placed at undue risk as a result of the contracting process. The IE generally "monitors" but does not actively participate in the contract negotiation process but will identify issues to the utility transactors if negotiations are moving off track or there are potential biases or inconsistencies in the process. The IE also attempts to ensure that similarly situated counterparties are treated the same or similarly and that all counterparties are provided with the same message. For example, PG&E has generally provided a clear message to counterparties in other solicitations (in addition to the 2020 System Reliability RFO – Phase 1 solicitation) that the process is a very competitive process with more projects shortlisted than PG&E intends to execute contracts for. As a result, counterparties should sharpen their pencils and price as competitively as possible.

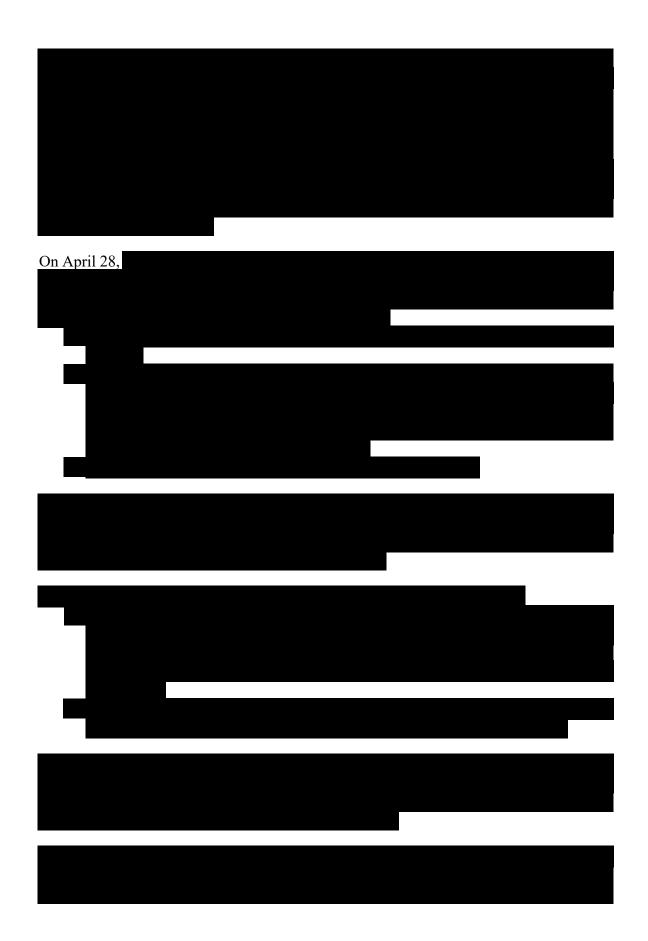
However, given the lead times associated with completion of this RFO, PG&E essentially used a "standard" contract approach.⁴

Revisions to the Pro Forma Long-Term Resource Adequacy Agreement

PG&E included a pro forma Long-Term Resource Adequacy Agreement in its 2020 System Reliability RFO – Phase 1 solicitation for Participants to review and redline.⁵ As a standalone battery energy storage project with a proposed fifteen-year term,

⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery term); Long Term Resource Adequacy Agreement (10 or 15 year term); Behind the Meter Resource Adequacy Agreement for new projects (10 or 15 year terms); and Demand Response Agreement (up to 10 year terms).

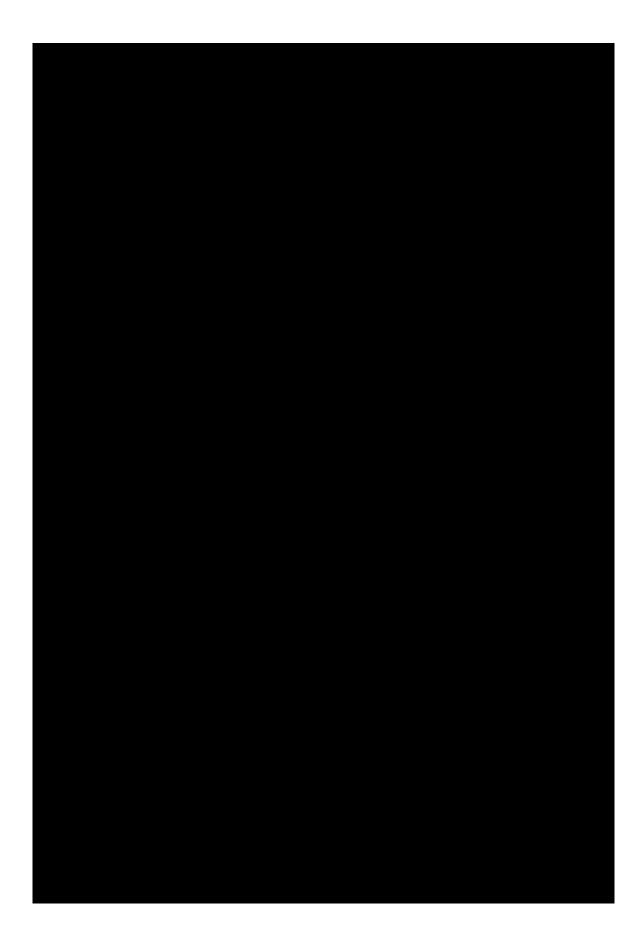
Given the timeframe for undertaking this solicitation,
In the RFO Protocol, PG&E
informed Participants that they must submit applicable Form Agreements with their offer
and must include all edits necessary to accurately describe the proposed project at the time
of offer submittal.
Shortly after shortlist notification,
Shortly after shortlist notification,
Merrimack Energy reviewed the redlines to the pro forma agreements prepared by the
shortlisted Participants.

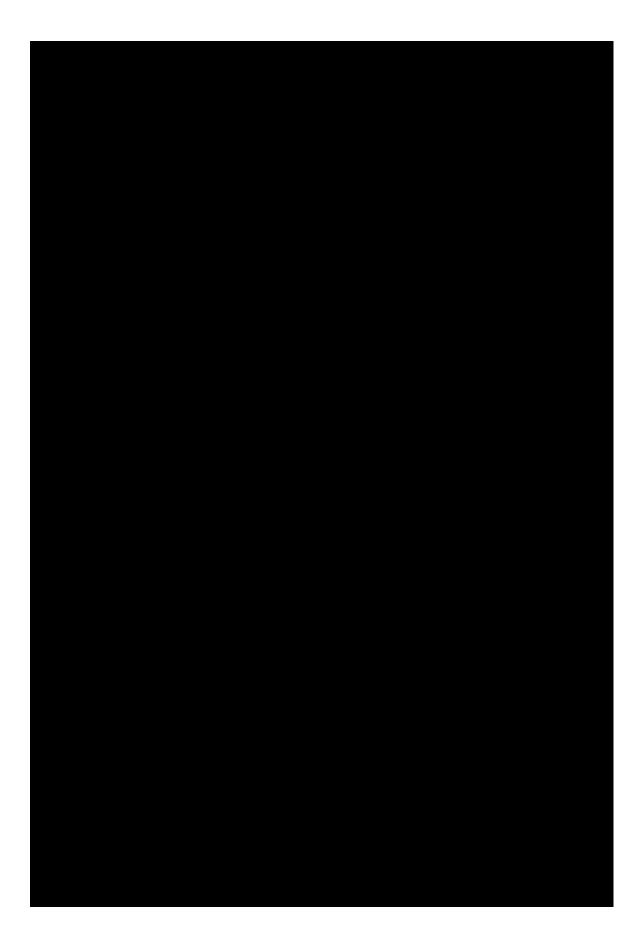


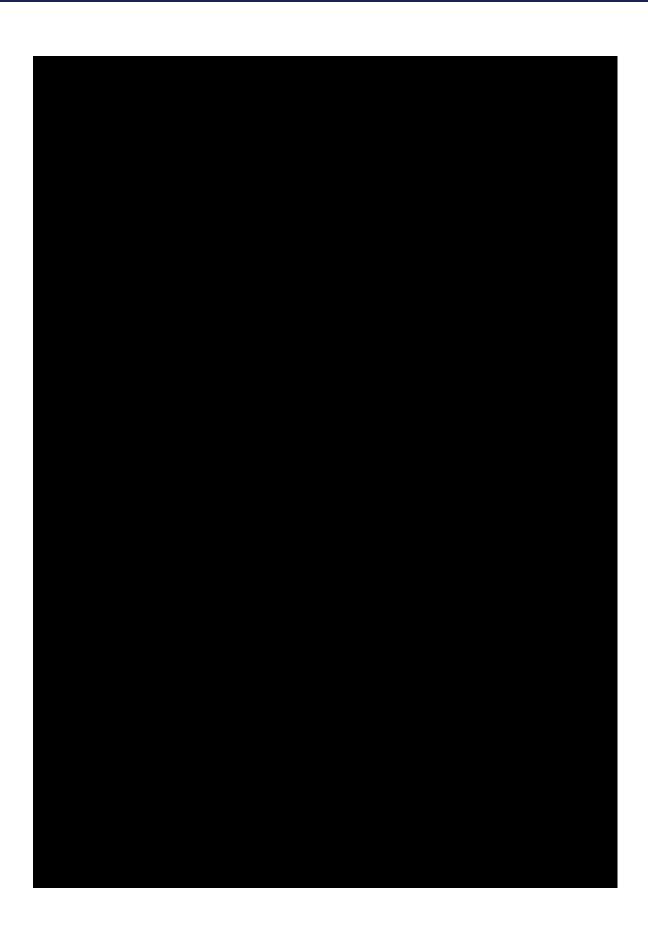
The key provisions of the final executed Gateway Energy Storage LLC LTRAA are summarized in Exhibit C-2.

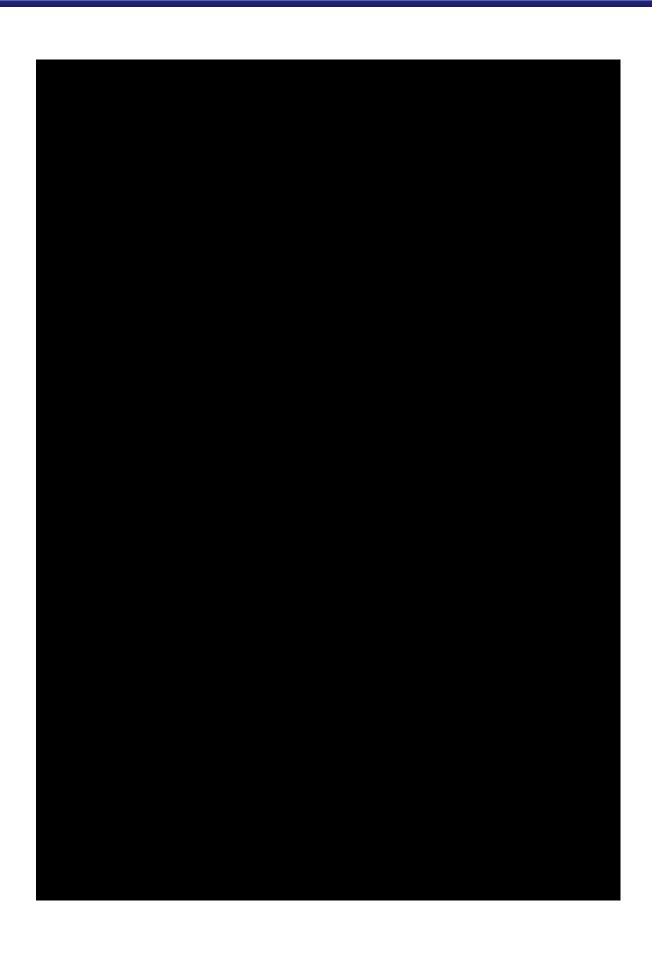
Exhibit C-2 Final Contract Key Provisions – Gateway Energy Storage, LLC

Contract Provisions	Inclusion in Final Contract
Form of Agreement	Long Term Resource Adequacy Agreement













In addition to the contract provisions described above, the LTRAA also includes Appendix II and III which provide a description of the facility, unit, performance characteristics and operational limitations. The information from Appendix II and III is summarized in Exhibit C-3 below.

Exhibit C-3: Summary of LTRAA Appendix II and III for Gateway Energy Storage, LLC

Proiect Name	Gateway Energy Storage, LLC project
Technology Type	Lithium-Ion Batteries
Physical Point of Interconnection	SDG&E 230 kV Otay Mesa Switchyard
to the CAISO Grid Existing Zone	SP-15
Nameplate Capacity (MW)	50 MW
DMax	50 MW
Discharge Duration	4.0 hours
Storage Energy (MWh)	200 MWh

III. Does the Contract Merit CPUC Approval

A. Introduction

This section of the Report addresses the issue "Does the Contract merit CPUC approval and is the contract reasonably priced and does it reflect a functioning market? To address these questions the IE Report Template requires that the following issues be addressed.

- 1. Provide a discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective;
 - a. Contract price, including cost adders (transmission, credit, etc.)
 - b. Portfolio fit
 - c. Project viability
 - i. Technology
 - ii. Bidder experience (financing, construction, operation)
 - iii. Credit and collateral
 - iv. Permitting, site control and other site-related matters
 - v. Fuel status
 - vi. Transmission upgrades
 - d. Any other relevant factors
- 2. Based on the complete bid process:
 - a. Does the IOU contract reflect a functioning market?
 - b. Is the IOU contract the best overall offer received by the IOU?
- 3. Is the contract a reasonable method of achieving the need identified in the RFO?
- 4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received or the products solicited in the RFO?
- 5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain

B. Need for Procurement

Through the 2020 System Reliability RFO – Phase 1 solicitation process, PG&E is seeking offers for the purchase of eligible system resource adequacy (RA) to come online by August 1, 2021 pursuant to CPUC Decision D.19-11-016. The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online 50% of the target or 358.45 MW by August 1, 2021. To meet the CPUC's Decision, PG&E will execute Agreements in two phases. Phase 1 is for projects that intend to meet the August 1, 2021 online date and Phase 2 is for projects that intend to come online after August 1, 2021 and before August 1, 2023.

PG&E indicated in its Protocol Document that it will issue a subsequent System Reliability Request for Offers – Phase 2 in Q3 2020. PG&E stated that it will only issue Phase 2 if it

does not procure its full requirements in Phase 1. Subject to any limitations regarding resource eligibility, all resources are eligible for the solicitation including new and existing resources, Behind-the-meter resources from new projects and incremental Demand Response resources.

Through this 2020 System Reliability RFO – Phase 1 process, PG&E procured 423 MW of eligible resource capacity. The execution of this agreement with Gateway Energy Storage, LLC for 50 MW will provide approximately 12% of this total.

Chapter V of the IE's Report on the 2020 System Reliability RFO – Phase 1 process, provides evidence that the response to the RFO was reasonably robust, even in light of the short turnaround time for Participants to prepare their offers. As illustrated in this section of the IE report, PG&E received offer variations from projects and counterparties.

detailed evaluation conducted by PG&E is described primarily in Chapters IV and V of the IE Report on the 2020 System Reliability RFO – Phase 1, and that description confirms that the Gateway Energy Storage, LLC Long-Term Resource Adequacy Agreement submitted by LS Power for the Gateway Energy Storage project was selected for execution based on its competitiveness, and on the applicable evaluation criteria, compared to other similar lithium-ion battery LTRAA agreement options. The reasonableness of the Gateway Energy Storage, LLC LTRAA from the viewpoint of its cost competitiveness, as well as project viability and other evaluation criteria, is set forth in the next section of this Report.

C. Contract Pricing and Portfolio Fit

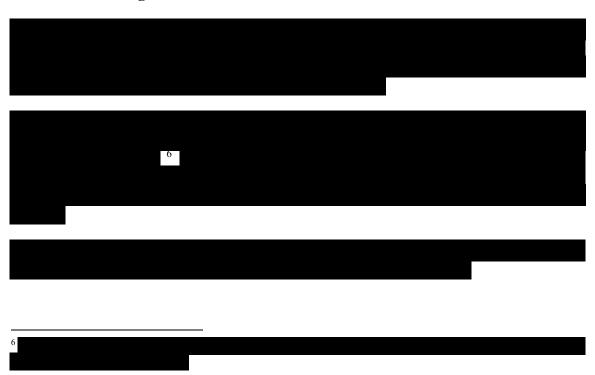


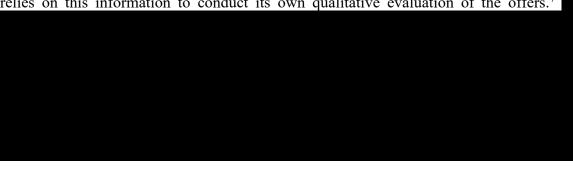
Exhibit C-4: Valuation Results for the Short-Listed 50 MW Gateway Energy Storage Project

Valuation Components	NMV Components	NMV Components

D. Project Viability

Project Scrutiny

The 2020 System Reliability RFO – Phase 1 Offer Package requires Participants to complete and submit documents pertaining to aspects of project development for their offers. The Offer Form (Appendix A) includes information required from the Participant on project pricing, operational information, electrical interconnection information, developer experience, site control status, permitting status, and project finance status. In addition, Participants were required to submit Supplemental Project Information (Appendix B) which requested detailed information about the status of the project. PG&E relies on this information to conduct its own qualitative evaluation of the offers.⁷



⁷ As noted in the RFO Protocol, PG&E may consider qualitative factors that could impact the value of an offer, including project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, supply chain responsibility status, and completeness of the offer.

PG&E conducted its internal project viability assessment on each of the offers submitted and provided the assessment to the IE. **Technology and Procurement Issues** The Gateway Energy Storage project is a nominal 250 MW lithium-ion based IFOM battery energy storage project currently under construction, located within the community of East Otay Mesa, San Diego County, California. Phase 1 is nearing completion in Summer 2020, and is rated at 250 MW with 1-hour duration. The project capacity offered is incremental to baseline assumptions in the CPUC Preferred System Plan for 2022 adopted by the CPUC in Decision 19-04-040.

Experience (Financing, construction, operation)

Gateway Energy Storage is a wholly owned subsidiary of Bolt Energy Holdings, LLC and an affiliate of LS Power. LS Power Group personnel will be responsible for all services required for the project, including engineering services, development support, financial support, and other services. LS Power has a successful history of developing and operating battery energy storage, power generation, and electric transmission lines and substations serving the CAISO market. LS Power has developed and owned a number of renewable and conventional power projects in California. With regard to storage, in addition to the Gateway Energy Storage project, LS Power has developed the Vista Energy Storage project (40 MW) located in Vista, California; the Diablo Energy Storage project in Pittsburg, CA which was also offered into this RFO; and the LeConte energy storage project in Imperial County, California, located on the site of LS Power's Centinela Solar project.

LS Power has significant experience developing, financing, constructing and operating power transmission, storage and generating facilities. LS Power has raised approximately \$41 billion of equity and debt over the previous 20 years. In its proposal,

Site Control and Other Site Issues, Permitting,

In terms of site control, the project site is controlled by Gateway Energy Storage pursuant to

In terms of permitting,

Interconnection

Schedule

Gateway Energy Storage provided

Gateway Energy Storage's schedule appears to be reasonable and

Conclusion

Based on the foregoing, it appears to the IE that the Gateway Energy Storage project should have a reasonable probability of success for reaching COD by August 1, 2021, as required by the LTRAA. The Gateway Energy Storage project is a 250 MW battery energy storage project located in San Diego County, California.

LS Power, the developer of the Gateway Energy Storage project, is a very experienced energy project development company, with substantial development experience in California and in other markets in the US. LS Power has raised over \$40 billion in equity and debt to support project development and financing. LS Power has developed, financed, and constructed over 9,000 MW of power plant development. Given the unique requirements of this solicitation, the IE recommends approval of the LTRAA with Gateway Energy Storage, LLC given the need to move forward with new resources in-service by August 1, 2021.

As noted, the project expects to achieve an IDD date of October 1, 2021 and will provide incremental capacity relative to the baseline assumptions in the CPUC Preferred System Plan for 2022.

Pacific Gas and Electric Company 2020 System Reliability Request for Offers – Phase 1

Independent Evaluator Report Public Version

Attachment C

Long Term Resource Adequacy Agreement with Dynegy Marketing and Trade, LLC

May, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



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I. Introduction

A. Overview

Pacific Gas and Electric Company ("PG&E) is seeking approval of a Long-Term Resource Adequacy Agreement ("LTRAA") from the MOSS100 Moss Landing 100 MW Battery Energy Storage System located in Moss Landing, California.

The project includes the installation of 100 MW/400 MWh standalone lithium-ion batteries, power conversion systems, and a high voltage substation. The project has an Initial Delivery Date ("IDD") of October 1, 2021 and a Commercial Operation Date ("COD") 75 days prior to IDD.

The project will be built at a site located in Moss Landing, California. PG&E and Vistra have an existing agreement for Vistra to build a 300 MW/1,200 MWh battery energy storage facility at the same site. For that agreement, Vistra plans to interconnect using the recently retired Unit 6 interconnect location at the 500 kV substation adjacent to the facility.



The term of the LTRAA between PG&E and Dynegy Marketing and Trade, LLC is for 10 years commencing on the Initial Delivery Date ("IDD"), which is expected to be October 1, 2021.

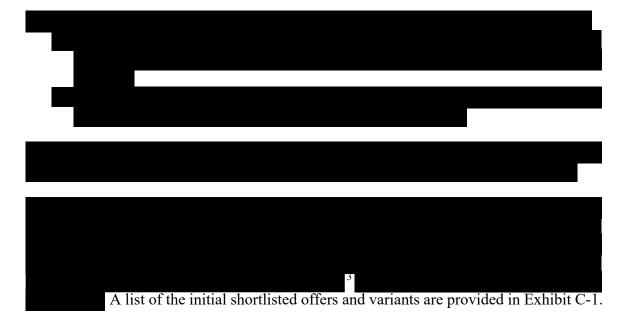
The LTRAA with Dynegy Marketing and Trade was executed by PG&E pursuant to the Company's 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1"). Through this RFO, PG&E is seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021 pursuant to California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"). The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online, 50% (358.45 MW) of the target by August 1, 2021.

PG&E launched the 2020 System Reliability RFO – Phase 1 on February 28, 2020 and received offers on March 25, 2020. PG&E executed seven Agreements for eligible products as a result of the solicitation, representing a total of 423 MW, including 100 MW of energy storage capacity under the LTRAA with Dynegy Marketing and Trade, LLC.

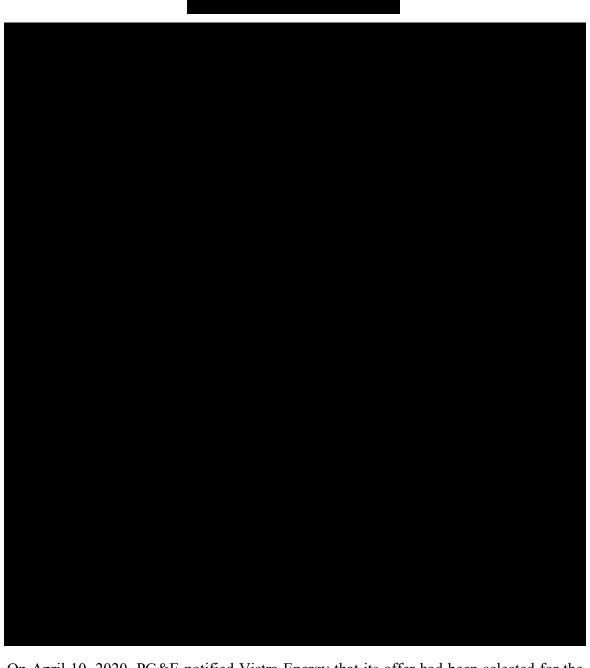
This Attachment C to the Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1 process ("IE Report on 2020 System Reliability RFO – Phase 1") focuses on the two sections of the CPUC IE Report Template associated with discussions of project-specific negotiations (Section E of the Report Template) and of the contract approval issue (Section H of the Report Template) – does the contract merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market? A separate Attachment is provided for each Agreement executed by PG&E with eligible resource providers vis this solicitation. Accordingly, the IE Report on PG&E's 2020 System Reliability RFO – Phase 1 will contain Attachment A through Attachment F, which address each contract executed through this solicitation.

II. Offer Submission and Evaluation

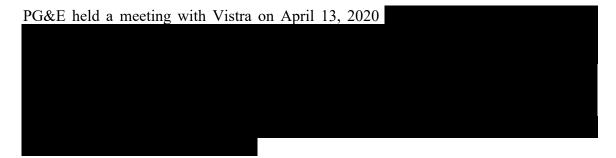
Vistra Energy submitted for the Moss Landing Storage project into the 2020 System Reliability RFO – Phase 1.



³ Exhibit C-1 contains a list of the variants for specific projects which were also included on the shortlist.



On April 10, 2020, PG&E notified Vistra Energy that its offer had been selected for the shortlist and asked for the company to notify PG&E if they would accept their shortlist position.



III. Project Specific Contract Negotiations

For reviewing and evaluating the performance of the utility with regard to specific contract negotiations, the IE has addressed the issues raised in the CPUC Independent Evaluator Report Template. These include:

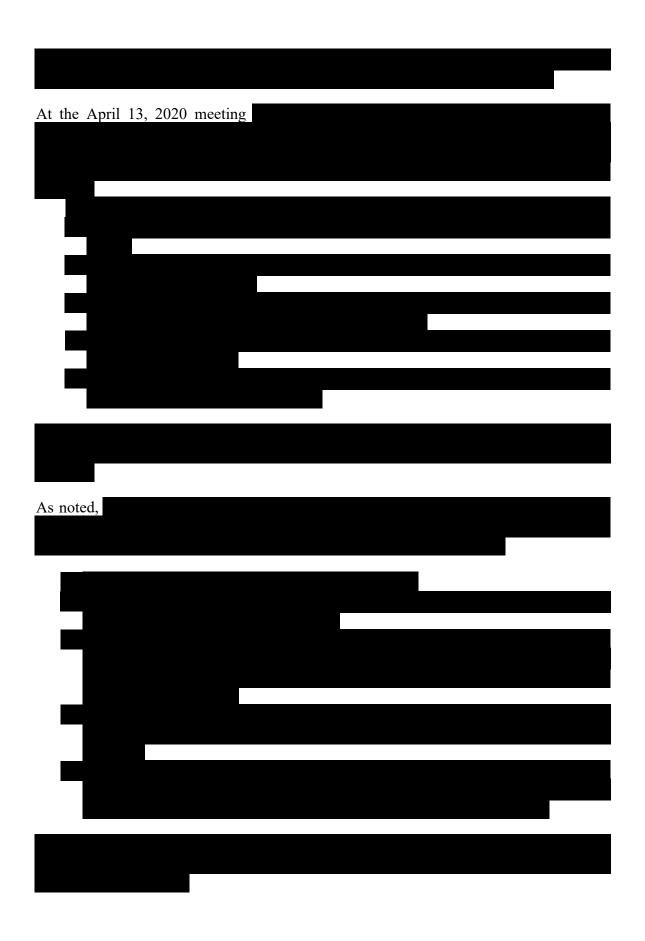
- 1. Identify the principles the IE used to evaluate negotiations;
- 2. Using the above principles, evaluate the project specific negotiations. Highlight any issues of interest/concern including unique terms and conditions;
- 3. Was similar information/options made available to other bidders when appropriate (i.e. if a bidder was told to reduce its price, was the same information made available to others?);
- 4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome;
- 5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

Principles Used to Evaluate Negotiations

The general principles followed by the IE in evaluating contract negotiations include assurance that the risk allocation provisions in the contract are reasonably balanced between the counterparties and that the utility customers are not placed at undue risk as a result of the contracting process. The IE generally "monitors" but does not actively participate in the contract negotiation process but will identify issues to the utility transactors if negotiations are moving off track or there are potential biases or inconsistencies in the process. The IE also attempts to ensure that similarly situated counterparties are treated the same or similarly and that all counterparties are provided with the same message. For example, PG&E has generally provided a clear message to counterparties in other solicitations (in addition to the 2020 System Reliability RFO – Phase 1 solicitation) that the process is a very competitive process with more projects shortlisted than PG&E intends to execute contracts for. As a result, counterparties should sharpen their pencils and price as competitively as possible.

However, given the lead times associated with completion of this RFO, PG&E essentially used a "standard" contract approach. ⁴
Revisions to the Pro Forma Long-Term Resource Adequacy Agreement
PG&E included a pro forma Long-Term Resource Adequacy Agreement in its 2020 System Reliability RFO – Phase 1 solicitation for Participants to review and redline. As a standalone battery energy storage project with a proposed ten-year term, Given the timeframe for undertaking this solicitation, In the RFO Protocol, PG&E informed Participants that they must submit applicable Form Agreements with their offer and must include all edits necessary to accurately describe the proposed project at the time of offer submittal.
earls necessary to accurately describe the proposed project at the time of offer submittal.
Shortly after shortlist notification,
Merrimack Energy reviewed the redlines to the pro forma agreements prepared by the shortlisted Participants.
⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery

⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery term); Long Term Resource Adequacy Agreement (10 or 15 year term); Behind the Meter Resource Adequacy Agreement for new projects (10 or 15 year terms); and Demand Response Agreement (up to 10 year terms).



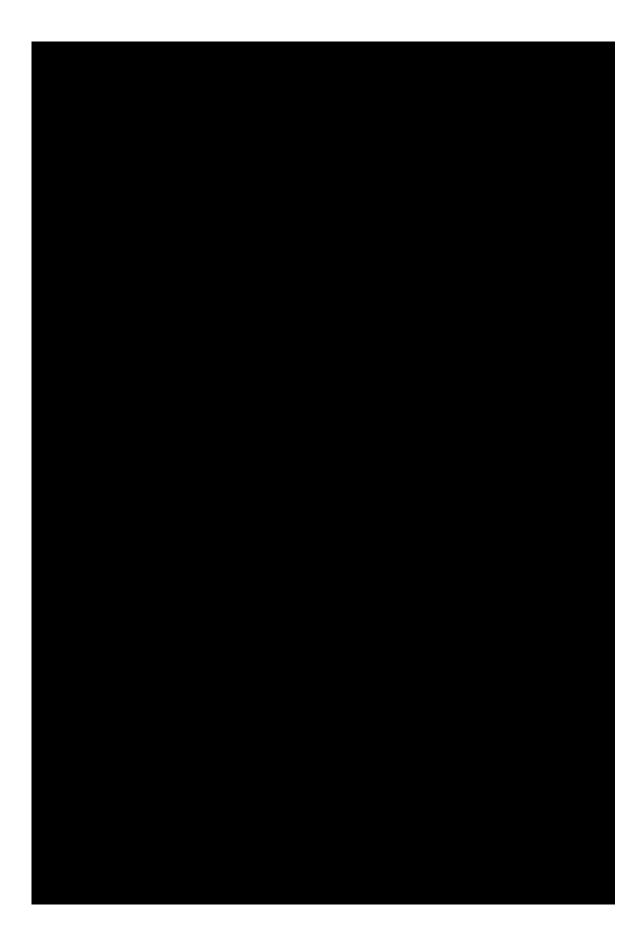


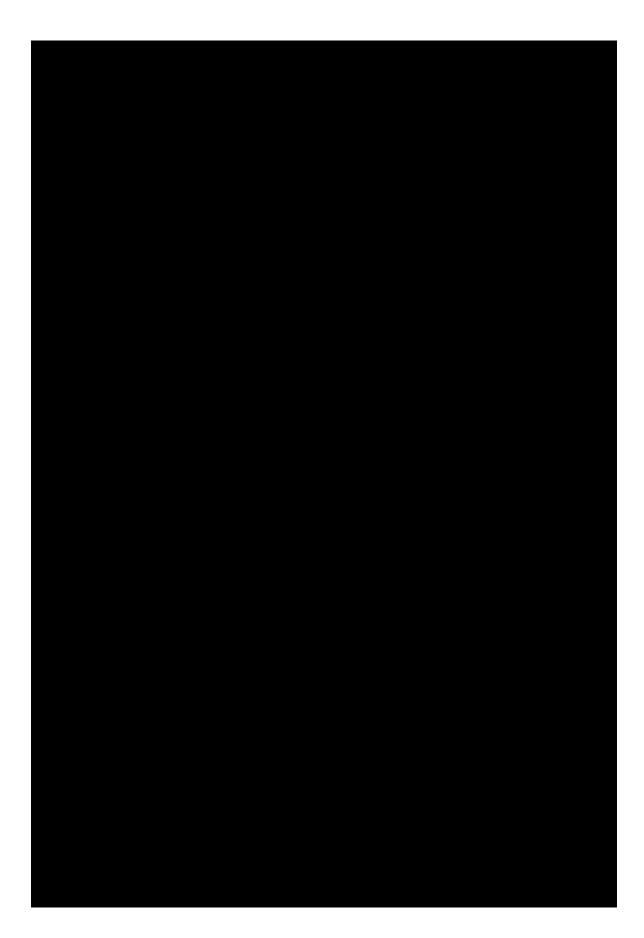
The key provisions of the final executed Dynegy Marketing and Trade, LLC LTRAA are summarized in Exhibit C-2.

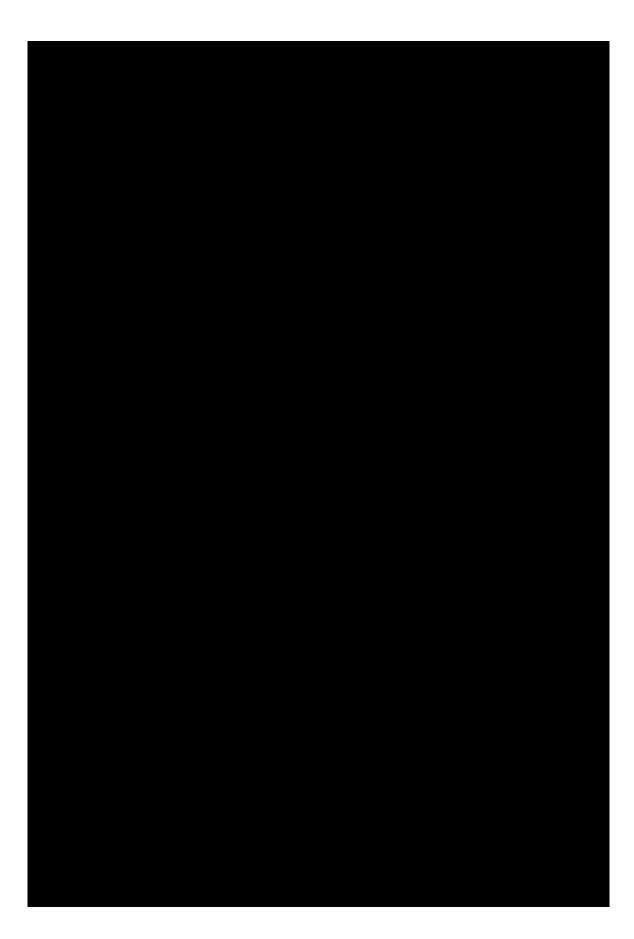
Exhibit C-2: Final Contract Key Provisions

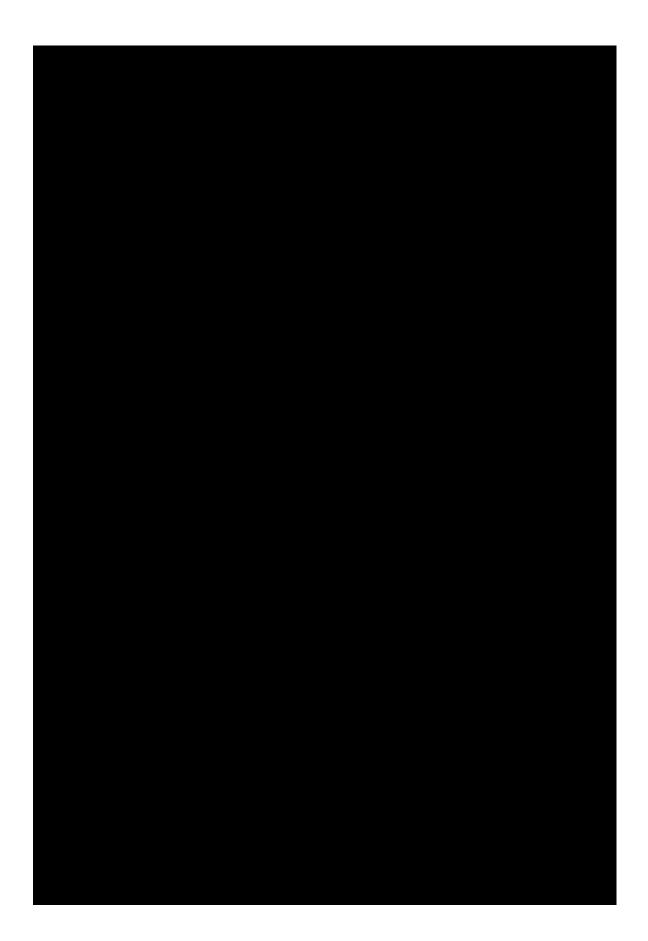
Contract Provisions	Inclusion in Final Contract
Form of Agreement	Long Term Resource Adequacy Agreement













In addition to the contract provisions described above, the LTRAA also includes Appendix II and III which provide a description of the facility, unit, performance characteristics and operational limitations. The information from Appendix II and III is summarized in Exhibit C-3 below.

Exhibit C-3: Summary of LTRAA Appendix II and III for Dynegy Marketing and Trade, LLC

Project Name	Moss Landing 100 Storage project
Technology Type	Lithium-Ion Batteries
Physical Point of Interconnection	Moss Landing 500 kV Substation
to the CAISO Grid	
Existing Zone	NP-15

Maximum Continuous Discharge	100 MW
Power (Dmax)	
Discharge Duration	4.0 hours
Storage Energy (MWh)	400 MWh

IV. Does the Contract Merit CPUC Approval

A. Introduction

This section of the Report addresses the issue "Does the Contract merit CPUC approval and is the contract reasonably priced and does it reflect a functioning market? To address these questions the IE Report Template requires that the following issues be addressed.

- 1. Provide a discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective;
 - a. Contract price, including cost adders (transmission, credit, etc.)
 - b. Portfolio fit
 - c. Project viability
 - i. Technology
 - ii. Bidder experience (financing, construction, operation)
 - iii. Credit and collateral
 - iv. Permitting, site control and other site-related matters
 - v. Fuel status
 - vi. Transmission upgrades
 - d. Any other relevant factors
- 2. Based on the complete bid process:
 - a. Does the IOU contract reflect a functioning market?
 - b. Is the IOU contract the best overall offer received by the IOU?
- 3. Is the contract a reasonable method of achieving the need identified in the RFO?

- 4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received or the products solicited in the RFO?
- 5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain

B. Need for Procurement

Through the 2020 System Reliability RFO – Phase 1 solicitation process, PG&E is seeking offers for the purchase of eligible system resource adequacy (RA) to come online by August 1, 2021 pursuant to CPUC Decision D.19-11-016. The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online 50% of the target or 358.45 MW by August 1, 2021. To meet the CPUC's Decision, PG&E will execute Agreements in two phases. Phase 1 is for projects that intend to meet the August 1, 2021 online date and Phase 2 is for projects that intend to come online after August 1, 2021 and before August 1, 2023.

PG&E indicated in its Protocol Document that it will issue a subsequent System Reliability Request for Offers – Phase 2 in Q3 2020. PG&E stated that it will only issue Phase 2 if it does not procure its full requirements in Phase 1. Subject to any limitations regarding resource eligibility, all resources are eligible for the solicitation including new and existing resources, Behind-the-meter resources from new projects and incremental Demand Response resources.

Through this 2020 System Reliability RFO – Phase 1 process, PG&E has procured 423 MW of eligible resource capacity. The execution of this agreement with Dynegy Marketing and Trade, LLC for 100 MW will provide approximately 24% of this total.

Chapter V of the IE's Report on the 2020 System Reliability RFO – Phase 1 process, provides evidence that the response to the RFO was reasonably robust, even in light of the short turnaround time for Participants to prepare their offers. As illustrated in this section of the IE report, PG&E received offer variations from projects and counterparties.

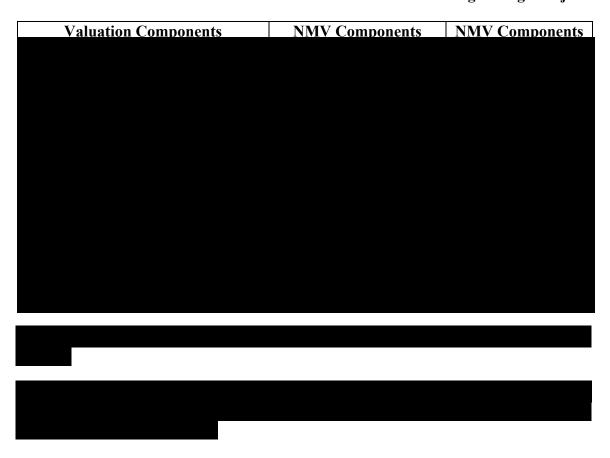
The

detailed evaluation conducted by PG&E is described primarily in Chapters IV and V of the IE Report on the 2020 System Reliability RFO – Phase 1, and that description confirms that the Dynegy Marketing and Trade, LLC Long-Term Resource Adequacy Agreement submitted by Vistra for the Moss Landing Storage project was selected for execution based on its competitiveness, and on the applicable evaluation criteria, compared to other similar lithium-ion battery LTRAA agreement options. The reasonableness of the Dynegy Marketing and Trade, LLC LTRAA from a viewpoint of its cost competitiveness, as well as project viability and other evaluation criteria, is set forth in the next section of this Report.





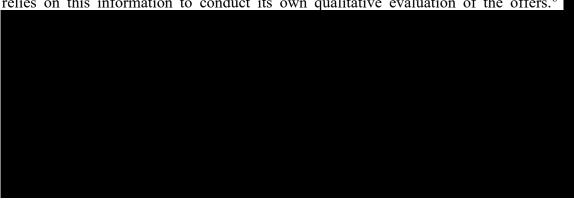
Exhibit C-4: Valuation Results for the Short-Listed Moss Landing Storage Project



D. Project Viability

Project Scrutiny

The 2020 System Reliability RFO – Phase 1 Offer Package requires Participants to complete and submit documents pertaining to aspects of project development for their offers. The Offer Form (Appendix A) includes information required from the Participant on project pricing, operational information, electrical interconnection information, developer experience, site control status, permitting status, and project finance status. In addition, Participants were required to submit Supplemental Project Information (Appendix B) which requested detailed information about the status of the project. PG&E relies on this information to conduct its own qualitative evaluation of the offers.



PG&E conducted its internal project viability assessment on each of the offers submitted and provided the assessment to the IE.

and provided the assessment to the IE.

Technology and Procurement Issues

The MOSS100 Storage project will include the installation of a 100 MW, 400 MWh standalone lithium-ion battery project with power conversion systems and a high voltage substation to be located in Moss Landing California.

Merrimack Energy Group, Inc.

⁶ As noted in the RFO Protocol, PG&E may consider qualitative factors that could impact the value of an offer, including project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, supply chain responsibility status, and completeness of the offer.

Experience (Financing, construction, operation)

Vistra is the largest competitive power generator in the US with a capacity of approximately 39,000 MW powered by a diverse portfolio of natural gas, nuclear, coal, solar and battery energy storage facilities. Vistra is currently developing the largest battery storage system of its kind in the world – a 300 MW/1,200 MWh system at its Moss Landing Plant under contract with PG&E. Vistra has constructed the Upton 2 battery facility (10 MW/42 MWh) in Texas that has been operational since the end of 2018 and utilizes similar technology as the proposed project. Vistra does not anticipate any issues with executing the proposed projects.

In terms of financing, Vistra stated in its offer that Vistra will be providing balance sheet financing for the Moss Landing Storage project. No external financial conditions or debt is required. Vistra has a corporate credit rating of Ba1/BB with a positive/stable outlook. Also, Vistra's senior debt was recently rated by S&P as BBB- (investment grade).

Site Control and Other Site Issues, Permitting,

Vistra has secured 100% site control through fee ownership and has all land necomplete the project and interconnection.	cessary to
In terms of permitting, the Respondent states that since all batteries will be	
Interconnection	



Schedule

Many, if not all, of the essential facts regarding the storage project, from the technology to the financing strength to the suitability of the site, determine whether the development team has a realistic chance of meeting the target COD and Expected Initial Delivery Date ("EIDD") for the project.

Vistra's schedule appears to be reasonable and would lead to a COD date 75 days prior to the October 1, 2021 IDD date.

Conclusion

Based on the foregoing, it appears to the IE that the MOSS100 Moss Landing Storage project should have a reasonable probability of success for completing the project 75 days prior to the October 1, 2021 IDD date, as required by the LTRAA.

Vistra is a substantial company from a financial perspective and intends to finance the project off its balance sheet. Given the unique requirements of this solicitation, the IE recommends approval of the LTRAA with Dynegy Marketing and Trade, LLC given the need to move forward with new resources in-service by August 1, 2021.

Pacific Gas and Electric Company 2020 System Reliability Request for Offers – Phase 1

Independent Evaluator Report Public Version

Attachment D

Long Term Resource Adequacy Agreement with Blythe Energy Storage 110, LLC

May, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



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I. Introduction

A. Overview

Pacific Gas and Electric Company ("PG&E) is seeking approval of a Long-Term Resource Adequacy Agreement ("LTRAA") from the Blythe 101 MW Battery Energy Storage System located in Blythe, California.

The project includes the installation of 63 MW/252 MWh² lithium-ion batteries and power conversion systems. The project has an Expected Initial Delivery Date ("IDD") of October 1, 2021 and a Commercial Operation Date ("COD") date 75 days prior to IDD.



The term of the LTRAA between PG&E and Blythe Energy Storage 110, LLC is for 15 years commencing on the Initial Delivery Date ("IDD"), which is expected to be October 1, 2021.

The LTRAA with Blythe Energy Storage 110 was executed by PG&E pursuant to the Company's 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1"). Through this RFO, PG&E is seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021 pursuant to California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"). The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online, 50% (358.45 MW) of the target by August 1, 2021.

PG&E launched the 2020 System Reliability RFO – Phase 1 on February 28, 2020 and received offers on March 25, 2020. PG&E executed seven Agreements for eligible products as a result of the solicitation, representing a total of 423 MW, including 63 MW of energy storage capacity under the LTRAA with Blythe Energy Storage 110, LLC.

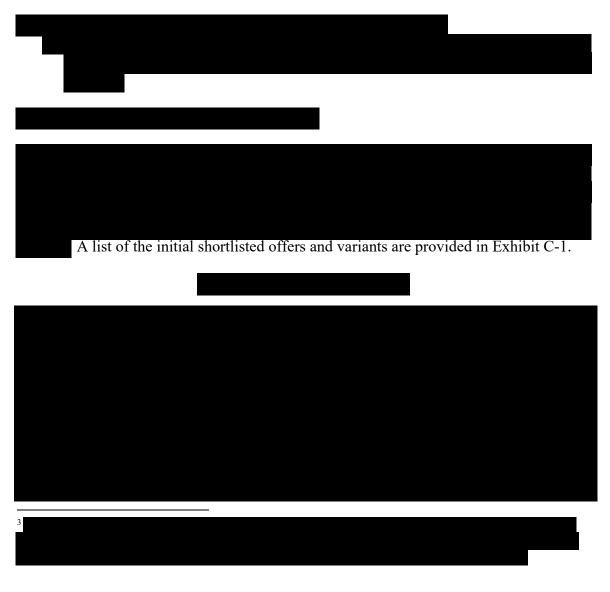
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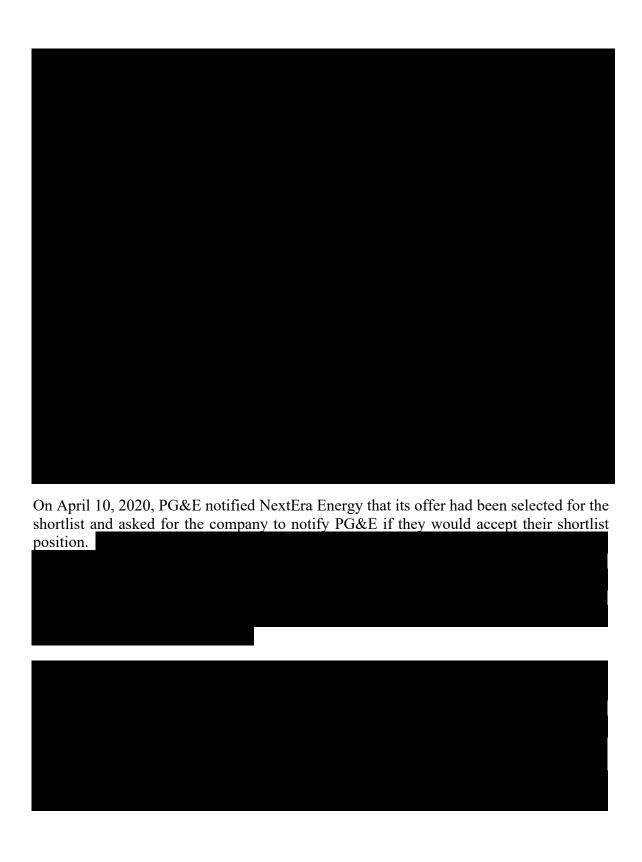
¹ The proposal was submitted by NextEra Energy Corp. ("NextEra") as developer and owner of Participant Entity or Project.

This Attachment D to the Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1 process ("IE Report on 2020 System Reliability RFO – Phase 1") focuses on the two sections of the CPUC IE Report Template associated with discussions of project-specific negotiations (Section E of the Report Template) and of the contract approval issue (Section H of the Report Template) – does the contract merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market? A separate Attachment is provided for each Agreement executed by PG&E with eligible resource providers vis this solicitation. Accordingly, the IE Report on PG&E's 2020 System Reliability RFO – Phase 1 will contain Attachment A through Attachment E, which address each contract executed through this solicitation.

II. Offer Submission and Evaluation

NextEra Energy initially submitted for the Blythe 110 Storage project into the 2020 System Reliability RFO – Phase 1.





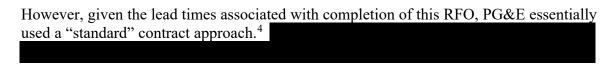
III. Project Specific Contract Negotiations

For reviewing and evaluating the performance of the utility with regard to specific contract negotiations, the IE has addressed the issues raised in the CPUC Independent Evaluator Report Template. These include:

- 1. Identify the principles the IE used to evaluate negotiations;
- 2. Using the above principles, evaluate the project specific negotiations. Highlight any issues of interest/concern including unique terms and conditions;
- 3. Was similar information/options made available to other bidders when appropriate (i.e. if a bidder was told to reduce its price, was the same information made available to others?);
- 4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome:
- 5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

Principles Used to Evaluate Negotiations

The general principles followed by the IE in evaluating contract negotiations include assurance that the risk allocation provisions in the contract are reasonably balanced between the counterparties and that the utility customers are not placed at undue risk as a result of the contracting process. The IE generally "monitors" but does not actively participate in the contract negotiation process but will identify issues to the utility transactors if negotiations are moving off track or there are potential biases or inconsistencies in the process. The IE also attempts to ensure that similarly situated counterparties are treated the same or similarly and that all counterparties are provided with the same message. For example, PG&E has generally provided a clear message to counterparties in other solicitations (in addition to the 2020 System Reliability RFO – Phase 1 solicitation) that the process is a very competitive process with more projects shortlisted than PG&E intends to execute contracts for. As a result, counterparties should sharpen their pencils and price as competitively as possible.





Revisions to the Pro Forma Long-Term Resource Adequacy Agreement

PG&E included a pro forma Long-Term Resource Adequacy Agreement in its 2020 System Reliability RFO – Phase 1 solicitation for Participants to review and redline. As a standalone battery energy storage project with a proposed ten-year term, Given the timeframe for undertaking this solicitation, PG&E noted that it had a preference for projects that can agree to terms in an expedited fashion. In the RFO Protocol, PG&E informed Participants that they must submit applicable Form Agreements with their offer and must include all edits necessary to accurately describe the proposed project at the time of offer submittal.

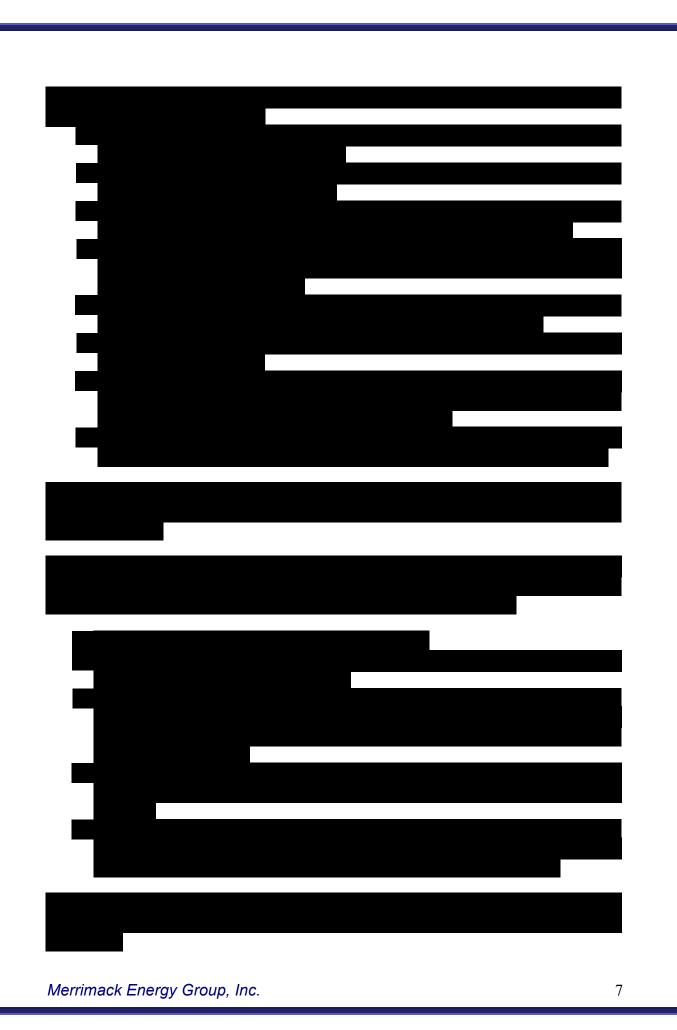
Shortly after shortlist notification,

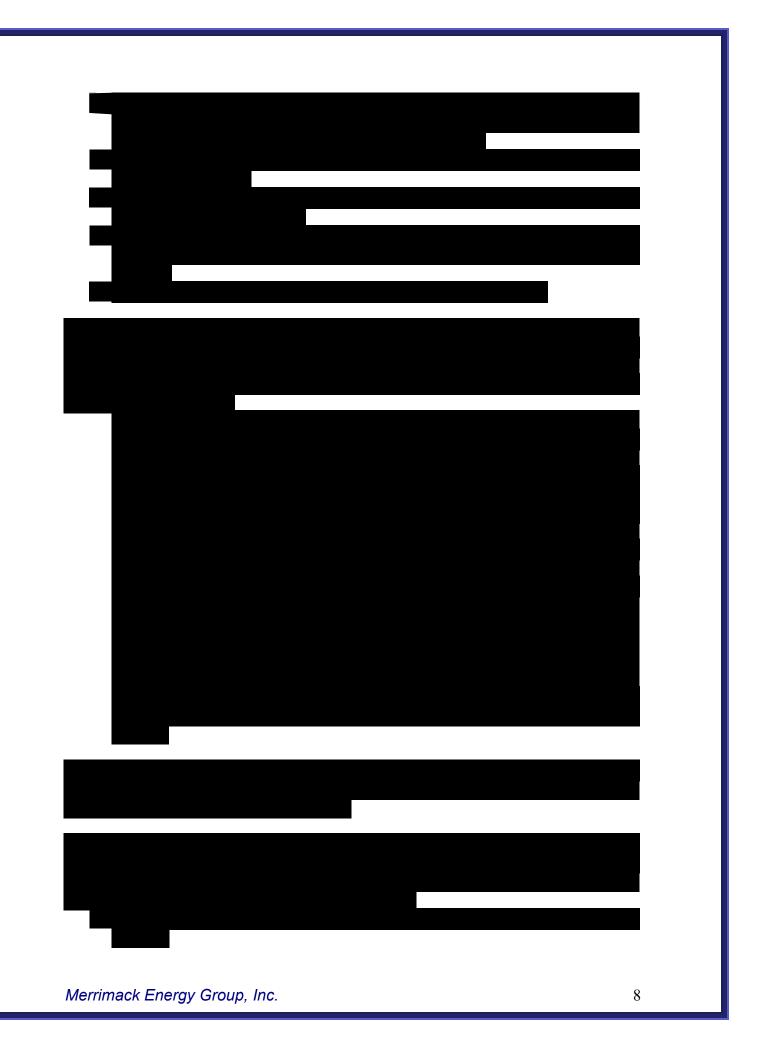
Merrimack Energy reviewed the redlines to the pro forma agreements prepared by the shortlisted Participants.

shortlisted Participants.

At the April 13, 2020 meeting,

⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery term); Long Term Resource Adequacy Agreement (10 or 15 year term); Behind the Meter Resource Adequacy Agreement for new projects (10 or 15 year terms); and Demand Response Agreement (up to 10 year terms).







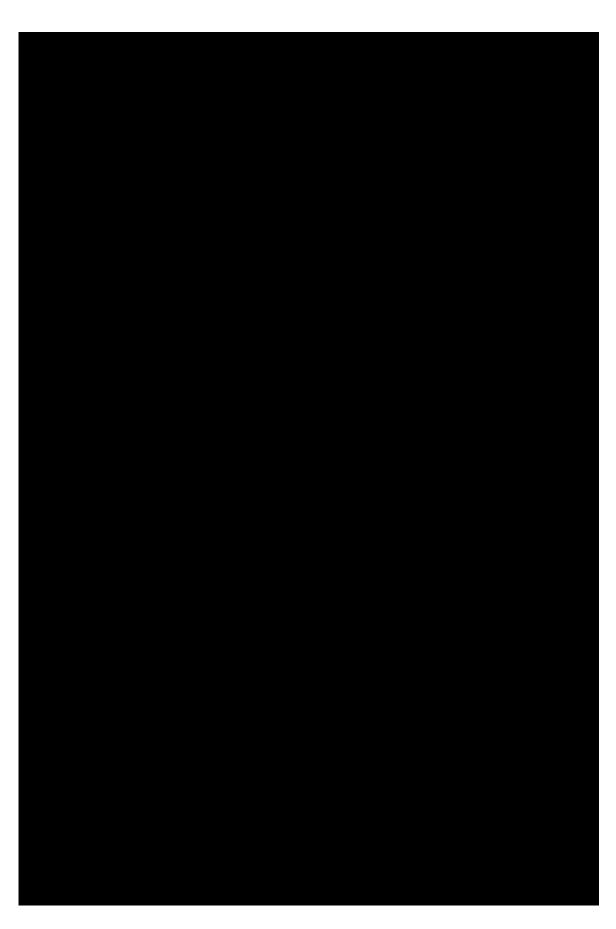
The key provisions of the final executed Blythe Energy Storage 110, LLC ESRAA are summarized in Exhibit C-2.

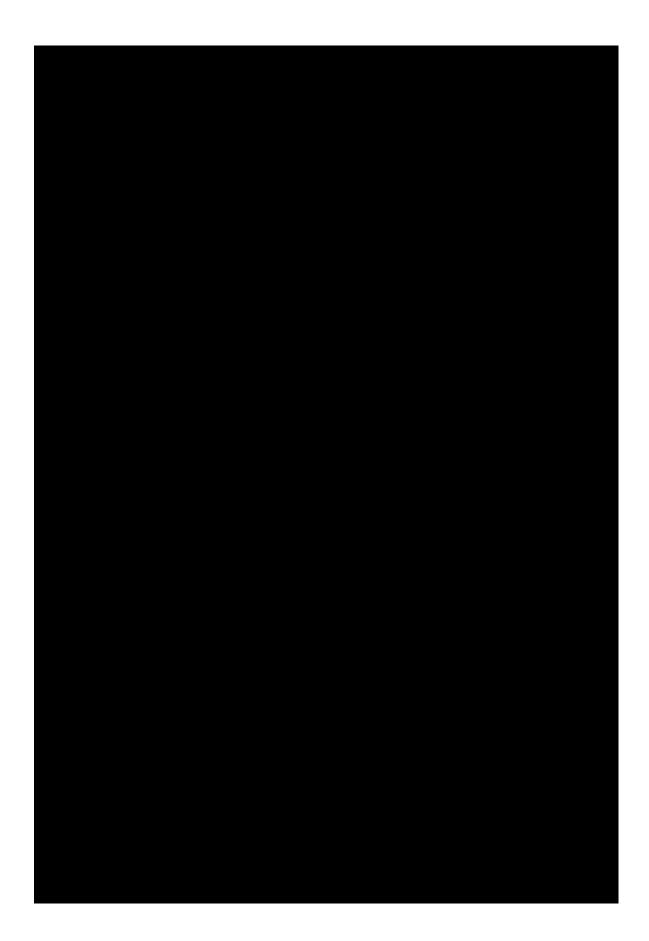
Exhibit C-2: Final Contract Key Provisions

Contract Provisions	Inclusion in Final Contract
Form of Agreement	Long Term Resource Adequacy Agreement













In addition to the contract provisions described above, the LTRAA also includes Appendix II and III which provide a description of the facility, unit, performance characteristics and operational limitations. The information from Appendix II and III is summarized in Exhibit C-3 below.

Exhibit C-3: Summary of LTRAA Appendix II and III for Blythe Energy Storage 110, LLC

Project Name	Blythe Energy Storage 110 project
Technology Type	Lithium-Ion Batteries
Physical Point of Interconnection	Colorado River 220 kV Substation
to the CAISO Grid	
Existing Zone	SP-15
Maximum Continuous Discharge	63 MW
Power (Dmax)	
Discharge Duration	4.0 hours
Storage Energy (MWh)	252 MWh

IV. Does the Contract Merit CPUC Approval

A. Introduction

This section of the Report addresses the issue "Does the Contract merit CPUC approval and is the contract reasonably priced and does it reflect a functioning market? To address these questions the IE Report Template requires that the following issues be addressed.

- 1. Provide a discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective;
 - a. Contract price, including cost adders (transmission, credit, etc.)
 - b. Portfolio fit
 - c. Project viability
 - i. Technology
 - ii. Bidder experience (financing, construction, operation)
 - iii. Credit and collateral
 - iv. Permitting, site control and other site-related matters
 - v. Fuel status
 - vi. Transmission upgrades
 - d. Any other relevant factors
- 2. Based on the complete bid process:
 - a. Does the IOU contract reflect a functioning market?
 - b. Is the IOU contract the best overall offer received by the IOU?
- 3. Is the contract a reasonable method of achieving the need identified in the RFO?
- 4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received or the products solicited in the RFO?
- 5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain

B. Need for Procurement

Through the 2020 System Reliability RFO – Phase 1 solicitation process, PG&E is seeking offers for the purchase of eligible system resource adequacy (RA) to come online by August 1, 2021 pursuant to CPUC Decision D.19-11-016. The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online 50% of the target or 358.45 MW by August 1, 2021. To meet the CPUC's Decision, PG&E will execute Agreements in two phases. Phase 1 is for projects that intend to meet the August 1, 2021 online date and Phase 2 is for projects that intend to come online after August 1, 2021 and before August 1, 2023.

PG&E indicated in its Protocol Document that it will issue a subsequent System Reliability Request for Offers – Phase 2 in Q3 2020. PG&E stated that it will only issue Phase 2 if it does not procure its full requirements in Phase 1. Subject to any limitations regarding resource eligibility, all resources are eligible for the solicitation including new and existing resources, Behind-the-meter resources from new projects and incremental Demand Response resources.

Through this 2020 System Reliability RFO – Phase 1 process, PG&E has procured 423 MW of eligible resource capacity. The execution of this agreement with Blythe Energy Storage 110, LLC for 63 MW will provide approximately 13% of this total.

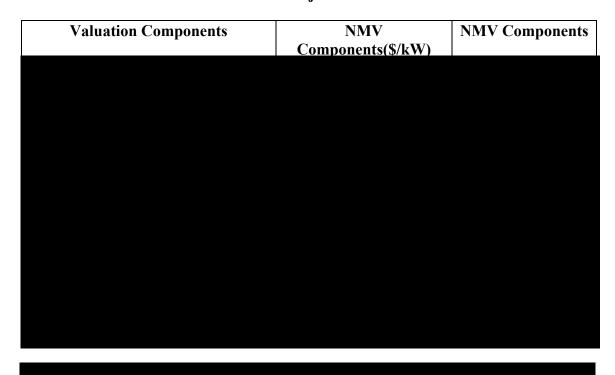
Chapter V of the IE's Report on the 2020 System Reliability RFO – Phase 1 process, provides evidence that the response to the RFO was reasonably robust, even in light of the short turnaround time for Participants to prepare their offers. As illustrated in this section of the IE report, PG&E received offer variations from projects and counterparties.

detailed evaluation conducted by PG&E is described primarily in Chapters IV and V of the IE Report on the 2020 System Reliability RFO – Phase 1, and that description confirms that the Blythe Energy Storage 110, LLC Energy Storage Resource Adequacy Agreement submitted by NextEra for the Blythe Energy Storage project was selected for execution based on its competitiveness, and on the applicable evaluation criteria, compared to other similar lithium-ion battery LTRAA agreement options. The reasonableness of the Blythe Energy Storage 110, LLC LTRAA from a viewpoint of its cost competitiveness, as well as project viability and other evaluation criteria, is set forth in the next section of this Report.

C. Contract Pricing and Portfolio Fit



Exhibit C-4: Valuation Results for the Short-Listed Blythe Energy Storage 110
Project



D. Project Viability

Project Scrutiny

The 2020 System Reliability RFO – Phase 1 Offer Package requires Participants to complete and submit documents pertaining to aspects of project development for their offers. The Offer Form (Appendix A) includes information required from the Participant on project pricing, operational information, electrical interconnection information, developer experience, site control status, permitting status, and project finance status. In addition, Participants were required to submit Supplemental Project Information (Appendix B) which requested detailed information about the status of the project. PG&E relies on this information to conduct its own qualitative evaluation of the offers.

⁶ As noted in the RFO Protocol, PG&E may consider qualitative factors that could impact the value of an offer, including project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, supply chain responsibility status, and completeness of the offer.



PG&E conducted its internal project viability assessment on each of the offers submitted and provided the assessment to the IE.

.7

Technology and Procurement Issues

The Blythe 110 Storage project will include the installation of a 63 MW, 252 MWh standalone lithium-ion battery project with power conversion systems and a high voltage substation to be located in Blythe California.

Experience (Financing, construction, operation)

NextEra is the largest wholesale generator of clean power, primarily wind and solar, in the US with approximately 15,000 MW of wind, 2,900 MW of solar, and 160 MW of battery storage currently operating. In addition, NextEra has approximately 20,700 MW of net generating capacity across 36 states. Florida Power & Light is also a subsidiary of NextEra Energy, which serves approximately 5 million customer accounts in Florida. NextEra plans to add up to 4,000 MW of new wind and 2,500 MW of new solar generation.

In terms of financing, NextEra stated in its offer that NextEra Energy Capital Holdings, Inc., a wholly owned subsidiary of NextEra Energy,

NextEra is rated Baa1 (Stable)

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and A- (Stable) by Moody's Investors Services, Inc. and Standard & Poor's Ratings Services, respectively.

Site Control and Other Site Issues, Permitting,



Interconnection



Schedule

Many, if not all, of the essential facts regarding the storage project, from the technology to the financing strength to the suitability of the site, determine whether the development team has a realistic chance of meeting the COD Expected Initial Delivery Date ("EIDD") for the project. According to NextEra,



Conclusion

Based on the foregoing, it appears to the IE that the Blythe Energy Storage 110 project should have a reasonable probability of success for completing the project by August 1, 2021, as required by the LTRAA.

Given the unique requirements of this solicitation, the IE recommends approval of the LTRAA with Blythe Energy Storage 110, LLC given the need to move forward with new resources with an in-service by August 1, 2021.

Pacific Gas and Electric Company 2020 System Reliability Request for Offers – Phase 1

Independent Evaluator Report Public Version

Attachment E

Long Term Resource Adequacy Agreement with Coso Battery Storage, LLC

May, 2020

Prepared by
Merrimack Energy Group, Inc.
26 Shipway Place
Charlestown, Mass. 02129



Table of Contents

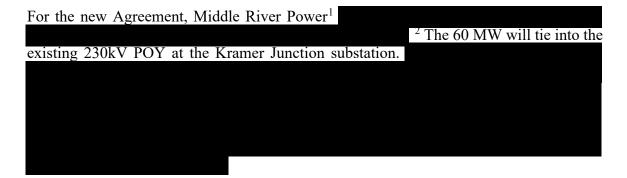
I.	Introduction	.2
II.	Offer Submission and Evaluation	3
III	. Project Specific Contract Negotiations	.5
IV	Does the Contract Merit CPUC Approval	15

I. Introduction

A. Overview

Pacific Gas and Electric Company ("PG&E) is seeking approval of a Long-Term Resource Adequacy Agreement ("LTRAA") with Coso Battery Storage, LLC ("Coso Battery Storage, LLC" or "Coso") for a 60 MW Battery Energy Storage System located in Little Lake, California.

The project includes the installation of 60 MW/240 MWh standalone lithium-ion batteries, power conversion systems, and a high voltage substation.



The term of the LTRAA between PG&E and Coso Battery Storage, LLC is for 15 years commencing on the Initial Delivery Date ("IDD"), which is expected to be October 1, 2021. The project's Commercial Operation Date ("COD") is achieved 75 days prior to IDD.

The LTRAA with Coso Battery Storage was executed by PG&E pursuant to the Company's 2020 System Reliability Request for Offers – Phase 1 ("2020 System Reliability RFO – Phase 1"). Through this RFO, PG&E was seeking offers from Participants for the purchase of eligible system resource adequacy ("RA") to come online by August 1, 2021 pursuant to California Public Utilities Commission ("CPUC") Decision D.19-11-016 (the "Decision"). The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy capacity in the amount of 716.9 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online, 50% (358.45 MW) of the target by August 1, 2021.

PG&E launched the 2020 System Reliability RFO – Phase 1 on February 28, 2020 and received offers on March 25, 2020. PG&E executed seven Agreements for eligible products as a result of the solicitation, representing a total of 423 MW, including 60 MW of energy storage capacity under the LTRAA with Coso Battery Storage, LLC.

This Attachment E to the Independent Evaluator Report on PG&E's 2020 System Reliability RFO – Phase 1 process ("IE Report on 2020 System Reliability RFO – Phase

Merrimack Energy Group, Inc.

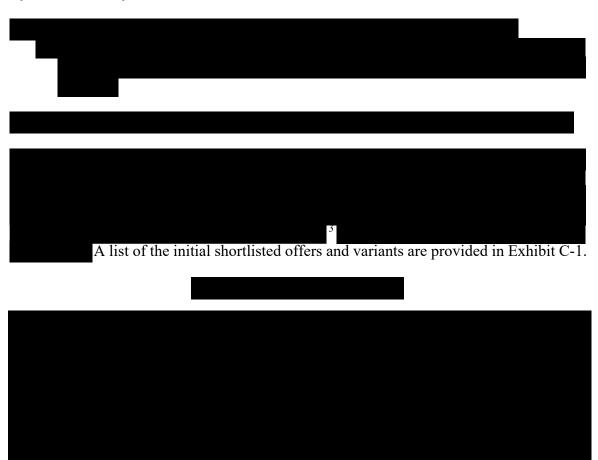
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¹Middle River Power is the Developer of the Project and submitted the offer for the Coso Battery Storage project.

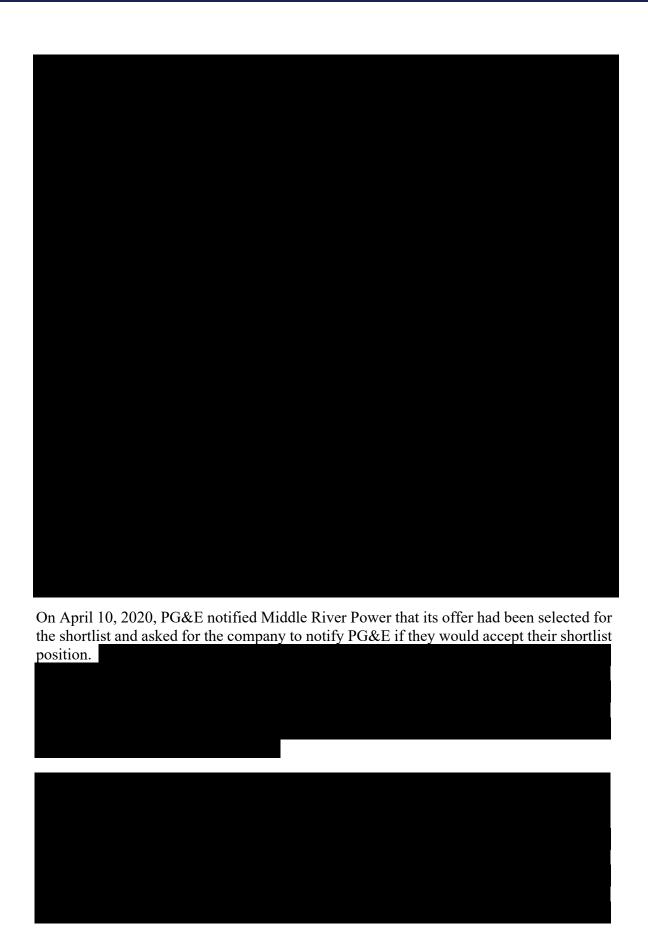
1") focuses on the two sections of the CPUC IE Report Template associated with discussions of project-specific negotiations (Section E of the Report Template) and of the contract approval issue (Section H of the Report Template) – does the contract merit CPUC approval? Is the contract reasonably priced and does it reflect a functioning market? A separate Attachment is provided for each Agreement executed by PG&E with eligible resource providers via this solicitation. Accordingly, the IE Report on PG&E's 2020 System Reliability RFO – Phase 1 will contain Attachment A through Attachment F, which address each contract executed through this solicitation.

II. Offer Submission and Evaluation

Middle River Power submitted for the Coso Battery Storage project into the 2020 System Reliability RFO – Phase 1.



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III. Project Specific Contract Negotiations

For reviewing and evaluating the performance of the utility with regard to specific contract negotiations, the IE has addressed the issues raised in the CPUC Independent Evaluator Report Template. These include:

- 1. Identify the principles the IE used to evaluate negotiations;
- 2. Using the above principles, evaluate the project specific negotiations. Highlight any issues of interest/concern including unique terms and conditions;
- 3. Was similar information/options made available to other bidders when appropriate (i.e. if a bidder was told to reduce its price, was the same information made available to others?);
- 4. Describe and explain any differences of opinion between the IE and utility. If resolved, describe the reasonableness of the outcome;
- 5. Any other information relevant to negotiations not asked above but important to understanding the IOU's process.

Principles Used to Evaluate Negotiations

The general principles followed by the IE in evaluating contract negotiations include assurance that the risk allocation provisions in the contract are reasonably balanced between the counterparties and that the utility customers are not placed at undue risk as a result of the contracting process. The IE generally "monitors" but does not actively participate in the contract negotiation process but will identify issues to the utility transactors if negotiations are moving off track or there are potential biases or inconsistencies in the process. The IE also attempts to ensure that similarly situated counterparties are treated the same or similarly and that all counterparties are provided with the same message. For example, PG&E has generally provided a clear message to counterparties in other solicitations (in addition to the 2020 System Reliability RFO – Phase 1 solicitation) that the process is a very competitive process with more projects shortlisted than PG&E intends to execute contracts for. As a result, counterparties should sharpen their pencils and price as competitively as possible.

However, given the lead times associated with completion of this RFO, PG&E essentially used a "standard" contract approach.⁴

Revisions to the Pro Forma Long-Term Resource Adequacy Agreement

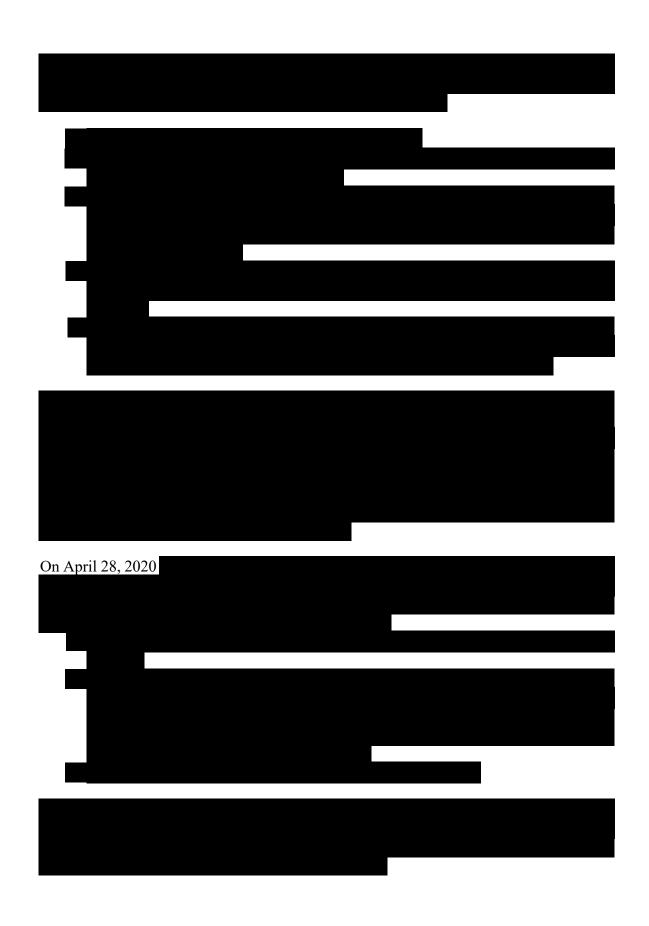
PG&E included a pro forma Long-Term Resource Adequacy Agreement in its 2020 System Reliability RFO – Phase 1 solicitation for Participants to review and redline.⁵ As a standalone battery energy storage project with a proposed fifteen-year term,

the timeframe for undertaking this solicitation, PG&E noted that it had a preference for projects that can agree to terms in an expedited fashion. In the RFO Protocol, PG&E informed Participants that they must submit applicable Form Agreements with their offer and must include all edits necessary to accurately describe the proposed project at the time of offer submittal.

Shortly after shortlist notification,

Merrimack Energy reviewed the redlines to the pro forma agreements prepared by the shortlisted Participants.

⁵ PG&E included four pro forma agreements in the RFO: Resource Adequacy Confirm (3-5 year delivery term); Long Term Resource Adequacy Agreement (10 or 15 year term); Behind the Meter Resource Adequacy Agreement for new projects (10 or 15 year terms); and Demand Response Agreement (up to 10 year terms).



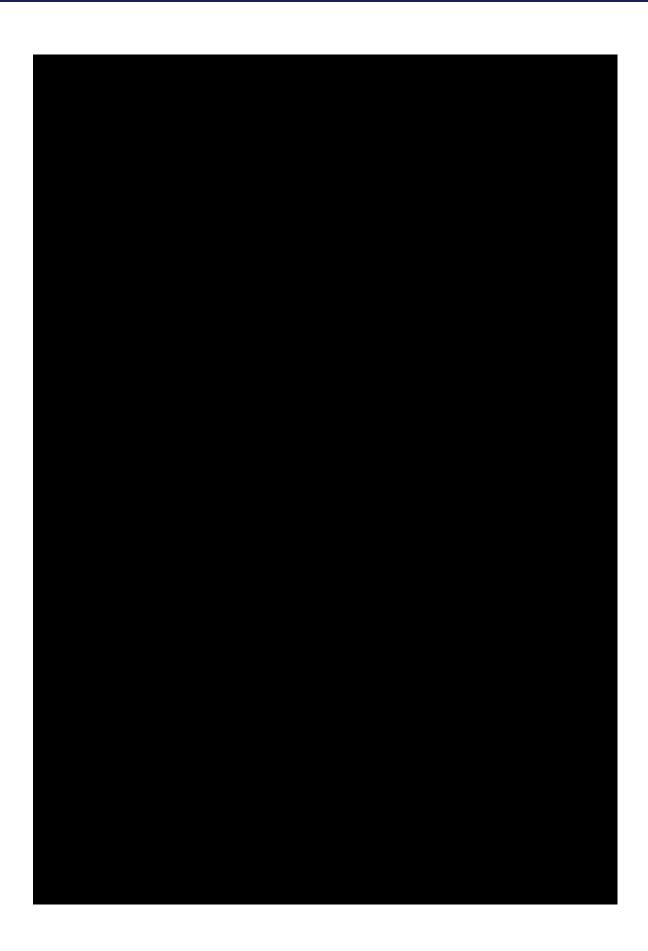


The key provisions of the final executed Coso Battery Storage, LLC LTRAA are summarized in Exhibit C-2.

Exhibit C-2: Final Contract Key Provisions

Contract Provisions	Inclusion in Final Contract
Form of Agreement	Long Term Resource Adequacy Agreement

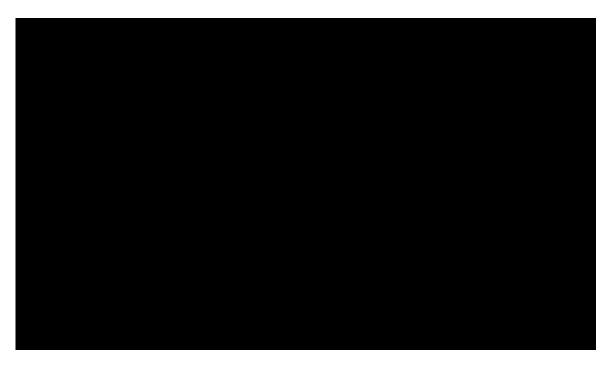












In addition to the contract provisions described above, the LTRAA also includes Appendix II and III which provide a description of the facility, unit, performance characteristics and operational limitations. The information from Appendix II and III is summarized in Exhibit C-3 below.

Exhibit C-3: Summary of LTRAA Appendix II and III for Coso Battery Storage, LLC

Project Name	Coso Battery Storage project
Technology Type	Lithium-Ion Batteries
Physical Point of Interconnection	Kramer 220 kV Substation
to the CAISO Grid	
Existing Zone	SP-15
Maximum Continuous Discharge	60 MW
Power (Dmax)	
Discharge Duration	4.0 hours
Storage Energy (MWh)	240 MWh

IV. Does the Contract Merit CPUC Approval

A. Introduction

This section of the Report addresses the issue "Does the Contract merit CPUC approval and is the contract reasonably priced and does it reflect a functioning market? To address these questions the IE Report Template requires that the following issues be addressed.

- 1. Provide a discussion and observation for each category and describe the project's ranking relative to other bids from the solicitation; and from an overall market perspective;
 - a. Contract price, including cost adders (transmission, credit, etc.)
 - b. Portfolio fit
 - c. Project viability
 - i. Technology
 - ii. Bidder experience (financing, construction, operation)
 - iii. Credit and collateral
 - iv. Permitting, site control and other site-related matters
 - v. Fuel status
 - vi. Transmission upgrades
 - d. Any other relevant factors
- 2. Based on the complete bid process:
 - a. Does the IOU contract reflect a functioning market?
 - b. Is the IOU contract the best overall offer received by the IOU?
- 3. Is the contract a reasonable method of achieving the need identified in the RFO?
- 4. If the contract does not directly reflect a product solicited and bid in an RFO, is the contract superior to the bids received or the products solicited in the RFO?
- 5. Based on your analysis of the RFO bids and the bid process, does the contract merit Commission approval? Explain

B. Need for Procurement

Through the 2020 System Reliability RFO – Phase 1 solicitation process, PG&E is seeking offers for the purchase of eligible system resource adequacy (RA) to come online by August 1, 2021 pursuant to CPUC Decision D.19-11-016. The Decision requires PG&E to make incremental procurement of system-level qualifying resource adequacy (RA) capacity in the amount of 716 MW to come online between August 1, 2021 and August 1, 2023. The Decision requires PG&E to procure and have online 50% of the target or 358.45 MW by August 1, 2021. To meet the CPUC's Decision, PG&E will execute Agreements in two phases. Phase 1 is for projects that intend to meet the August 1, 2021 online date

and Phase 2 is for projects that intend to come online after August 1, 2021 and before August 1, 2023.

PG&E indicated in its Protocol Document that it will issue a subsequent System Reliability Request for Offers – Phase 2 in Q3 2020. PG&E stated that it will only issue Phase 2 if it does not procure its full requirements in Phase 1. Subject to any limitations regarding resource eligibility, all resources are eligible for the solicitation including new and existing resources, Behind-the-meter resources from new projects and incremental Demand Response resources.

Through this 2020 System Reliability RFO – Phase 1 process, PG&E has procured 423 MW of eligible resource capacity. The execution of this agreement with Coso Battery Storage, LLC for 60 MW will provide approximately 14% of this total.

Chapter V of the IE's Report on the 2020 System Reliability RFO – Phase 1 process, provides evidence that the response to the RFO was reasonably robust, even in light of the short turnaround time for Participants to prepare their offers. As illustrated in this section of the IE report, PG&E received offer variations from projects and counterparties.

The

detailed evaluation conducted by PG&E is described primarily in Chapters IV and V of the IE Report on the 2020 System Reliability RFO – Phase 1, and that description confirms that the Coso Battery Storage, LLC Energy Storage Resource Adequacy Agreement submitted by Middle River Power for the Coso Battery Storage project was selected for execution based on its competitiveness, and on the applicable evaluation criteria, compared to other similar lithium-ion battery LTRAA agreement options. The reasonableness of the Coso Battery Storage, LLC LTRAA from a viewpoint of its cost competitiveness, as well as project viability and other evaluation criteria, is set forth in the next section of this Report.

C. Contract Pricing and Portfolio Fit



Exhibit C-4: Valuation Results for the Short-Listed Coso Battery Storage Project

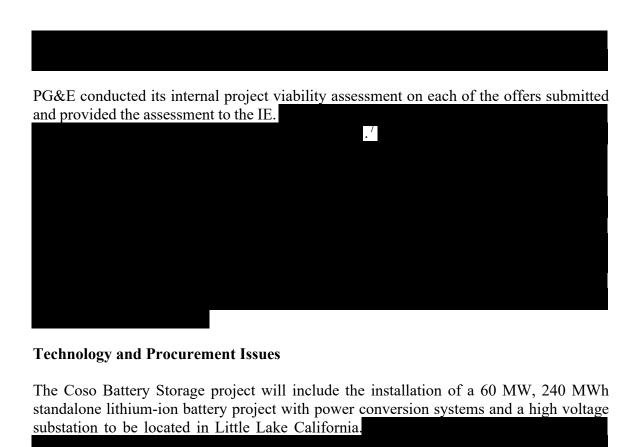
Valuation Components	NMV Components	NMV Components

D. Project Viability

Project Scrutiny

The 2020 System Reliability RFO – Phase 11 Offer Package requires Participants to complete and submit documents pertaining to aspects of project development for their offers. The Offer Form (Appendix A) includes information required from the Participant on project pricing, operational information, electrical interconnection information, developer experience, site control status, permitting status, and project finance status. In addition, Participants were required to submit Supplemental Project Information (Appendix B) which requested detailed information about the status of the project. PG&E relies on this information to conduct its own qualitative evaluation of the offers.

⁶ As noted in the RFO Protocol, PG&E may consider qualitative factors that could impact the value of an offer, including project viability, credit, safety history, agreement modifications, ability to meet the Initial Delivery Date, supply chain responsibility status, and completeness of the offer.



Experience (Financing, construction, operation)

Middle River Power is a private equity sponsored asset management firm that currently has over 3,000 MW of natural gas, geothermal, and solar power generation facilities under management in four US states, including California. A majority of Middle River Power's portfolio consists of natural gas generation, but it also owns and manages a 200 MW Lithium Ion Energy Storage system named C.P. Crane being developed in Maryland.



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Site Control and Other Site Issues, Permitting,



Interconnection



Schedule

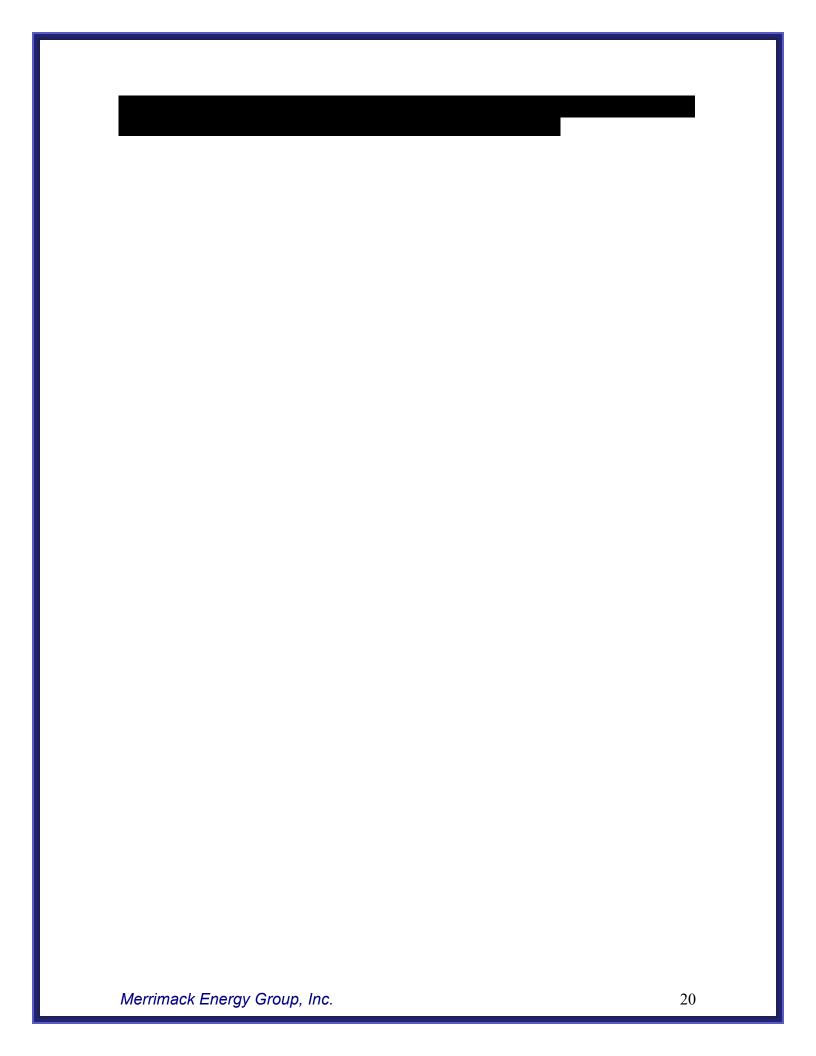
Many, if not all, of the essential facts regarding the storage project, from the technology to the financing strength to the suitability of the site, determine whether the development team has a realistic chance of meeting the COD and IDD for the project.



Conclusion

Based on the foregoing, it appears to the IE that the Coso Battery Storage project should have a reasonable probability of success for completing the project by August 1, 2021, with an Expected Initial Delivery Date of October 1, 2021 as required by the LTRAA.

Given the unique requirements of this solicitation, the IE recommends approval of the LTRAA with Coso Battery Storage, LLC given the need to move forward with new resources in-service by August 1, 2021.



Appendix I

Summary of Key Long-Term Resource Adequacy Agreement Terms (Confidential)

Appendix J

Evaluation Methodology

Appendix J: Evaluation Methodology

PG&E's quantitative evaluation criteria included Net Market Value (NMV). PG&E's evaluation also included qualitative criteria. These criteria are listed below:

Quantitative Criteria

- 1. NMV
 - a. Benefits (Energy, Ancillary Services, Capacity)
 - b. Fixed and Variable Costs

Qualitative Criteria

- 2. Project Viability
- 3. Credit
- 4. Safety
- 5. Supply Chain Responsibility

Evaluation of the offers included the above criteria. For each of the criteria, a team of subject matter experts was formed to perform the evaluation. The evaluation teams consisted of PG&E employees. The teams met periodically to review progress and exchange information.

PG&E applied the quantitative and qualitative criteria to each conforming offer or offer variation as follows:

TABLE L-1
EVALUATION CRITERIA, SCORING UNIT, AND APPLICATION

No.	Evaluation Criteria	Scoring Unit	Application
1	Net Market Value	\$/kW	Shortlist Development
2	Project Viability	+, 0, -	Post Shortlist Development
3	Credit	Required ^(a)	Informational Only
4	Safety	Required ^(a)	Post Shortlist Development
5	Supply Chain Responsibility	Required ^(a)	Informational Only

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

1. Net Market Value

For each Offer, Net Market Value (NMV) is calculated based on the summation of several components as follows:

Net Market Value: NMV = C + E - F - TWhere:

C = Capacity Value

E = Energy Value (financial)

F = Fixed Cost

T = Transmission Network Upgrade Cost

PG&E solicited the four agreement types below:

- Long-term Resource Adequacy Agreement (LT RAA);
- Behind-the-Retail Meter Resource Adequacy Agreement (BTM RAA);
- Demand Response Agreement (DRA), and
- Master EEI Resource Adequacy Confirmation (RA Confirm)

The NMV calculations were applied consistently for all the agreement types listed above, with variations depending on agreement option. Sections 1.a to 1.e below describe the NMV calculations component by component, detailing the variations by agreement type.

a. Capacity Value (C)

Capacity Value is the net present value of monthly capacity values across all months during the delivery period.

The monthly Capacity value (C) is computed as the sum of two components: 1) the monthly Net Qualifying Capacity multiplied by the Local or System capacity price, and 2) the monthly Effective Flexible Capacity (EFC in MWs) provided by the project multiplied by the flexible RA price. These values are then discounted back by the discount factor for the month.

The amounts of NQC and EFC are specified in each Offer, and will held constant for the term of the Offer unless otherwise specified.

Operational charachteristics will be used to check that the NQC and EFC supplied by the bidder are reasonable.

b. Energy Value (E)

The Energy Value component only applies to Behind the Meter agreements. These agreements have an Energy Settlement component, which is a financial reduction in the capacity payment from PG&E to the counterparty as defined in the BTM RAA.

c. Fixed Cost (F)

Fixed Costs are determined by the net present value of monthly contract payments made under the contract. The monthly contract payments were based on the Payment Quantity Price (\$/kilowatt-month) multiplied by the monthly Payment Quantity specified in the offer.

d. Transmission Network Upgrade Cost

For all offers that submit a Phase I interconnection study to CAISO, PG&E used the latest CAISO tariff rules and independent study results conducted as part of the feasibility study to determine the transmission network upgrade cost adder. For all offers that do not submit a Phase I interconnection study, PG&E used the total cost provided by the participant in the offer form. Network upgrades include all facilities necessary to: (i) reinforce the transmission system after the point where a project's electricity first interconnects with and enters the utility's transmission grid; and (ii) transmit or deliver the full amount of generation to or from the project. Transmission cost adders reflect the reimbursed portion of the cost of potential network upgrades borne by customers.

2. Project Viability

Project viability means the likelihood that the project under an offer can be successfully developed and then provides the product and services for the period stated in the offer.

As indicated in Table L-1 above, PG&E assessed each project's viability and assigned a score of +, 0, or -. This assessment was based on a review of the status and plans for key project activities (e.g., financing, site access, permitting, engineering, procurement, construction, interconnection, start-up and testing, operations, etc.).

3. Credit

PG&E considered the participant's capability to perform all its financial and financing obligations under the agreements and PG&E's overall credit concentration with the participant or its banks, including any of participant's affiliates.

4. Safety

For each offer, PG&E required information from the offering party regarding the safety history and practices of the entities that would construct, operate, own or maintain the projects, and safety information related to the technology for the project.

5. Supply Chain Responsibility

PG&E may consider participant's status as a Small Business Administration self-certified small business. PG&E is committed to supply chain responsibility which includes supplier diversity, sustainability and ethical supply chain practices. The Supplier Diversity Program, launched in 1981, aims to provide diverse suppliers with economic opportunities to supply products and services. The Supplier Sustainability Program, launched in 2007, encourages supplier responsibility, excellence and innovation.

Promoting an ethical supply chain means that health and safety, labor issues and human rights, ethical business conduct and conflicts of interest are important considerations in supplier selection. Additional information on PG&E's Supply Chain Responsibility and Diversity Program can be found at www.pge.com/supplychainresponsibility.

Appendix K

Project Development Milestones (Confidential)

Appendix L

Quantitative Evaluation Results and Price Comparison (Confidential)

PG&E Gas and Electric Advice Submittal List General Order 96-B, Section IV

AT&T

Albion Power Company Alcantar & Kahl LLP

Alta Power Group, LLC Anderson & Poole

Atlas ReFuel BART

Barkovich & Yap, Inc.
California Cotton Ginners & Growers Assn
California Energy Commission
California Public Utilities Commission
California State Association of Counties
Calpine

Cameron-Daniel, P.C.
Casner, Steve
Cenergy Power
Center for Biological Diversity

Chevron Pipeline and Power City of Palo Alto

City of San Jose
Clean Power Research
Coast Economic Consulting
Commercial Energy
Crossborder Energy
Crown Road Energy, LLC
Davis Wright Tremaine LLP
Day Carter Murphy

Dept of General Services Don Pickett & Associates, Inc. Douglass & Liddell Downey & Brand
East Bay Community Energy
Ellison Schneider & Harris LLP
Energy Management Service
Engineers and Scientists of California

GenOn Energy, Inc.
Goodin, MacBride, Squeri, Schlotz &
Ritchie
Green Power Institute
Hanna & Morton

IGS Energy

ICF

International Power Technology Intestate Gas Services, Inc.

Kelly Group
Ken Bohn Consulting
Keyes & Fox LLP
Leviton Manufacturing Co., Inc.

Los Angeles County Integrated

Waste Management Task Force MRW & Associates Manatt Phelps Phillips Marin Energy Authority McKenzie & Associates

Modesto Irrigation District NLine Energy, Inc. NRG Solar

Office of Ratepayer Advocates OnGrid Solar Pacific Gas and Electric Company Peninsula Clean Energy Pioneer Community Energy

Redwood Coast Energy Authority Regulatory & Cogeneration Service, Inc. SCD Energy Solutions

SCE

SDG&E and SoCalGas

Tiger Natural Gas, Inc.

SPURR

San Francisco Water Power and Sewer Seattle City Light Sempra Utilities Southern California Edison Company Southern California Gas Company Spark Energy Sun Light & Power Sunshine Design Tecogen, Inc. TerraVerde Renewable Partners

TransCanada
Troutman Sanders LLP
Utility Cost Management
Utility Power Solutions
Water and Energy Consulting Wellhead
Electric Company
Western Manufactured Housing
Communities Association (WMA)
Yep Energy