

Application No.: A.19-11-019

Exhibit No.: PG&E-34

Date: April 14, 2021

PG&E CROSS-EXAMINATION EXHIBIT

**Excerpt from PG&E Advice Letter 5826-E (Public Version)
Regarding System Reliability Contracts for
Lithium-Ion Batteries to be Delivered in 2021**

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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PUBLIC UTILITIES COMMISSION
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To: Energy Company Filing Advice Letter

From: Energy Division PAL Coordinator

Subject: Your Advice Letter Filing

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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. Purpose

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)	Lithium Ion Batteries	7/18/2021	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 Energy Storage – Tranche 3)	Lithium Ion Batteries	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, demand-side 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;
 - b. 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.

² Ibid.

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.

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) Behind-the-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 website, PG&E established a 2020 SR RFO – Phase 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. Selected Projects

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

D. 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