

Docket No.: A.20-04-013

Exhibit No.: _____

Date: August 31, 2020

Witness: Jin Noh

**REBUTTAL TESTIMONY OF JIN NOH
ON BEHALF OF THE CALIFORNIA ENERGY STORAGE ALLIANCE**

1 **Q: Please state your name and business address.**

2 **A:** My name is Jin Noh. I am Senior Policy Manager of the California Energy Storage Alliance (“CESA”).
3 My business address is David Brower Center, 2150 Allston Way, Suite 400, Berkeley, CA 94704.

4 **Q: Please summarize your professional and educational background.**

5 **A:** In my capacity as Senior Policy Manager, I manage CESA’s engagements at the California Public Utilities
6 Commission (“Commission”), California Independent System Operator (“CAISO”), California Energy
7 Commission (“CEC”), California Legislature, Federal Regulatory Commission (“FERC”), and other agencies. I
8 have more than 5 years of experience in policy and regulatory work at these agencies. I hold a Bachelor of Arts
9 in Public Policy Studies and Economics from Duke University and a Master’s in Public Policy (“MPP”) from
10 the University of California, Berkeley.

11 **Q: Have you ever testified before this Commission?**

12 **A:** No.

13 **Q: On whose behalf are you testifying?**

14 **A:** I am testifying on behalf of CESA. Founded in 2009, CESA is a non-profit membership-based advocacy
15 group committed to advancing the role of energy storage in the electric power sector through policy, education,
16 outreach, and research. CESA’s mission is to make energy storage a mainstream energy resource that
17 accelerates the adoption of renewable energy and promotes a more efficient, reliable, affordable, and secure
18 electric power system for all Californians. As a technology-neutral group that supports all business models for
19 deployment of energy storage resources, CESA’s membership includes technology manufacturers, project
20 developers, system integrators, consulting firms, and other clean tech industry leaders.

21 **Q: What is the purpose of your testimony?**

22 **A:** The purpose of my rebuttal testimony is to respond to several parties’ intervenor testimony on the
23 application filed by Pacific Gas and Electric Company (“PG&E”) for approval of contracts executed as part of
24 its Oakland Clean Energy Initiative (“OCEI”).

1 **I. Introduction**

2 CESA generally supports PG&E’s OCEI Application and views the Application as an
3 innovative case study into how energy storage can be procured as a multiple-use application (“MUA”)
4 that provides significant ratepayer value while advancing the state’s decarbonization goals. Over the
5 course of the stakeholder review and discovery process in this proceeding, CESA looks forward to
6 reviewing additional details and information on the Local Area Reliability Service (“LARS”) energy
7 storage agreements. However, CESA urges that the Commission carefully consider issues that have
8 already been litigated and evaluated in the appropriate venue and more carefully consider the specific
9 incremental areas of inquiry that will help the Commission assess the approval of the agreements. In
10 this Rebuttal Testimony, CESA aims to help make those distinctions in responding to intervenor
11 testimony on some of the key issues outlined in the Scoping Memo.
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13 **II. Response to Issues in Scoping Memo and Intervenors’ Prepared Testimony**

14 **A. Issue 2: Will the portfolio of projects proposed by PG&E meet the local sub area**
15 **reliability need in the areas served by the Oakland C and Oakland L substations,**
16 **effectively addressing the need identified by the California Independent System**
17 **Operator (CAISO), as amended most recently in the CAISO’s 2019-2020 Transmission**
18 **Plan?**

19 The OCEI need and proposed portfolio of resources have been exhaustively documented
20 in the California Independent System Operator (“CAISO”) Transmission Planning Process
21 (“TPP”) in the 2018-2019 and 2019-2020 cycles. CESA thus urges the Commission to not re-
22 litigate these issues that were heavily vetted in the TPP process involving a wide range of
23 stakeholders and the technical expertise to evaluate these matters. CAISO’s letter of support, as
24 attached in PG&E’s testimony, demonstrates that concerns of whether the portfolio of projects
25 effectively meets the transmission reliability needs do not need to be resurfaced or reevaluated.
26 Rather, the focus of this proceeding should be on the merits and reasonableness of the contracts
27 based on their net value, the procurement and selection process by which contracts were executed,
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1 and the appropriateness of the cost recovery mechanism of the investment to the ratepayers, in
2 addition to several of the other contracting or policy issues highlighted in the Scoping Memo. To
3 this end, CESA agrees with Cal Advocates that the question of whether the two LARS agreement
4 meets the transmission reliability need is sufficiently addressed in PG&E’s testimony and in
5 supporting CAISO documentation.¹

6 However, California Large Energy Consumers Association (“CLECA”) raises a number
7 of concerns about the ability of the four-hour storage resources in meeting the contingency needs,
8 such as contractual assurances that the seller will maintain a sufficient state of charge or how the
9 storage will address the contingency need.² CLECA adds that, since project owners have the right
10 to charge and discharge the storage resource, there are risks that the pursuit of market rents would
11 risk insufficient or depleted state of charge and thus transmission reliability.³ As noted above,
12 whether the proposed four-hour storage resources at the specified locations would address the
13 Oakland sub-area reliability need was already studied for sufficiency and approved by the CAISO.
14 Furthermore, whether an energy storage resource has sufficient state of charge is managed by the
15 project owner and operator through its bidding and scheduling in the CAISO market and through
16 strict utilization and testing regimes within the contract. Contractual or operational requirements to
17 have a minimum state of charge is not required to ensure delivery of reliability services for RA
18 resources to deliver their capacity in all hours of the day, particularly during the availability
19 assessment hours (“AAH”). Market tools, such as the optional end-of-hour state-of-charge
20 parameter, are being developed by the CAISO in Phase 4 of the Energy Storage and Distributed
21 Energy Resources (“ESDER”) Initiative to help storage resources manage their state of charge in
22 real time and to help operators manage their resource deliver on their day-ahead awards and

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25 ¹ Chapter 2 Identification of Reliability Need of the Testimony of Patrick Cunningham and Paul Worbach
at 3 and 13.

26 ² Testimony of Dr. Barbara R. Barkovich on behalf of the California Large Energy Consumers Association
at 3-4 and 8.

27 ³ *Ibid* at 8 and 11.

1 contractual obligations, including for RA as well as transmission reliability needs.⁴ Such tools can
2 be used to provide better assurances that the storage resource can deliver on both reliability
3 obligations. Prescriptive contractual provisions are thus unnecessary and should not be the reason
4 for rejecting the approval of the proposed LARS agreements.

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6 **B. Issue 4b: To determine the comprehensive cost efficiency of the proposed solution to the**
7 **Oakland Power Plant retirement, should the cost of the EBCE RA agreements**
8 **associated with the OCEI energy storage projects be considered alongside the cost of the**
9 **LARS agreements?**

10 Several parties contended that the costs and benefits of the Resource Adequacy (“RA”)
11 contracts for East Bay Community Energy (“EBCE”) should be considered in the evaluation for
12 approval of the contracts in this proceeding in order to evaluate the overall cost efficiency of the
13 portfolio.⁵ Cal Advocates proposed two different options to either compare the total cost to
14 similar storage resources or to include a representative RA value for the EBCE contracts. CESA
15 disagrees and does not believe that EBCE’s procured RA attributes are necessary to evaluate the
16 cost reasonableness of the proposed LARS agreements since each load-serving entity (“LSE”) has
17 separate procurement authority and are seeking different attributes. Project developers submitted
18 separate and independent bids and engaged in negotiations separately,⁶ leading to lower costs to be
19 submitted to PG&E and EBCE, respectively. CESA thus believes that EBCE’s Local RA costs
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24 ⁴ *Energy Storage and Distributed Energy Resources Phase 4 Final Proposal* published by the CAISO on
25 August 21, 2020 at 4-5. [http://www.caiso.com/InitiativeDocuments/FinalProposal-EnergyStorage-
26 DistributedEnergyResourcesPhase4.pdf](http://www.caiso.com/InitiativeDocuments/FinalProposal-EnergyStorage-DistributedEnergyResourcesPhase4.pdf)

27 ⁵ Testimony of Sue Mara on behalf of Alliance for Retail Energy Markets and Direct Access Customer
28 Coalition at 4; and Chapter 5 Cost Reasonableness of the Testimony of Karl Stellrecht of the Public
Advocates Office at 3-4.

⁶ Chapter 3 The OCEI Preferred Resource Portfolio of the Testimony Sandra J. Burns of Pacific Gas and
Electric Company at 2-3.

1 and benefits are outside the scope of this application; it is appropriate for the Commission to only
2 assess the reasonableness of the specific product and attributes being procured by PG&E.
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4 **C. Issue 4f: Are PG&E’s proposed LARS Agreement costs more cost-effective than**
5 **alternative solutions?**

6 Several parties criticize the OCEI Application because PG&E does not quantify the
7 benefits, except for the transmission reliability value.⁷ However, considering PG&E is procuring
8 energy storage resources to meet the transmission reliability need, the procurement and approval
9 of a non-wires transmission alternative is one strictly focused on whether a project meets the
10 identified transmission reliability need, as required in accordance with WECC/ISO reliability
11 criteria and NERC standards and as studied in the TPP, and whether it is the most cost-effective
12 transmission solution. These are standards and requirements that CAISO and participating
13 transmission owners (“PTOs”), such as PG&E, must meet, where transmission investments or
14 non-wires alternatives must be identified on a least-cost basis. CAISO’s approval of the OCEI
15 portfolio was thus based on the estimated cost of alternatives.⁸ In its evaluation criteria, the
16 CAISO outlines a three-step approach to identify the reliability need and the resource types that
17 could address the specific need, without reference to specific benefits that must be quantified and
18 valued for its approval.⁹ In the since-suspended Storage As Transmission Alternative (“SATA”)
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24 ⁷ Testimony of Sue Mara on behalf of Alliance for Retail Energy Markets and Direct Access Customer
25 Coalition at 10; and Chapter 5 Cost Reasonableness of the Testimony of Karl Stellrecht of the Public
26 Advocates Office at 3.

27 ⁸ CAISO 2017-2018 Transmission Plan published on March 22, 2018 at 129.

28 ⁹ See *Consideration of alternatives to transmission or conventional generation to address local needs in the
transmission planning process* published by CAISO on September 4, 2013.

[http://www.caiso.com/Documents/Paper-Non-ConventionalAlternatives-2013-
2014TransmissionPlanningProcess.pdf](http://www.caiso.com/Documents/Paper-Non-ConventionalAlternatives-2013-2014TransmissionPlanningProcess.pdf)

1 Initiative at the CAISO, consideration of energy market revenues was viewed through different
2 options that could reduce the total transmission cost recovery of the resource.¹⁰

3 As such, given that PG&E is only procuring the transmission reliability service, the
4 LARS agreements should focus on the specific attributes that are being procured for and assess
5 them as appropriate against how such attributes are typically assessed – *i.e.*, similar to other
6 transmission investments, the most cost-effective or least-cost resource to meet the transmission
7 reliability need. Other benefits, such as the environmental attributes, is more appropriately
8 addressed qualitatively, as detailed by PG&E in its Application.

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10 **D. Issue 5a: Are the LARS Agreements required to comply with Sections 2835 and 2836.6**
11 **regarding energy storage contracts and Decision (D.) 18-01-003 regarding multiple use**
12 **application rules and D.16-09-007, and if so, do they?**

13 Cal Advocates expresses that the energy storage resources must be contracted according
14 to the MUA Decision, Decision (“D.”) 18-01-003,¹¹ which governs the evaluation of MUAs of
15 energy storage in accordance with eleven adopted rules. While generally supportive of the
16 application of the adopted rules in D.18-01-003, CESA cautions that the decision was an interim
17 framework that was subject to follow-up working group discussion, where the Commission
18 recognized that “allowing some flexibility for storage resources to provide multiple reliability
19 services in the near term may provide important learning opportunities to inform policymaking.”¹²
20 The MUA Working Group later convened and provided a set of recommendations in a report
21 submitted in August 2018, which have yet to be considered in an active rulemaking.

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24 ¹⁰ *Storage as a Transmission Asset Second Revised Straw Proposal* published by CAISO on October 16,
25 2018 at 15-24. [http://www.caiso.com/InitiativeDocuments/SecondRevisedStrawProposal-Storageas-
26 TransmissionAsset.pdf](http://www.caiso.com/InitiativeDocuments/SecondRevisedStrawProposal-Storageas-TransmissionAsset.pdf)

27 ¹¹ Chapter 2 Identification of Reliability Need of the Testimony of Patrick Cunningham and Paul Worbach
of the Public Advocates Office at 3 and 5.

28 ¹² *Decision on Multiple-Use Application Issues*, D.18-01-003, issued in R.15-03-011 on January 11, 2018 at
16.

1 With this in mind, the MUA rules should be flexibly applied to consider time-
2 differentiated and simultaneous service provision, not just the capacity-differentiation of service
3 provision as outlined in Rule 7 and as recommended by Cal Advocates.¹³ Similarly, so long as
4 PG&E demonstrates that the performance of one obligation does not render the resource from
5 being unable to perform the other service obligation, the MUA rules should not place a strict
6 interpretation of “priority” from Rule 6, especially as there may be certain time periods where the
7 simultaneous provision of discharged energy can address both needs at once and the provision of
8 both RA and LARS is through CAISO market integration and optimization. Similarly, though Cal
9 Advocates sought for PG&E to demonstrate how payment for RA and LARS are measurable,
10 incremental, and distinct,¹⁴ RA and transmission reliability are separately identified/defined
11 services and thus incremental, per Rule 11. In sum, while supportive of Cal Advocate’s intent to
12 solicit more information, a careful consideration of each need, service definition, and service
13 requirements is needed in evaluating the LARS agreements’ compliance with the MUA rules.

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15 **E. Issue 5c: Will the OCEI have a positive impact on greenhouse gas and criteria pollutant**
16 **emissions?**

17 While correctly identifying that energy storage does not have source emissions but has
18 net emissions impact based on their operations, Cal Advocates recommends that PG&E
19 demonstrate, or alternatively, have PG&E contract with a third-party evaluator conduct an analysis
20 on the forecasted greenhouse gas (“GHG”) and criteria pollutant emissions impact of the LARS
21 agreements.¹⁵ CESA agrees with Cal Advocates on the importance of ensuring that the energy
22 storage resources procured should advance the state’s progress, but believes that the requested
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26 ¹³ *Ibid* at 6.

27 ¹⁴ *Ibid* at 7.

28 ¹⁵ Chapter 4 LARS Agreement Compliance with State Policy Goals of the Testimony of Kaj Peterson of the Public Advocates Office at 3-4.

1 demonstration or third-party analysis is unnecessary in this case and would be overly complex to
2 forecast.

3 First, there are immediate emissions-reducing benefits of the Dynegy Oakland Power
4 Plant being replaced by energy storage resources, which as noted by Cal Advocates, do not
5 contribute directly to GHG, criteria pollutants, or local air pollution. There are significant
6 emissions-related benefits in supporting the retirement of such emissions-intensive and
7 environmentally harmful resource types.

8 Second, with the energy storage resources under the LARS agreement being integrated in
9 the CAISO market and participating as a RA resource, they will be incentivized through wholesale
10 market prices to reduce GHG emissions. In-front-of-the-meter (“IFOM”), market-participating
11 energy storage operations can reasonably be assumed to reduce GHG emissions given that
12 marginal GHG emission rates are relatively well-correlated with wholesale energy market prices
13 in California.¹⁶ As such, as CAISO market-integrated resources, the LARS resources will have
14 the price signals to operate as an economically rational resource and deliver on emissions
15 reductions.

16 Third, in other procurement processes, the Commission has recognized the significant
17 complexity and challenge of demonstrating on an *ex ante* basis expected emissions based on
18 forecasted storage operations. In doing so, for example, the Commission has declined to adopt an
19 upfront demonstration requirement of the GHG emissions analysis prior to contract approval – a
20 requirement that Cal Advocates is seeking in this proceeding.¹⁷ Rather, the Commission has relied
21 on its extensive integrated resource planning (“IRP”) models that have identified energy storage as
22 a significant part of the resource portfolio to achieve the state’s long-term decarbonization goals.

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26 ¹⁶ See *SGIP GHG Signal Working Group Final Report* published in R.12-11-005 on September 6, 2018 at
127.

27 ¹⁷ Chapter 4 LARS Agreement Compliance with State Policy Goals of the Testimony of Kaj Peterson of the
Public Advocates Office at 3-4.

1 Though actual operations-related GHG emissions will differ from a perfect foresight model, a
2 requirement to have upfront GHG analysis prior to any energy storage contract approval is
3 impractical and would unduly burdensome. Instead, Commission policies and CAISO market
4 mechanisms may better address Cal Advocates’ concerns.

5 Finally, in considering transmission alternatives, CESA notes that GHG emissions impact
6 is not currently a criterion in selecting the optimal transmission solution. Whether the solution
7 meets the reliability need and is least cost are the driving factors for reliability projects, such as
8 PG&E’s OCEI projects. Such benefits are typically considered for economically-driven or policy-
9 driven transmission investments,¹⁸ but such approaches have yet to be developed, to CESA’s
10 knowledge, for non-wires alternatives.

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12 **F. Issue 6a: Have potential safety risks been adequately reduced, managed, and**
13 **addressed?**

14 PG&E shares how it followed best practices to meet safety requirements. In response,
15 CLECA attached the Arizona Public Service (“APS”) McMicken Battery Energy Storage facility
16 post-event report prepared by DNV GL, questioning whether PG&E has addressed the safety risks
17 highlighted in this report.¹⁹ Safety is important, and the lessons learned from the APS fires are
18 constantly emerging, but CESA recommends the use of approved standards (*e.g.*, UL 9540, NFPA
19 855) and best practices to ensure the safety of battery storage installations. The findings from the
20 APS fires are still being investigated in an active docket, where stakeholders are still actively
21 discussing or disputing some of the actionable findings of the report,²⁰ such that it would be

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25 ¹⁸ *Transmission Economic Assessment Methodology (TEAM)* published by the CAISO on November 2,
26 2017.

27 ¹⁹ Testimony of Dr. Barbara R. Barkovich on behalf of the California Large Energy Consumers Association
28 at 16.

29 ²⁰ For example, comments from LG Chem show that the results and findings are still being reviewed and
30 litigated. See *In the Matter of the Commission’s Inquiry of Arizona Public Service Battery Incident at*

1 premature to incorporate the findings there into this proceeding. CESA is also unclear on what
2 within the APS report could be used at this time.

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4 **G. Issue 6b: Is the project timeline provided by PG&E feasible?**

5 Yes, by adhering to the schedule outlined in the Scoping Memo and have a Commission
6 Decision in January 2021, the project timeline is feasible. To begin deliveries on time, a notice to
7 proceed is needed by Q1 2021.

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9 **Q: Does this conclude your testimony?**

10 **A:** Yes. I appreciate the opportunity to submit this rebuttal testimony on behalf of CESA.
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