

Docket No.: A.21-06-022

Exhibit No.: \_\_\_\_\_

Date: April 29, 2022

Witness: Jin Noh

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

1 **Q: What is the purpose of your Reply Testimony?**

2 **A:** The purpose of this Reply Testimony is to provide our responses to various comments and proposals  
3 submitted by other parties on Pacific Gas and Electric’s (“PG&E”) proposed framework to assess and procure  
4 substation microgrid solutions to mitigate outage events, particularly Public Safety Power Shutoff (“PSPS”)  
5 events. In Opening Testimony, the California Energy Storage Alliance (“CESA”) supported the creation of a  
6 framework to evaluate the need for substation-level microgrids on an annual basis. However, the narrow focus  
7 on mitigating solely PSPS events may prevent consideration of other outages that can be mitigated as well.  
8 Additionally, reliance on historical weather modeling may not show future weather risks, given that California  
9 is consistently experiencing hotter and drier conditions. Beyond the identification of a microgrid as an  
10 appropriate investment for a particular substation, there was also a lack of clarity surrounding how PG&E's  
11 proposed emissions standard will incorporate energy storage grid charging and how changes in yearly modeling  
12 outputs will affect open Requests for Offers (“RFOs”) or projects in development. In our Reply Testimony,  
13 CESA does not touch upon every topic or proposal raised, but we address various parties’ testimonies regarding  
14 the evaluation of microgrid benefits and emissions, ranking of substations for consideration in this framework,  
15 and procurement parameters.

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17 **Q: Public Advocates Office at the California Public Utilities Commission (“Cal Advocates”) states**  
18 **that “PG&E should include grid benefits in the absence of PSPS mitigation as a qualitative evaluation**  
19 **factor for multi-season solutions.” Why is the evaluation of these benefits important?**

20 **A:** As highlighted by CESA<sup>1</sup> and echoed by Cal Advocates,<sup>2</sup> PG&E’s methodology to identify  
21 substations most at risk of future PSPS using a lookback study is very sensitive to the modeling parameters  
22 used. Given the use of a 10 PSPS event with 100+ safe-to-energize (“STE”) threshold, inter-year modeling  
23 changes may mean that substations that met the threshold for a microgrid solution one year may not the next.

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27 <sup>1</sup> See CESA Opening Testimony at p. 11-12.

<sup>2</sup> See Cal Advocates Opening Testimony at p. 5-3 – 5-4.

1 Questions still remain surrounding how PG&E will treat substations for which solutions have been procured;  
2 however, this scenario should be anticipated, and determinations should be made in this proceeding surrounding  
3 treatment of these substations and procured solutions.

4 A variety of grid investments for the sole purpose of PSPS mitigation run the risk of becoming  
5 stranded assets given changing grid needs and imperfect forecasting abilities for load, supply, and other grid  
6 conditions. However, to mitigate this risk within PG&E’s proposed framework, Cal Advocates suggests “that  
7 technologies that provide grid benefits outside of PSPS mitigation be included as a qualitative factor in the  
8 evaluation of long-term substation microgrid PPS mitigation solution bids.”<sup>3</sup> CESA supports this creation of a  
9 qualitative evaluation criteria that considers grid benefits including capacity, distribution deferral services, and  
10 the ability to mitigate non-PSPS outages.

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12 **Q: What can PG&E do to improve forecasting of PPS needs and thresholds for assessing**  
13 **microgrid solutions?**

14 **A:** Enchanted Rock<sup>4</sup> echoed CESA’s concerns<sup>5</sup> that historical weather may not be reflective of future  
15 weather conditions and PPS risk given increasing droughts and wildfire risk due to climate change. Moreover,  
16 improvements can be made to the event thresholds for assessing microgrid solutions. On top of considering only  
17 the number of PPS events that would be triggered in any analysis, CESA and Enchanted Rock similarly raised  
18 important factors such as duration, which heavily influence the impacts of PPS events.<sup>6</sup> Evaluation of other  
19 considerations, such as number of customers, particularly medical baseline customers, should also be included,  
20 as suggested by Cal Advocates<sup>7</sup> and The Utility Reform Network (“TURN”).<sup>8</sup> Prioritizing substations that serve  
21 more customers will allow investments to be prioritized for areas where more customers are being impacted.

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25 <sup>3</sup> Cal Advocates Opening Testimony at p. 5-5, lines 8-9.

26 <sup>4</sup> Enchanted Rock Opening Testimony at p. 2-3 and p. 5-6.

27 <sup>5</sup> CESA Opening Testimony at p. 7-8.

28 <sup>6</sup> CESA Opening Testimony at p.8 and Enchanted Rock Opening Testimony at p. 3-4.

<sup>7</sup> Cal Advocates Opening Testimony at p. 3-7 – 3-9.

<sup>8</sup> TURN Opening Testimony at 7.

1 However, some customers, including medical baseline customers, face the “most dire impacts” of outages and  
2 should be considered.<sup>9</sup> Overall, CESA supports the use of metrics, such as Cal Advocates’ proposed customer-  
3 hours without service,<sup>10</sup> that encompass number of customers impacted, number of PSPS events, and duration  
4 of events to determine cutoffs and prioritization for the evaluation of microgrid solutions for substations. There  
5 will likely need to be considerations for unique cases where customers may be facing extreme impacts, such  
6 areas with few events but very long outages or areas with more medical baseline customers that are  
7 disproportionately impacted.

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9 **Q: How can other grid benefits or services be considered when evaluating bids?**

10 **A:** PG&E states that, when considering whether a contract will meet its cost threshold for a streamlined  
11 approval process, there will be “netting of revenues from wholesale market participation,”<sup>11</sup> to determine the  
12 cost of a bid. CESA believes this is appropriate in scenarios where a utility-owned bid is submitted, and PG&E  
13 can identify other services that will be provided by the assets and the value of those services. To this end,  
14 TURN explained that revenues that are discounted should “flow back to ratepayers, and [be] properly  
15 discounted in PG&E’s analysis.”<sup>12</sup>

16 However, for third-party bids, it may be hard to assess specific revenues that will be earned from other  
17 grid services since evaluations of offers for those services may not be done in tandem with the evaluation of a  
18 solution within this procurement framework – *e.g.*, off-takes of services, such as capacity, may not be with  
19 PG&E. CESA encourages PG&E to share factors that impact the ability to provide grid services, including  
20 available deliverability and distribution deferral opportunities, that will allow third parties to internally evaluate  
21 those opportunities themselves and submit lower bids to solicitations from this framework, helping to lead to  
22 more successful solicitations and cost-effective solutions.

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26 <sup>9</sup> TURN Opening Testimony at 7, line 9.

<sup>10</sup> Cal Advocates Opening Testimony at p. 3-9, lines 5-7.

<sup>11</sup> PG&E Prepared Testimony at p. 5-16, lines 31-32.

<sup>12</sup> TURN Opening Testimony at p. 9, lines 17-18.

1 Notwithstanding these methods to quantify grid services, CESA still supports a qualitative evaluation  
2 of the potential for grid services as well. It can take time for parties to execute contracts for multiple services,  
3 while microgrids may need to be deployed in a relatively short timeframe to meet anticipated near-term PSPS  
4 outages. However, considering the challenges of accurately predicting PSPS needs and concerns highlighted by  
5 CESA and Cal Advocates above, it is worth qualitatively evaluating bids for the potential for other grid  
6 services; CESA therefore recommends that PG&E add grid services as a qualitative factor and evaluate these  
7 criteria on a relative basis, in line with the evaluation of other qualitative criteria.<sup>13</sup> Given this complexity,  
8 CESA opposes TURN's proposal for a strict cost cap of double the cost of diesel.<sup>14</sup> Instead, PG&E should be  
9 able to go through a more rigorous process for approval of microgrids beyond the cost cap, such as the proposed  
10 Tier 3 Advice Letter, where stakeholders can provide input and the Commission may consider the nuances of a  
11 potential investment and the incremental or additional benefits that it can provide.

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13 **Q: How should third-party bids be evaluated relative to utility-owned proposals?**

14 **A:** While CESA believes that both utility-owned and third-party assets will be least-cost, best-fit solutions  
15 in different solicitations, any solicitation held within this framework should be as competitive as possible. To  
16 this end, PG&E should adhere to the principles outlined in Decision ("D.") 19-06-032 Appendix A for  
17 competitive solicitations, including adhering to equal treatment of bids from the utility and third parties. To this  
18 end, TURN's recommendation to limit the O&M and capital expenditures that can be recovered from ratepayers  
19 to only forecasted amounts should be adopted.<sup>15</sup>

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21 **Q: How can we ensure that microgrids procured through this framework will not increase total**  
22 **emissions?**

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26 <sup>13</sup> See PG&E Prepared Testimony at p.5-14 - 5-15.

27 <sup>14</sup> TURN Opening Testimony at p.9, lines 12-14.

28 <sup>15</sup> TURN Opening Testimony at p.19, lines 6-8.

1 **A:** CESA generally finds PG&E’s proposed emissions criteria is reasonable – *i.e.*, to procure solutions  
2 that reduce PM and NOx emissions by at least 90 percent compared to Tier 2 diesel. At the same time, there  
3 should be consideration of whether there is an accurate portrayal of the emissions of any microgrid solution  
4 during both blue- and black-sky operations. TURN argued that PG&E will only be analyzing whether the  
5 emissions criteria for PM and NOx are met during either theoretical PSPS/islanded events of 48 and 72 hours.<sup>16</sup>  
6 Under this evaluation, “PG&E is unable to quantify whether or by how much clean microgrids may actually  
7 exceed emissions of diesel generation on an annual basis.”<sup>17</sup> Particularly because of concerns surrounding local  
8 air pollution and the goal of transitioning away from diesel, there should be consideration of broader emissions  
9 impacts of a particular microgrid solutions during both PSPS events and blue-sky operations.

10 As such, CESA supports the consideration of both lifecycle and annual emissions, as suggested by  
11 TURN,<sup>18</sup> when evaluating microgrid bids and solutions. However, there should be consideration of which  
12 particular technologies will be used for blue-sky operations versus PSPS or outage events. For example, a  
13 microgrid may consist of a battery energy storage system (“BESS”), hydrogen fuel cell, and linear generator, all  
14 of which will be used during PSPS events to achieve a 72-hour duration. However, a Resource Adequacy  
15 (“RA”) capacity contract may only consist of the BESS capacity. In this way, calculations of annual emissions  
16 should accurately reflect the difference in usage of particular technologies for different services.

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18 **Q: How can we ensure that microgrids are procured in time for PSPS events?**

19 **A:** Both Cal Advocates<sup>19</sup> and TURN<sup>20</sup> call for PG&E to submit formal applications for procurement of  
20 clean microgrids, each time an investment is proposed. However, the formal application process can last 12-18  
21 months to complete and can also face delays. This application proceeding, A.21-06-022, will last at a minimum  
22 12 months, with a final decision likely to be issued in Fall 2022, closer to 15 months after PG&E’s initial

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25 <sup>16</sup> TURN Attachment Question 8e at p.9-10.

26 <sup>17</sup> TURN Opening Testimony at p.14, lines 4-5.

27 <sup>18</sup> TURN Opening Testimony at p.15, lines 1-5.

<sup>19</sup> See Cal Advocates Opening Testimony at p. 2-5 – 2-7 and p.6-2.

<sup>20</sup> See TURN Opening Testimony at p.16-18.

1 application submitted on June 30, 2021.<sup>21</sup> Given that investment needs may be identified for the upcoming  
2 season, having PG&E open an application each year will create a risk of a microgrids solution not being  
3 deployed in time to meet grid needs, leading to the fallback use of temporary diesel generation or unmitigated  
4 PSPS events.

5           Instead, it is reasonable to conduct this application to gather stakeholder feedback and develop a robust  
6 process for identifying grid needs, evaluating the use of a microgrid solution versus alternatives, and procuring  
7 microgrids that are determined to be needed. Once this framework is approved by the Commission with well-  
8 vetted criteria and parameters, an Advice Letter process can support the ability of these microgrid solutions to  
9 get in place quickly, particularly where grid needs are only identified one or two seasons ahead of when they  
10 emerge.

11           The use of Advice Letter approval processes can be appropriate to procure urgent grid needs. For Mid-  
12 Term Reliability (“MTR”) needs for incremental System RA capacity, for example, Tier 3 advice letters are  
13 required to request cost recovery for third-party procurement.<sup>22</sup> For more urgent near-term needs, D.21-12-015  
14 approved the use of Tier 2 Advice Letters for approval of utility-owned storage projects used to meet  
15 emergency reliability needs in 2022-2023.<sup>23</sup> Given that PSPS and other outage risks may emerge rapidly and  
16 require quick turnaround times for procurement, CESA believes that approval of microgrids via Tier 2 Advice  
17 Letters for solutions below a cost cap and Tier 3 Advice Letters for those above a cost cap may be appropriate  
18 and could be considered in achieving a balance between the need for oversight and an established procurement  
19 framework, with the practical need for quick deployment of solutions for near-term needs.

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

22 **A:       Yes. I appreciate the opportunity to submit this Reply Testimony on behalf of CESA.**  
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26 <sup>21</sup> See *Email Ruling Granting the Proposed Resolution and Revisions to the Schedule, and Directing Parties on*  
*Testimony Protocol* issued by Administrative Law Judge Colin Rizzo on January 18, 2022.

27 <sup>22</sup> D.21-06-035 Ordering Paragraph (“OP”) 13.

28 <sup>23</sup> D.21-12-015 at 100.

**Appendix A:**  
Declaration in Support of Reply Testimony of Jin Noh on Behalf of  
the California Energy Storage Alliance



**DECLARATION IN SUPPORT OF REPLY TESTIMONY OF JIN NOH  
ON BEHALF OF THE CALIFORNIA ENERGY STORAGE ALLIANCE**

I, Jin Noh, am the Policy Director for the California Energy Storage Alliance (CESA). Having worked for CESA for over six years, I am currently managing policy and regulatory affairs for CESA and its over 100 member companies. My business address is 2150 Allston Way, Suite 400, Berkeley, CA 94704. I declare under penalty of perjury that the foregoing facts in this document are true and correct to the best of my knowledge.

Executed on April 29, 2022 at Berkeley, California.

A handwritten signature in black ink, appearing to read 'Jin Noh', is written above a horizontal line.

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Jin Noh