

Decision 22-11-009 November 3, 2022

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric
Company (U39E) Proposing
Framework for Substation Microgrid
Solutions to Mitigate Public Safety
Power Shut Offs. (U39E.)

Application 21-06-022

**DECISION ADOPTING A FRAMEWORK FOR SUBSTATION MICROGRID
RESILIENCY SOLUTIONS TO MITIGATE PUBLIC SAFETY POWER
SHUTOFFS FOR PACIFIC GAS AND ELECTRIC COMPANY**

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DECISION ADOPTING A FRAMEWORK FOR SUBSTATION MICROGRID RESILIENCY SOLUTIONS TO MITIGATE PUBLIC SAFETY POWER SHUTOFFS FOR PACIFIC GAS AND ELECTRIC COMPANY

Summary

This decision adopts a framework for substation microgrid resiliency solutions to mitigate public safety power shutoffs for Pacific Gas and Electric Company. The adopted framework contains eight (8) primary elements, including: (1) a 10-year historical lookback analysis; (2) greenhouse gas emissions performance standards; (3) clean technology market development standards; (4) an alternatives analysis; (5) a procurement strategy; (6) a rate architecture and cost allocation methodology; (7) demand response measures; and (8) environmental social justice action.

The framework adopted here is in the public interest and sets forth parameters for spurring development in clean resiliency technologies to mitigate and ultimately reduce greenhouse gas emissions during public safety power shutoffs. This decision facilitates another resiliency strategy for Pacific Gas and Electric Company customers to minimize the number of ratepayers affected by public safety power shutoff outages. The adopted framework supports keeping the lights on to preserve community continuity - one of the Commission's ongoing priority objectives to protect the public health, welfare, and safety of all Californians.

This proceeding is closed.

1. Background

1.1. Factual Background

On January 21, 2021, the California Public Utilities Commission (Commission or CPUC) issued Decision (D.) 21-01-018 that, among other holdings, adopted an interim framework for California's electric

investor-owned utilities to follow for reserving temporary generation for safe-to-energize substations.¹

D.21-01-018 requires that if a large electrical corporation would like to continue to reserve temporary generation for safe-to-energize substations, the electrical corporation would have to file an application with the Commission providing a longer-term framework for evaluating public safety power shutoff (PSPS) mitigation alternatives.² D.21-01-018 also requires that such an application must include a pathway toward transitioning to cleaner sources of generation for backup power microgrids.³

1.2. Procedural Background

On June 30, 2021, as required by D.21-01-018, Pacific Gas and Electric Company (PG&E) filed Application (A.) 21-06-022. In its Application, PG&E proposes a framework for: (1) identifying substations at high risk of de-energization in future PSPS events; (2) assessing alternatives to mitigate those PSPS outage risks; and (3) where appropriate, a procurement strategy for developing substation-level microgrid solutions to mitigate PSPS outages. PG&E's Application includes a proposal to transition to cleaner sources of backup generation and a cost recovery proposal as well.

On July 29, 2021, The Utility Reform Network (TURN) filed a protest to PG&E's Application. On August 5, 2021, the Public Advocates Office (Cal Advocates) filed a protest to PG&E's Application. Also, on August 5, 2021, the following parties filed responses to PG&E's Application: (1) California Energy Storage Alliance (CESA); (2) County of Sonoma (Sonoma); and (3) Green

¹ D.21-01-018, Appendix A.

² *Id.*

³ *Ibid.*

Power Institute.

Small Business Utility Advocates (SBUA) and Enchanted Rock, LLC (Enchanted Rock) filed motions for party status on August 13 and 25, 2021, respectively. PG&E filed its reply to the protests and responses on August 16, 2021.

On October 26, 2022, Peterson Power Systems, Inc. (Peterson Power) moved for party status. On December 16, 2021, Marin Clean Energy filed a motion for party status. The assigned Administrative Law Judge (ALJ) granted all requests for party status.

On August 12, 2021, the assigned ALJ issued a ruling setting a prehearing conference (PHC) and directed the parties to meet and confer to develop options for a proposed schedule of activities. A PHC was held on August 31, 2021.

On September 24, 2021, the assigned Commissioner issued a Scoping Memo and Ruling. The Scoping Memo and Ruling set forth the issues to be resolved in the proceeding and a schedule of activities.

On October 15, 2021, PG&E served supplemental testimony regarding the proposed emissions performance standard for multi-season microgrid substations. Energy Division hosted a public workshop on this matter on October 29, 2021.

On October 20, 2021, Cal Advocates filed a motion that sought to obtain PG&E's production of substation safety information. On November 2, 2021, PG&E filed a response to Cal Advocates' motion. On November 17, 2021, Cal Advocates filed a reply to PG&E's November 2, 2021 response.

On November 29, 2021, PG&E served noticed of an inadvertent error in its October 15, 2021 supplemental testimony and its effort to correct the error.

On December 1, 2021, PG&E filed a motion seeking to revise its supplemental testimony. On December 8, 2021, the assigned ALJ granted PG&E's request.

On December 14, 2021, the assigned ALJ issued a ruling directing Cal Advocates and PG&E, and other parties of record to the service list, to meet and confer regarding the disputes between Cal Advocates and PG&E in their respective motions. The parties were ordered to jointly file and serve a status update report to the service list no later than January 14, 2022.

On December 17, 2021, PG&E served its supplemental testimony regarding PG&E's Historical Lookback Analysis.

On January 13, 2022, PG&E filed and served its joint case management statement on behalf of itself and the other parties of record to this proceeding, including: (1) Cal Advocates; (2) CESA; (3) Peterson Power; (4) SBUA; and (5) TURN. In this joint case management statement, the parties came to joint resolution for production and testimony regarding substation safety information. Parties also requested modifications to the proceeding's schedule, which was granted by the assigned ALJ.

On January 31, 2022, PG&E served its supplemental testimony regarding its substation safety information.

On March 11, 2022, Cal Advocates filed a motion to dismiss PG&E's Application. On March 17, 2022, SBUA filed a response to Cal Advocates' motion to dismiss. On March 22, 2022, PG&E filed a response to Cal Advocates' motion to dismiss.

On March 30, 2022, the following parties served intervenor testimony: (1) Cal Advocates; (2) CESA; (3) Enchanted Rock; (3) Peterson Power; (4) SBUA; and (5) TURN. On April 29, 2022, PG&E served its rebuttal testimony.

Also on April 29, 2022, the following parties served their intervenor reply testimony to PG&E's supplemental testimony regarding its substation safety information: (1) Cal Advocates; (2) CESA; and (3) SBUA.

On May 9, 2021, the assigned ALJ issued a ruling establishing the final schedule for the proceeding and determined evidentiary hearing was not needed. Pursuant to the assigned ALJ's ruling, Cal Advocates, TURN, and PG&E jointly with Cal Advocates, filed motions to identify and/or admit exhibits into evidence on May 31, 2022. On May 31, 2022, PG&E filed a motion to seal the evidentiary record. On July 6, 2022 and July 11, 2022, the assigned ALJ granted each of the motions to admit exhibits; the exhibits were identified as requested; and PG&E's motion to seal portions of the evidentiary record was granted.

On May 31, 2022, the Yurok Tribe filed a motion for party status. The assigned ALJ granted this motion on June 2, 2022.

On July 8, 2022, the following parties submitted opening briefs: (1) Cal Advocates; (2) CESA; (3) Marin Clean Energy and Sonoma Clean Power Authority (Joint CCAs); (4) Peterson Power; (5) PG&E; (6) SBUA; and (7) TURN.

On July 22, 2022, the following parties submitted reply briefs: (1) Cal Advocates; (2) CESA; (3) Peterson Power; (4) PG&E; (5) SBUA; and (6) TURN.

2. Issues Before the Commission

The issues to be considered are:

1. Whether PG&E's Proposed Framework for Substation Microgrid Solutions (Proposed Framework) is a reasonable strategy to mitigate substation-level PSPS impacts and

- should supersede the interim approach set forth in D.21-01-018;
2. Whether PG&E's proposed emissions standards are reasonable and should supersede the interim emission standards set forth in D.21-01-018;
 3. Whether PG&E's Proposed Framework is compliant with D.21-01-018 requirements to transition to cleaner backup power;
 4. Whether PG&E's proposed framework for determining substations most likely to be impacted by transmission related PSPS outages is reasonable;
 5. Whether PG&E's proposed framework for comparing substation microgrid solutions against other PSPS mitigation alternatives is reasonable;
 6. Whether PG&E's proposed procurement framework is reasonable;
 7. Whether PG&E's cost recovery and allocation framework, subject to the review of the specific substation-level microgrid solutions and contracts via advice letter filing, is reasonable;
 8. Under certain parameters, whether it is reasonable to develop new Demand Response programs, or use existing Demand Response programs;
 9. Whether PG&E's Proposed Framework should include consideration of regional mitigations involving multiple substations;
 10. Whether PG&E's Substation Microgrid Proposal is reasonably consistent with and coordinated with its Wildfire Mitigation Plan;
 11. Whether PG&E's Substation Microgrid Proposal is reasonably consistent with and coordinated with PG&E's publicly announced intention to underground 10,000 miles of overhead electric lines; and
 12. To what extent does PG&E's Application align with or impact environmental and social justice (ESJ) communities;

including the extent to which PG&E's Application impacts achievement of any of the nine goals of the Commission's ESJ Action Plan?

3. Context and Approach to Resolving These Issues

Pursuant to Article XII, Sections one through six of the California Constitution, the Commission "has broad authority to regulate utilities."⁴ The California Legislature enacted the Public Utilities Act which authorized the Commission to supervise and regulate every public utility in California and to do all things which are "necessary and convenient in the exercise of such power and jurisdiction."⁵ Specifically, Article XII, Section 3 of the California Constitution provides that "the production, generation, transmission, or furnishing of heat, light, water, power" fall under the jurisdiction of the legislature. California public utilities statutes are enforced by the Commission.⁶

Section 451 requires that rates, terms and conditions of utility service must be just and reasonable.⁷ Further, under Section 454.51, the Commission is entrusted with assuring that public utilities develop a portfolio of energy resources that assure the reliability of the state's long-term electric supply.⁸ Section 8371 requires the Commission to facilitate the commercialization of microgrids. The Commission has taken action to facilitate the commercialization of microgrids through an array of decisions in Rulemaking (R.) 19-09-009, including D.21-01-018.

⁴ *Ford v. Pacific Gas & Electric Company* (1997) 60 Cal. App.4th 696, 700, citing to *San Diego Gas & Electric Company v. Superior Court*, (1996) 13 Cal. 4th 893, 914-915.

⁵ Section 701.

⁶ Article XII, Section 5.

⁷ Sections 451, 454 and 728.

⁸ Section 454.51, subds. (a) and (b).

D.21-01-018, among other holdings, adopted an interim framework for California's electric investor-owned utilities to follow for reserving temporary generation for safe-to-energize⁹ substations.¹⁰ D.21-01-018 requires that if a large electrical corporation would like to continue to reserve temporary generation for safe-to-energize substations, the electrical corporation needs to file an application with the Commission providing a longer-term framework for evaluating PSPS mitigation alternatives.¹¹ D.21-01-018 also requires that such an application include a pathway toward transitioning to cleaner sources of generation for backup power reservation.¹²

In this decision, we adopt a framework that sets forth parameters PG&E will use to identify future substation microgrid proposals for specific PSPS mitigation projects. These parameters will help PG&E determine whether or not such substation needs a single-season or multi-season. This framework is adopted to complement, not duplicate, the actions PG&E is implementing through its Wildfire Mitigation Plan (WMP) and is geared toward reducing redundancy of mitigation measures.

To summarize, we adopt PG&E's proposed framework with modifications recommended by stakeholders, discussed in detail below. Collectively, this framework is a reasonable process to identify the highest priority substations impacted by PSPS events and it satisfies the requirements of D.21-01-018. Generally, we find that PG&E's proposed framework is a reasonable approach to

⁹ Safe-to-energize substation means a substation where the distribution lines that deliver power locally are safe to energize with energy, but the transmission system providing the electricity is de-energized.

¹⁰ D.21-01-018, Appendix A.

¹¹ *Id.*

¹² *Ibid.*

determine if a microgrid substation is a preferable PSPS mitigation solution and therefore, this framework supersedes the interim approach adopted in D.21-01-018. We decline to adopt PG&E's proposed alternative framework, which we discuss below. In totality, we find that this approach achieves two broad goals.

The first goal is to spur transition and investment in emerging clean generation, resiliency technologies to mitigate and/or reduce greenhouse gas (GHG) emissions. Broadly speaking, the framework we adopt here is one of many resiliency strategies the Commission is implementing to minimize the number of customers affected by a transmission outage during a PSPS event.

Keeping the lights on to preserve community continuity is one of our ongoing priority objectives to protect the public health, welfare, and safety of all Californians.¹³ Indeed, the physical effects from extreme weather and climate change of higher temperatures, sea level rise, and droughts will impact everyone - with higher impact in certain counties.¹⁴ We are steadfast in our commitment to support emerging resiliency technology that keeps the lights on while mitigating and/or eliminating GHG emissions to ultimately achieve net zero emissions. To that end, the framework we adopt here - particularly our order to support the development of renewable backup power generation - may help expand investment in adaptive infrastructure and resiliency measures.

The second goal is to mitigate and/or eliminate PG&E substation-level PSPS impacts through the identification and procurement of clean substation microgrid solutions at targeted sites throughout the PG&E service territory. To

¹³ D.21-01-018 at 93-94.

¹⁴ *Id.*

achieve this end, our clean microgrid substation framework (Framework) for PG&E has eight essential elements: (1) a 10-year historical lookback analysis; (2) greenhouse gas emissions performance standards; (3) clean technology market development standards; (4) an alternatives analysis; (5) a procurement strategy; (6) a rate architecture and cost allocation methodology; (7) demand response measures; and (8) environmental social justice action.

Finally, to be clear, we are not approving a specific project for PG&E in this decision. Rather, we are adopting a policy framework which PG&E may use in the future, should a clean microgrid substation become a reasonable solution for PSPS mitigation. We discuss our Framework and our rules for implementation, below.

4. Is PG&E's Proposed 10-Year Historical Look Back Analysis Reasonable?

Consistent with the Scoping Memo and Ruling Issues #1, #3, and #4,¹⁵ parties discussed whether PG&E's Proposed 10-Year Historical Look Back Analysis is a reasonable strategy to mitigate substation-level PSPS impacts. We discuss the parties' positions, and PG&E's response, below.

4.1. PG&E's Proposal

At the foundation of its proposed framework, PG&E proposes to use data from its rolling 10-year Historical Lookback Analysis (HLA) to assess whether there is a need for a temporary or permanent substation microgrid.¹⁶ The HLA includes current PSPS criteria and grid asset conditions to model the number of times that each substation would experience a PSPS event, given the actual

¹⁵ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

¹⁶ PG&E-003 at 2-7.

weather conditions over the past 10 years.¹⁷ PG&E proposes a threshold of 10 or more events involving at least 100 safe-to-energize customers in order to prioritize a substation for microgrid mitigation.¹⁸

After identifying an initial list of candidate substations from its HLA, PG&E proposes to import its planned grid investments and re-run its HLA so it can compare substation microgrid solutions against other PSPS mitigation alternatives.¹⁹ According to PG&E, other PSPS mitigation measures include: (1) transmission line repairs; (2) transmission line switching; (3) transmission right of way expansion; (4) targeted fall-in tree removal; (5) rebuilding of transmission lines; (6) relocating transmission lines underground; and (7) transmission system expansion.²⁰ We discuss parties' positions on the HLA, below.

4.2. Parties' Positions

Generally, Cal Advocates offers several critiques²¹ of PG&E's prioritization of substation candidates. Mainly, Cal Advocates asserts that PG&E's: (1) proposed threshold for identifying candidate substations is too restrictive; (2) any substation that currently crosses PG&E's proposed threshold effectively meets the criteria; and (3) PG&E should exclude from its HLA years without (or with minimal) de-energization events in the modeling.²² TURN argues that

¹⁷ *Id.* at 2-7; and at 2-8.

¹⁸ *Ibid.*

¹⁹ PG&E-003 at 3-4, 3-5, and 3-6.

²⁰ *Id.*

²¹ PAO-002 at 3-5.

²² PAO-001 3-3 to 3-6.

PG&E should prioritize substations with medical baseline customers for clean microgrid deployment.²³

CESA generally supports PG&E's 10-year HLA.²⁴ CESA states the HLA reasonably complies with D.21-01-018 because it provides details on how investments will be evaluated, without the need for specific investments that are rushed.²⁵ However, CESA recommends that PG&E should consider weather patterns that are more likely to occur in the future, and place less weight on past weather conditions, when analyzing the propensity of future outages.²⁶

Enchanted Rock argues that while PG&E's HLA may have been helpful to address PSPS impact mitigation needs using temporary generation deployments, it does not adequately identify forward-looking PSPS risks.²⁷ Citing worsening drought conditions and increasing risk of wildfires in California, Enchanted Rock argues that PG&E's proposed HLA will not accurately predict how worsening weather and climate conditions will impact the number and duration of future PSPS events and the future risk of PSPS activities on PG&E substations.²⁸

In rebuttal to Cal Advocates, PG&E offers an alternative prioritization methodology that utilizes risk scoring, and additional considerations of PG&E's initial threshold proposal:²⁹

- For each PSPS event in the HLA at a given substation location, calculate an overall PSPS consequence score based

²³ TURN-001 at 7.

²⁴ CESA-001 at 5.

²⁵ *Id.* at 6.

²⁶ *Id.* at 7 to 8.

²⁷ ER-001 at 2.

²⁸ *Id.* at 2 to 3.

²⁹ PG&E-005 at 2-1 to 2-3.

on the latest publicly available methodology adopted by PG&E;

- Sum the PSPS consequence scores across all the projected PSPS events at the given substation; and
- Rank substation locations based on the aggregated PSPS consequence scores and select those in the top percentile as candidate locations.

In response to this alternative prioritization methodology, parties tended to favor it over the 10-year HLA. But for the reasons we discuss below, we decline to adopt the alternative prioritization methodology.

4.3. Discussion

We adopt PG&E's 10-year HLA process for identifying and prioritizing substations that are at highest risk of future PSPS outages, with modifications recommended by various stakeholders. Generally, PG&E's 10-year HLA is reasonable and should supersede the interim approach adopted in D.21-01-018.

Broadly, we find that PG&E's 10-year HLA provides an adequate statistical picture of future PSPS events. We decline to adopt Cal Advocates' proposal of a screening threshold no more restrictive than three events in a span of four years³⁰ because such an approach would not capture an adequate statistical picture of future PSPS events. Indeed, data captured under Cal Advocates' approach would be less robust given its limited time span; and would likely preclude the variability of the climate, atmospheric, and environmental conditions over time.

In response to Cal Advocates' proposal, PG&E proposed an alternative prioritization method. We decline to adopt PG&E's alternative prioritization method. PG&E's alternative prioritization method does not establish a clear

³⁰ Cal Advocates Opening Brief at 37.

threshold for when mitigation is reasonable. Further, PG&E's alternative prioritization method does not account for the cost of mitigation as prioritization is based on consequence; and likely focuses on substations serving urban, higher-population areas.

We find that PG&E's 10-year HLA captures, with the fullness of a decade's time, an adequate statistical picture with which to predict the variability inherent in climate and atmospheric conditions from year to year, including recent years. This will enable PG&E to utilize more reliable data and modeling that will in turn inform the Commission and stakeholders with better information rather than using few years of selective data. We discuss our reasoning further, and our modifications to the 10-year HLA, below.

First, we believe that the 10-year HLA will capture historic weather and environmental data that will in turn lead to selecting the substations that are most likely impacted by transmission-related PSPS outages.³¹ Under the 10-year HLA approach, PG&E will use robust data to analyze hypothetical need for de-energization of substations using current PSPS scoping criteria and current PG&E transmission asset conditions.³² Then, PG&E will model the current year PSPS criteria on each day ten times, substituting for each day the recorded historic weather and environmental conditions in each of the past 10 years.³³ The 10-year scope of the HLA, and the inclusion of years without any transmission-level PSPS events, is a reasonable approach to capture the statistical variation in weather and in PSPS impacts. The threshold of 10 or more predicted

³¹ PG&E Opening Brief at 38.

³² *Id.*

³³ *Id.* at 39.

PSPS events with 100 or more safe-to-energize customers is a reasonable method for selecting substations for mitigation.

We find that this screening process justifies both the deployment of single-season microgrids, likely powered by diesel, as well as the procurement of multi-season clean substation microgrids, should a long-term need become apparent. This relates back to the nexus of this proceeding's purpose: to transition from single-season microgrids, powered largely by diesel, to cleaner, long-term alternatives.

Next, we adopt PG&E's approach to apply this prioritization criteria to select a list of the most at-risk substations that would become candidates for further study of microgrid resiliency solutions.³⁴ Thus, we direct PG&E to prioritize substations that would have experienced 10 or more hypothetical PSPS events involving at least 100 safe to energize customers with the 10-year HLA.

Second, turning now to customer prioritization within the 10-year HLA, we agree with TURN that substations with a high number of medical baseline customers should be prioritized, if all other criteria are satisfied.³⁵ TURN argues that the most dire impacts of PG&E's PSPS events are largely borne by medical baseline customers who depend on power for medical needs, and may face life-threatening challenges if the grid is down.³⁶ We agree. A microgrid serving these customers also provides critical benefits to these vulnerable customers during outages unrelated to PSPS.³⁷ Therefore, we direct PG&E to identify the

³⁴ *Id.* at 42-43.

³⁵ TURN Opening Brief at 12.

³⁶ *Id.*

³⁷ *Ibid.*

number and proportion of medical baseline customers served by candidate substations and weigh this priority accordingly.

Some parties assert that PG&E's 10-year HLA should consider weather that is more likely to reflect future weather conditions. For example, CESA recommends that PG&E should consider weather patterns that are more likely to occur in the future and should therefore, place less weight on past weather conditions.³⁸

For its part PG&E states it agrees that the impacts of climate change and future weather patterns warrant such consideration. However, PG&E asserts that current technology is limited in its ability to forecast weather and environmental conditions years into the future.³⁹ On balance, we agree with both CESA and PG&E. Future environmental and weather conditions should be considered, to the extent that technology makes this feasible. We also find that it is appropriate, when it is reasonable, that PG&E consider future grid conditions and future grid needs in its 10-year HLA to determine whether a substation microgrid is needed. This will minimize the risk of stranded assets.

Therefore, we direct PG&E to consider future grid needs as well as future weather and environmental patterns, to the extent practicable, when conducting its 10-year HLA analysis. PG&E should consider warming temperatures in its consideration of climate change impact since extreme heat creates intense conditions that trigger PSPS events and/or wildfires. We appreciate the complexity that is inherent with attempting to plan for future weather years and climate change. Thus, we direct PG&E to work with leading national labs and

³⁸ CESA-001 at 5-8.

³⁹ PG&E Opening Brief at 40-41.

research universities, including the University of California system, to better understand the projection of future wind and heat events across California. In this way, PG&E should integrate this emerging science and data into the HLA as it becomes available.

5. Are PG&E’s Proposed Emissions Standards Reasonable and Should They Supersede the Interim Emission Standards Set Forth in D.21-01-018?

Consistent with the Scoping Memo and Ruling Issue #2,⁴⁰ parties discussed whether PG&E’s proposed emissions standards are reasonable and should supersede the interim emission standards set forth in D.21-01-018.

5.1. PG&E’s Proposal

PG&E initially proposed the following emissions standard for any multi-season solution for substation generation used to mitigate PSPS outages:⁴¹

- The mix of distributed energy resources (DERs) that is intended to be used to serve a given substation’s load must reduce particulate matter (PM) and nitrogen oxide (NOx) emissions compared to a Tier 2 diesel engine by at least 90 percent;
- The mix of DERs that is intended be used to serve a given substation’s load must achieve lifecycle GHG emissions equivalent to, or less than, emissions from the current grid mix at the time of contract execution. “Current grid mix” will be calculated as the million metric tons of carbon dioxide-equivalent emitted per megawatt-hour (MMTCO₂eq/MWh), using California Independent System Operator reported GHG emissions and actual demand; and
- Any generation or storage technology that is included within the mix of DERs is capable of running on renewable

⁴⁰ Assigned Commissioner’s Amended Scoping Memo and Ruling, September 24, 2021.

⁴¹ PG&E-001 at 4-13 to 4-14.

fuels, as confirmed by manufacturer certification.

PG&E stated that this emission standard would allow multi-season solutions that transition to cleaner solutions and would enable the use of teams of technologies that cannot individually provide all of the technical requirements set forth in D.21-01-018. PG&E also stated that it would also test and demonstrate experimental solutions for a single-season solution, approximate the associated emissions reductions, and determine the solution's potential for deployment over multiple years.⁴² PG&E states:

This Emission Performance Standard would only apply to the sources of generation intended to be used during the normal course of powering a substation microgrid. It would not apply to diesel backup generators that PG&E utilizes solely as a secondary source of power for the substation in cases where the primary DERs do not operate as intended. Applying the Emission Performance Standard in this manner would allow PG&E to test and demonstrate experimental multi-season solutions without jeopardizing the fundamental objective of keeping the lights on.⁴³

PG&E then submitted supplemental testimony that provided additional context and clarifications to its Proposed Emissions Performance Standard for multi-season solutions. PG&E proposed a methodology, based on GHG emissions calculations on data from California's Low Carbon Fuel Standard, to be used to calculate the full lifecycle emissions for the mix of technologies and fuels that are bid into any future substation request for offers.⁴⁴ Based on the foregoing, PG&E's proposed framework includes an emissions performance

⁴² *Id.* at 4-14.

⁴³ *Id.*

⁴⁴ PG&E-002 at 4-2 to 4-13.

standard for any multi-season microgrid solution for substation generation used to mitigate PSPS outages as:

- The mix of DERs that is intended to be used to serve a given substation's load must reduce particulate matter and nitrogen oxide emissions compared to a Tier 2 diesel engine by at least 90 percent;
- The mix of DERs that is intended to be used to serve a given substation's load must achieve lifecycle GHG emissions equivalent to, or less than, emissions from the current grid mix at the time of contract execution;⁴⁵
- Any generation or storage technology that is included within the mix of DERs is capable of running on renewable fuels, as confirmed by manufacturer certification; and
- A multi-season substation microgrid solution must be fully renewable in its completed phase.

5.2. Parties' Positions

Cal Advocates asserts that PG&E's proposed emission standards for substation microgrids are not reasonable.⁴⁶ Cal Advocates asserts that: (1) PG&E should not use compliance filings to track emissions reductions; (2) PG&E should not use average carbon intensity values because the result is misleading; and (3) PG&E's proposed use of negative carbon intensity is unreasonable because it will hinder the Commission's goal to support renewable microgrids.⁴⁷ SBUA also objected to PG&E's proposed emissions standards.⁴⁸

For its part, TURN recommends that actual emissions during PSPS events should be tracked and reported to the Commission to ensure they are consistent

⁴⁵ Current grid mix will be calculated utilizing the California carbon intensity provided by the CARB's Low Carbon Fuel Standard.

⁴⁶ PAO-001 at 2-3.

⁴⁷ *Id.* at 2-9.

⁴⁸ SBUA-001 at 10 to 11.

with PG&E's forecast.⁴⁹ TURN also recommends that any microgrid project characterized as "renewable" must satisfy rules governing eligibility under the Renewable Portfolio Standard (RPS) program; and that any generation using "green" or "renewable" hydrogen should be produced exclusively from RPS-eligible resources.⁵⁰ CESA generally supports PG&E's proposed emissions standards, but points out that there is no clean requirement from PG&E to solely use renewable generation.⁵¹

Peterson Power cautions against excluding existing resources that currently help mitigate PSPS outages. For example, Peterson Power argues that PG&E's emissions standard that would exclude most, if not all, technologies that are currently available to mitigate PSPS events.⁵² Peterson Power also asserts that experience with PSPS events show that Californians are better served by focusing on currently available, cost-effective technologies that can mitigate the effects of the extended outage PSPS events can cause.⁵³ Finally, Peterson Power asserts that the emissions standard PG&E proposes would frustrate PG&E's ability to provide substation solutions.⁵⁴

5.3. Discussion

In D.21-01-018, we adopted an Interim Approach to mitigate public health impacts from localized pollutants and GHG emission pollution applicable to

⁴⁹ *Id.* at 13.

⁵⁰ TURN Opening Brief at 3.

⁵¹ CESA-001 at 10.

⁵² PP-001 at 1 to 2.

⁵³ *Id.* at 6 to 9.

⁵⁴ *Ibid.*

substation microgrids generation used to mitigate PSPS events.⁵⁵ In D.21-01-018, our emissions standards required that generation contracted for more than one year must reduce PM and NOx emissions, compared to a Tier 2 diesel engine, by at least 90 percent.⁵⁶ Additionally, we required that clean substation pilot projects must achieve at least a 90 percent reduction in PM and NOx emissions relative to a Tier 2 diesel generator and GHG emissions no higher than the current grid mix.⁵⁷ We also required that any completed project must be a fully renewable microgrid.⁵⁸

We find that PG&E's proposed emissions standards largely follow the rules we adopted in D.21-01-018 and are therefore, reasonable. PG&E's proposed emissions standards supersede D.21-01-018's Interim Approach for tracking emissions. We make some modification to PG&E's emissions standards based on TURN's recommendations. We discuss our reasoning below.

First, PG&E's proposed emissions standards require a clean substation microgrid to significantly reduce criteria air pollutants when compared to diesel generation, produce grid equivalent GHG emissions or fewer in the near term, and operate on fully renewable generation. PG&E states it will require that "all multi-season substation microgrid projects [to be] fully renewable in their completed phase, relying on the [California Energy Commission's] highly developed definitions for what qualifies as renewable in California for this purpose."⁵⁹ We find that these emissions performance standards comply with

⁵⁵ D.21-01-018, Appendix A.

⁵⁶ *Id.* at Appendix A at A-3.

⁵⁷ *Id.* at Appendix A, A-5.

⁵⁸ *Ibid.*

⁵⁹ PG&E Opening Brief at 31.

our objectives to reduce GHG emission and air pollution while maintain grid continuity for electric customers.

Second, we agree with TURN⁶⁰ that PG&E should track and report actual emissions by each microgrid unit during both PSPS events and outside of PSPS events over the course of the year. For its part, PG&E states an “apples-to-apples” comparison of total actual and forecasted emissions may not be possible; since forecasts of emissions necessarily make standardized assumptions about the frequency and duration of outages in the future in order to compare different offered solutions using the same criteria.⁶¹ Given both TURN and PG&E’s considerations, we direct PG&E to track and report actual emissions by each microgrid unit during both PSPS events and outside PSPS events over the course of the year, and submit the results of this reporting in a yearly compliance filing to the Commission’s Energy Division. This filing may be combined with any other air emissions-related compliance filing related to the same microgrids. In this compliance filing, PG&E shall report the actual emissions of multi-season microgrids compared to the forecasts initially used to justify compliance with the emissions standards, using the best data available to forecast the frequency and duration of outages. PG&E shall also forecast and quantify the expected annual operations and emissions of any new application seeking approval of a specific project. This will enable the Commission and stakeholders to assess the potential for actual emissions as accurately as possible.⁶²

Third, when implementing this emissions performance standard, we direct PG&E to prioritize Tier 4 generators and the use of biodiesel, or other cleaner

⁶⁰ TURN Opening Brief at 8.

⁶¹ PG&E Reply Brief at 16.

⁶² TURN Opening Brief at 8; *see also* PG&E Reply Brief at 16-17.

fuels, to the extent that these cleaner fuels are available. While PG&E asks us not to mandate the use of Tier 4 diesel generators because of scarcity in the market for these generators,⁶³ we agree with TURN⁶⁴ and Peterson Power⁶⁵ that PG&E should – to the extent practicable, given our objective to keep the lights on – ensure that emissions from a microgrid do not exceed the emissions that would have otherwise occurred if a Tier 4 diesel generator were used to mitigate the PSPS event. In this way, we strive to push the market to develop and deploy clean, backup generation.

Finally, to ensure GHG emissions are reduced, we are persuaded by Cal Advocates that the carbon intensity should be calculated to account for the fuel use and dispatch characteristics needed to serve the actual load shape at a given substation rather than assuming full power operation for the entire event.⁶⁶ Additionally, PG&E should calculate emissions from fuels based on the fuel-specific Low Carbon Fuel Standard emission pathway, rather than averages. Thus, we direct PG&E to calculate the carbon intensity for certain renewable natural gas-fueled resources, such as biogas resources,⁶⁷ using the individual fuel pathway emissions factors developed by the California Air Resources Board. This approach will reinforce our objective to transition to cleaner sources of backup generation. TURN⁶⁸ and PG&E⁶⁹ support this approach as well. As

⁶³ PG&E-005 at 4-1 to 4-2.

⁶⁴ *Id.* at 9.

⁶⁵ Peterson Power Reply Brief at 4.

⁶⁶ Cal Advocates Opening Brief at 26-27.

⁶⁷ Biogas resources refers to dairy manure, landfill gas, organic waste, and wastewater.

⁶⁸ TURN Reply Brief at 2.

⁶⁹ PG&E Reply Brief at 3.

Cal Advocates⁷⁰ states, this approach will widen the pathway for renewable fuel technologies to serve as the backup power source for permanent substation microgrid solutions.

6. Is PG&E's Proposed Framework Compliant with D.21-01-018 Requirements to Transition to Clean, Backup Power?

Consistent with the Scoping Memo and Ruling Issue #3,⁷¹ parties discussed whether PG&E's Proposed Framework complies with D.21-01-018's requirements to transition to cleaner backup power.

6.1. PG&E's Proposal

PG&E states that clean backup power generation must comply the parameters set forth in D.21-01-018. PG&E's proposal largely relies on D.21-01-018's guidelines for transition to clean backup power, including strengthening the emissions performance standards of backup generation.⁷² PG&E states it has been actively seeking alternatives to mobile diesel generators for its substation microgrids since it began its Distributed Generation Enabled Microgrid Services (DGEMS) Program in 2019.⁷³

Under its proposal, PG&E plans to procure a clean, multi-season microgrid substation solution rather than continue to use temporary generation.⁷⁴ PG&E states this will involve utilizing both demand-side and supply side resources.⁷⁵ PG&E states it is committed to enabling an array of DERs to participate in PSPS

⁷⁰ *Id.*

⁷¹ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

⁷² PG&E Reply Brief at 20.

⁷³ *Id.*

⁷⁴ *Ibid.*

⁷⁵ PG&E Opening Brief at 35-36

mitigation at substations; and has a goal to establish utility capability to operate clean DERs for PSPS microgrids to reduce reliance on diesel generation by 2025.⁷⁶ In order to bring these technologies to scale, and drive the costs down, PG&E states broad stakeholder engagement is required to innovate this technology area.⁷⁷

6.2. Parties' Positions

TURN recommends that any renewable microgrid fuel should satisfy the RPS eligibility requirements.⁷⁸ TURN argues that the use of biomethane for permanent projects could involve fuel that is not compliant with RPS eligibility rules.⁷⁹ Thus, TURN recommends that PG&E follow the RPS eligibility rules for biomethane, and any other fuel characterized as renewable, for a clean microgrid substation.⁸⁰

For its part, Cal Advocates asserts that PG&E's Proposed Framework and approach to transition to cleaner backup power is not compliant with D.21-01-018. Cal Advocates argues that PG&E should be directed to procure fully renewable microgrid projects.⁸¹

Enchanted Rock argues that the Commission should direct PG&E to utilize a cost-effectiveness criteria so clean alternatives are not unreasonably disadvantaged by being considered only for the same use case as a diesel

⁷⁶ *Id.*

⁷⁷ *Ibid.*

⁷⁸ TURN-001 at 15.

⁷⁹ *Id.*

⁸⁰ *Ibid.*

⁸¹ PAO-001 2-2 and 2-4.

engine.⁸² Enchanted Rock asserts that any cost comparison with diesel technology needs to consider the offsetting revenues and benefits. Enchanted Rock states a clean microgrid could provide additional run-hours for grid services, like Demand Response or Resource Adequacy.⁸³

6.3. Discussion

Overall, we find that PG&E's proposal to transition to fully clean backup power generation is compliant with D.21-01-018's mandates. We acknowledge that this is, indeed, a new market area and requires a public-private partnership to spur market innovation. Therefore, we adopt PG&E's approach, with modification, to spur this market innovation so that, by 2025 or sooner, clean backup power generation is deployable at scale. Going forward, the parameters set forth in this decision should drive investment and deployment in clean backup generation technology. The approach PG&E shall use to procure and deploy clean backup power can be summarized into the following elements:

- Conduct a baseline assessment to:
 - Understand what opportunities can be leveraged in the near, mid, and long-term;
 - Inform a supply-side and/or demand-side strategy; and
 - Identify programmatic opportunities and gaps.
- Expand the renewable technology development and operationalization for renewable backup generation to:
 - Leverage resources that reduce the reliance on diesel generation;
 - Develop operational engineering, standards, and technologies;

⁸² PAO-001 at 5-6.

⁸³ *Ibid.*

- Develop control requirements and technologies;
- Evaluate and foster development of cleaner generation and storage technologies; and
- Pilot projects.
- Leverage the Commission’s policy objectives for obtaining cost-effective renewable backup generation technologies to:
 - Develop a market model; and
 - Improve market innovation and coordination.
- Assess and, where appropriate, support market opportunities for value and incorporate any value of resilience methodologies or metrics; and
- Report tracking and reporting progress.

If, and when, PG&E files a future application for a clean microgrid substation, PG&E shall inform the Commission and stakeholders about its efforts to satisfy the procurement of clean fuel by discussing the elements above.

Additionally, we adopt TURN’s recommendation that any forthcoming renewable resource satisfy the rules governing resource eligibility under the RPS program. Therefore, we direct PG&E – when it solicits offers from the market for clean substation microgrid solutions – to demonstrate that the resource can satisfy the rules governing eligibility under the RPS program. PG&E shall make this showing through the application process, which we discuss in detail later in this decision. We agree with TURN that any generation using “green” or “renewable” hydrogen should be produced exclusively from RPS-eligible resources.⁸⁴ In this way, we ensure that PG&E’s launch of this program supports environmentally preferable resources that ultimately yield net zero emissions.

⁸⁴ TURN Opening Brief at 18-19.

This approach will support the State of California's efforts to test, pilot, and deploy clean backup power solutions at scale.

7. Is PG&E's Proposed Framework for an Alternatives Analysis Reasonable?

Consistent with the Scoping Memo and Ruling Issues #5 and #9,⁸⁵ parties discussed whether PG&E's Proposed Framework illustrates a reasonable Alternatives Analysis for considering a substation microgrid solution against other PSPS mitigation alternatives, including regional mitigations for multiple substations. We discuss the parties' positions, below.

7.1. PG&E's Proposal

For its alternatives analysis, PG&E discusses an array of grid-based and generation-based PSPS mitigation solutions before considering investment into a clean substation microgrid. The grid-based mitigation solutions include: (1) transmission line repairs; (2) transmission line switching; (3) transmission right of way expansion; (4) targeted fall-in tree removal; (5) rebuilding of transmission lines; (6) relocating transmission lines underground; and (7) transmission system expansion.⁸⁶ Next, the generation-based mitigation solutions include: (a) distribution-level microgrids (*i.e.*, Resilience Zone or Main-Street Microgrids), which involve islanding or all of a single distribution feeder; and (b) backup power that supports individual critical customers to ensure community continuity during broader outages.⁸⁷ PG&E also states that its WMP and PSPS mitigation efforts include consideration of regional solutions to

⁸⁵ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

⁸⁶ PG&E-001 at 3-4 through 3-6.

⁸⁷ *Id.*

PSPS-induced outages, distribution-level microgrids, and backup power support for individual customers to preserve social continuity.⁸⁸

PG&E proposes a three-step Alternatives Analysis process. Step 1 incorporates committed and planned investment projects in the form of planning scenarios to gain a broader view of future PSPS risks over the 3-, 5-, and 10-year planning horizons.⁸⁹ Step 2 develops a 10-year lookback data set for each planning scenario, and then applies the substation site selection criteria to identify substations that require incremental PSPS mitigation.⁹⁰ In Step 3, PG&E will conduct a substation-specific assessment to assess whether a generation based microgrid solution is the preferred option relative to any other grid-based solution not currently in PG&E's investment plan and relative to any other alternative generation-based solution.⁹¹

Where PG&E cannot find an alternative, more cost-effective solution, PG&E proposes to invest in a substation-level microgrid to mitigate PSPS risk.⁹² In this instance, PG&E proposes to pursue a single-season and/or multi-year microgrid as a solution.⁹³

7.2. Parties' Positions

TURN raises several concerns. TURN asserts that: (1) PG&E's framework does not provide sufficient transparency into the costs of wildfire mitigation efforts; (2) indirectly impacted substations should not be considered for clean

⁸⁸ PG&E-001 at 1-2, Footnote 3.

⁸⁹ TURN Opening Brief at 47-48.

⁹⁰ *Id.*

⁹¹ *Ibid.*

⁹² PG&E-001 at 3-6.

⁹³ *Id.* at 3-9.

microgrid deployment; and (3) substations with medical baseline customers should be prioritized for clean microgrid deployment.⁹⁴

Generally, SBUA supports PG&E's alternatives analysis.⁹⁵ SBUA supports PG&E's strategy to not implement temporary generation in locations in which a more permanent transmission or distribution solution can be implemented within that same year.⁹⁶

Enchanted Rock recommends that PG&E should evaluate the capacity value that can be provided by permanent substation and distribution microgrids over the expected life of the asset.⁹⁷ Enchanted Rock asserts that the consideration of capacity value, in addition to PSPS mitigation value, will ultimately enable a broader set of viable permanent microgrids.⁹⁸

Finally, Cal Advocates argues that PG&E's alternatives analysis is incomplete.⁹⁹ Cal Advocates asserts that the Commission should require PG&E to provide the results, and any proposals for permanent substations within subsequent applications.¹⁰⁰

7.3. Discussion

We adopt PG&E's alternatives analysis approach. In short, for any potential project, this alternatives analysis will consider existing, planned, and potential future alternative mitigations before moving forward. Specifically, we

⁹⁴ TURN-001 at 4 to 7.

⁹⁵ *Id.* at 16 to 17.

⁹⁶ *Ibid.*

⁹⁷ ER-001 at 4 to 5.

⁹⁸ *Id.* at 5.

⁹⁹ PAO-001 at 4-5.

¹⁰⁰ *Id.*

find that it is reasonable for PG&E to consider: (1) planned grid investments; (2) the needed duration of PSPS mitigation; and (3) the not-yet-planned alternatives to substation microgrids. It is also reasonable for PG&E to consider projects that provide additional grid services, such as resource adequacy. However, we agree with TURN that indirectly impacted substations require additional review and should be considered outside the scope of this proceeding.

For reference, PG&E distinguishes between two types of PSPS events on its transmission system – direct and indirect. Both occur because certain transmission lines must be shut down based on various PSPS criteria when wildfire risk is high. A direct event occurs where these transmission line shutoffs cut off a substation from the larger grid. An indirect event occurs where these transmission line shutoffs require regional load drop, even though there is still a safe electrical connection between the affected substations and the larger grid.

We agree with TURN that indirect PSPS impacts may not be fully addressed in the alternatives analysis. Indeed, indirect PSPS impacts are more complex than direct impacts. Since these impacts are more complex, the HLA analysis (*see above*) may be a less reliable picture of their future extent and likelihood. Additionally, because indirectly impacted substations have a safe electrical connection to the larger grid during PSPS events, substation microgrids may not be an appropriate means for mitigating these impacts. Thus, this framework should apply only to substations that face largely direct PSPS impacts.

That said, we believe that the Commission should ascertain the complexity of indirect PSPS impacts more closely. Therefore, we direct PG&E to submit an application in 2023, specifically addressing indirect PSPS impacts. In this application, PG&E should use illustrative site examples, including resiliency

initiatives that are underway on California's North Coast.¹⁰¹ A significant number of substations currently facing indirect PSPS impacts are on California's North Coast/North Bay. In this application, PG&E should draw upon its experience with this particular location when addressing solutions for indirect PSPS impacts on the North Coast.

8. Is PG&E's Substation Microgrid Procurement Strategy Reasonable?

Consistent with the Scoping Memo and Ruling Issue #6,¹⁰² parties discussed whether PG&E's Proposed Procurement Framework is reasonable. We discuss the parties' positions, below.

8.1. PG&E's Proposal

Upon identifying any substation(s) in need of a microgrid PSPS mitigation solution, PG&E states it will launch two requests for offers (RFOs) to solicit bids for the necessary resources to energize safe-to-energize substation load at each identified substation. One RFO will solicit for single-season solutions and the other RFO will solicit for multi-season solutions.¹⁰³

For its single-season solutions, PG&E proposes an expedited procurement process. PG&E states it will request that each offer be specific to the identified substation so it can evaluate an optimal solution for the specific substation's need.¹⁰⁴ If a need arises that is for more than a single fire season, PG&E will look to a multi-season RFO.¹⁰⁵

¹⁰¹ PG&E Reply Brief at 26.

¹⁰² Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

¹⁰³ PG&E-005 at 5-1 through 5-3.

¹⁰⁴ *Id.* at 5-2.

¹⁰⁵ *Ibid.*

Similar to the single-season RFO, PG&E will request that multi-season offers be specific to the identified substation so PG&E can evaluate the optimal solution for each substation.¹⁰⁶ For its multi-season solutions, PG&E states that these solutions may require more commercial time review, contract review, regulatory approval, and project development and therefore, may not be able to be deployed in time for the first fire season following the RFO.¹⁰⁷

PG&E states that prior to launching the multi-season solution RFO, PG&E will collaborate with the local community and agencies served by the specific substation to solicit input and consult on the appropriate solution given the duration of need.¹⁰⁸ After soliciting input and feedback, PG&E will consider community input in designing any subsequent multi-season solution RFO.¹⁰⁹

When evaluating the proposals, PG&E states it will evaluate whether the proposed projects meet its technical, operational, and performance eligibility requirements.¹¹⁰ Additionally, for multi-season solutions, PG&E will consider such factors as Resource Adequacy, incremental Integrated Resource Planning resources, and RPS energy.¹¹¹ PG&E states it will consider utility-owned offers.¹¹²

PG&E proposes a cost control mechanism as part of its procurement framework. Under this mechanism, PG&E states that any contract executed

¹⁰⁶ *Id.* at 5-3.

¹⁰⁷ *Id.* at 5-3, Footnote 1.

¹⁰⁸ *Id.* at 5-4.

¹⁰⁹ *Ibid.*

¹¹⁰ *Id.* at 5-6 to 5-9.

¹¹¹ *Id.* at 5-10 to 5-11.

¹¹² *Id.* at 5-15.

under the Proposed Framework would be at a price that is less than twice the then-current cost of using Tier 4 diesel generation to provide the same level of PSPS mitigation support at the given location.¹¹³ PG&E recommends that any microgrid substation solution at or below this price benchmark should be submitted for Commission review under a Tier 2 Advice Letter.¹¹⁴ If the price of the solution exceeds the same benchmark, PG&E states it could submit the project for review through a Tier 3 Advice Letter.¹¹⁵

8.2. Parties' Positions

TURN offers several recommendations for the procurement of utility owned resources.¹¹⁶ TURN recommends that utility-owned generation should be allowed if two conditions are met. With respect to the first condition, TURN recommends that: utility owned generation should only be allowed if it is less expensive than viable third-party offers; including all costs to ratepayers such as financing costs and all forecasted capital and operating and maintenance costs.¹¹⁷ TURN states that this analysis should clearly identify how any tax credits for clean generation would be monetized and passed through to customers.

Next, TURN recommends that the second condition require that if utility forecasts of operating and maintenance and capital expenditures are exceeded,

¹¹³ *Id.* at 5-15 to 5-16.

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*

¹¹⁶ TURN-001 at 17 to 18.

¹¹⁷ *Id.* at 18 to 19.

they may not be requested from ratepayers.¹¹⁸ TURN argues that this is necessary to ensure a level playing field with third-party owned resources.¹¹⁹

CESA supports TURN's recommendation to limit the operation and maintenance and capital expenditures that can be recovered from ratepayers to only forecasted amounts.¹²⁰ CESA supports PG&E's proposed procurement framework for single and multi-season solutions.¹²¹ CESA also supports the expedited RFO schedule for single-season solutions.¹²²

Enchanted Rock recommends that the Commission direct PG&E to re-evaluate its solicitation process for microgrids to facilitate the transition to cost-effective, cleaner alternatives than mobile diesel generators.¹²³

Cal Advocates argues that PG&E should include grid benefits in the absence of PSPS mitigation as a qualitative evaluation factor for multi-season solutions.¹²⁴ Cal Advocates argues that this mitigates the risk of stranded assets so the resource still provides a service to the grid if PSPS poses a risk.¹²⁵ SBUA states that the Commission should incentivize contracting opportunities for small businesses relevant to PG&E's plan.¹²⁶

¹¹⁸ *Ibid.*

¹¹⁹ *Ibid.*

¹²⁰ CESA-002 at 4.

¹²¹ CESA-001 at 11.

¹²² *Id.*

¹²³ ER-001 at 6.

¹²⁴ PAO-001 at 5-3.

¹²⁵ PAO-001 at 5-5.

¹²⁶ SBUA-001 at 19 to 20.

8.3. Discussion

We find PG&E's proposed procurement strategy reasonable. In short, the procurement strategy shall include the following procedure: (1) a process to solicit the necessary substation microgrid solution; (2) the evaluation for producing a shortlist of offers for negotiations, that will be consistent with the procurement goals set forth in the request for offers, including the parameters relating back to a single season and multi-season RFO; and (3) seeking regulatory approval for cost recovery for any resulting agreements. The procurement of a single-season and multi-season resource should include a transparent procurement process that offers the lowest cost, but highest benefit to ratepayers.

Additionally, we adopt TURN's recommendation that any utility-owned generation be approved only if it is less expensive than third-party alternatives.¹²⁷ In adopting this requirement, we do not discourage PG&E from considering utility projects as part of its multi-season RFO because a utility-owned project could provide cost benefits to ratepayers. We agree, however, with TURN that all projects should have a level playing field for consideration and the project that provides the most benefits to ratepayers should be the project of choice. Thus, we largely adopt TURN's conditions for selecting a utility-owned generation project.

First, PG&E must demonstrate that the selected utility-owned generation must be less expensive than viable, third-party power purchase agreement offers. This demonstration shall include all costs to ratepayers (*i.e.*, financing costs) along with forecast capital investments, capital additions, and operations and

¹²⁷ TURN Opening Brief at 15.

maintenance expenses.¹²⁸ When submitting a project for regulatory approval, PG&E shall clearly identify how any tax credits or incentives available for clean generation would be monetized and passed through to customers.¹²⁹

Second, PG&E shall provide long-term forecasts of capital and operation and maintenance expenditures for any utility-owned generation project.¹³⁰ These forecasts shall include the costs incorporated into PG&E's request for offer evaluation of the utility owned generation project. If PG&E chooses to request additional cost recovery beyond these initial forecasts, PG&E must be prepared to defend the additional costs before the Commission and stakeholders. This balances TURN's request that any costs in excess of forecasts should not be recoverable in retail rates, against PG&E's arguments that these projects inherently have variable costs that may exceed forecasts, depending on the number of PSPS events or other factors.¹³¹ We acknowledge that comparing utility-owned generation to third-party projects is not simple as both projects have very different timelines and considerations – especially control over land availability.¹³² Still, we believe this process is in ratepayers' best interests.

Third, CESA¹³³ and Cal Advocates¹³⁴ suggest that PG&E include in its evaluation the value of blue-sky products – products that are capable or likely to provide energy or reliability products during normal grid operations. While

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.* at 16.

¹³¹ *Ibid.*

¹³² PG&E-005 at 5-5.

¹³³ CESA Opening Brief at 4-5.

¹³⁴ Cal Advocates Opening Brief at 45-46.

PG&E's procurement strategy proposes considering a quantitative evaluation of blue-sky products, CESA and Cal Advocates suggest these products also be evaluated for qualitative benefits. PG&E,¹³⁵ for its part, does not object to conducting a qualitative review of blue-sky products. Given the lack of controversy around this, we direct PG&E to include a quantitative and qualitative review of blue-sky products as part of its evaluation of substation microgrid solutions.

Finally, the Joint CCAs request that the Commission direct PG&E to consult with community choice aggregators regarding multi-season/permanent substation microgrid solutions and communicate the use of substation microgrid solutions to the Joint CCAs and their customers.¹³⁶ We direct PG&E to conduct such engagement and notice with the impacted community choice aggregators.¹³⁷

Taken collectively, this procurement strategy strikes the right balance of selecting the project of choice while ensuring lights stay on.

9. Is PG&E's Cost Allocation and Rate Design Proposal Reasonable?

Consistent with the Scoping Memo and Ruling Issue #7,¹³⁸ parties discussed whether PG&E's cost allocation and rate design proposal is reasonable. We discuss the parties' positions, and PG&E's response, below.

¹³⁵ PG&E Opening Brief at 3-4.

¹³⁶ Joint CCAs Opening Brief at 11-12.

¹³⁷ We note that the framework adopted in this decision does not alter customer choice and protections for CCA customers.

¹³⁸ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

9.1. PG&E's Proposal

In its testimony, PG&E requests that the Commission approve its cost recovery and rate design proposals for utility-owned and third-party distributed energy resources, microgrid services, and make-ready investments. For cost recovery, PG&E requests the Commission approve the establishment of three new subaccounts in PG&E's existing Microgrids Balancing Account (MGBA).¹³⁹ These MGBA new subaccounts would record any revenue requirements authorized via future advice letter submissions for third-party contracts, make-ready investments, and utility-owned DERs that are selected as substation-level microgrid solutions for PSPS mitigation.

PG&E's revenue allocation and rate design proposal would allow PG&E to recover the authorized costs for the microgrid resources and investments through distribution rates.¹⁴⁰ PG&E states that these costs will include offsetting credits for the value of any blue-sky products provided to PG&E through PSPS mitigation contracts.¹⁴¹ We describe PG&E's rate-design and cost recovery proposal, below.

For its rate-design proposal, PG&E proposes to recover costs of microgrid DERs, microgrid services, and utility-owned make-ready investments through distribution rates.¹⁴² PG&E states it will offset benefits of these DERs credited against the costs.¹⁴³ PG&E contends that its rate-design proposal is reasonable because these resiliency services will enable power to remain on for the public

¹³⁹ PG&E-001 at 6-1 through 6-6.

¹⁴⁰ *Id.* at 6-7 through 6-10.

¹⁴¹ *Ibid.*

¹⁴² *Ibid.*

¹⁴³ *Ibid.*

during PSPS events or other grid outage events.¹⁴⁴ PG&E also states that these services provide enhanced resiliency and reliability for customers.¹⁴⁵ PG&E recommends that any future revisions to its cost recovery and rate-design proposal be handled through a Tier 3 Advice Letter.¹⁴⁶

PG&E proposes to solicit third-party contracts for the purposes of purchasing DERs and any associated microgrid services.¹⁴⁷ For recording these third-party contract costs, PG&E proposes to establish a new two-way Third-Party Contract Subaccount in the existing MGBA.¹⁴⁸ PG&E states that these costs would be passed through to customers for the services the third-party contract provides.¹⁴⁹ PG&E states that any value received by PG&E for contracts that have blue-sky products will be recorded as a credit to the new third-party contracts subaccount to offset contract costs.¹⁵⁰ PG&E states the net balance recorded to the third-party contracts subaccount of the MGBA will be transferred annually to the Distribution Revenue Adjustment Mechanism (DRAM) for recovery in distribution rates through the Annual Electric True-Up advice letter process.¹⁵¹

For its Make-Ready costs, PG&E proposes to establish a new one-way Make-Ready Subaccount within the existing MGBA. This new subaccount

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid.*

¹⁴⁶ *Ibid.*

¹⁴⁷ *Id.* at 6-2.

¹⁴⁸ *Ibid.*

¹⁴⁹ *Ibid.*

¹⁵⁰ *Ibid.*

¹⁵¹ *Ibid.*

would record the expenses and capital revenue requirement associated with PG&E's work to make its substations ready to utilize local generation to island the substation-level microgrid during PSPS events.¹⁵² PG&E states it will present a forecast of the total expenses and capital expenditures for this activity in a Tier 2 or Tier 3 Advice Letter.¹⁵³ Once the advice letter is approved, PG&E proposes that the Make-Ready Subaccount will track and record the difference between the actual expenses and capital requirement *with* actual capital expenditures and the total adopted revenue requirement, up to the adopted amounts.¹⁵⁴ PG&E states if there is an overcollection at the end of the coverage period, PG&E will refund the excess back to customers through distribution rates.¹⁵⁵

Additionally, PG&E also proposes creating another new Make-Ready Subaccount. This other subaccount would be a one-way balancing account to track and record the actual costs related to the Make-Ready Infrastructure to implement any microgrid substation contemplated under the Proposed Framework.¹⁵⁶ PG&E states it will file a Tier 2 or Tier 3 Advice Letter with forecasts for the costs of this work.¹⁵⁷

For utility-owned generation, PG&E proposes to create another new one-way utility-owned generation subaccount within the MGBA. Like the others, this subaccount would enable PG&E to recover expenses and capital

¹⁵² *Id.* at 6-3.

¹⁵³ *Id.* at 6-4.

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ *Id.* at 6-5.

¹⁵⁷ *Ibid.*

revenue requirements for utility-owned generation DERs that primarily serve powering microgrids for PSPS mitigation.¹⁵⁸ PG&E proposes to present a forecast of utility-owned DERs costs and capital revenue requirements in a Tier 3 Advice Letter.¹⁵⁹ PG&E states this one-way utility-owned generation subaccount will track and record the difference between the actual expenses incurred and the capital revenue requirement associated with the actual capital expenditures *and* the total adopted revenue requirement up to the adopted cap.¹⁶⁰ PG&E states if the amounts exceed PG&E's actual costs, PG&E will refund the excess to customers through distribution rates.¹⁶¹

9.2. Parties' Positions

TURN recommends that costs incurred under PG&E's Proposed Framework should be collected via the Cost Allocation Mechanism (CAM).¹⁶² TURN argues that the CAM is commonly used to assign the net costs and benefits of certain generation assets to all customers.¹⁶³ TURN states this rate component ensures non-bypassability and fair collection of costs from both bundled and departing load customers.¹⁶⁴ TURN also states that the CAM is more reasonable than the use of DRAM, and TURN also asserts that it is a fair method of cost allocation amongst customer classes.¹⁶⁵

¹⁵⁸ *Id.* at 6-6.

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

¹⁶¹ *Id.* at 6-7.

¹⁶² TURN-001 at 20.

¹⁶³ *Ibid.*

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*

Cal Advocates argues that the Commission should adopt a cost control mechanism for permanent substation microgrids equal to less than two times the cost of operating diesel generation.¹⁶⁶ Cal Advocates also argues that PG&E should not be able to record temporary generation through a two-way balancing account and that PG&E should continue recording temporary generation in its existing Microgrids Memorandum Account (MGMA).¹⁶⁷ In short, this incentivizes PG&E to keep costs under control because PG&E would not be able to recover costs above its approved budget.

Cal Advocates also contends that PG&E should continue recording Make-Ready Costs for temporary generation in its MGMA.¹⁶⁸ Recording these costs in a one-way balancing account is consistent with D.20-06-017, which initially authorized use of single-season, temporary generation solutions. Cal Advocates also states that PG&E should be required to record multi-season or permanent substation microgrid projects in a one-way balancing account.¹⁶⁹ Again, this approach incentivizes PG&E to keep costs under control because PG&E would not be able to recover costs above its approved budget. Cal Advocates also recommends that the Commission should consider a cost allocation methodology based on the allocation of wildfire mitigation costs adopted in D.21-11-016.¹⁷⁰ This approach would equitably distribute costs across all customer classes, rather than placing more of a burden on distribution rates. Throughout its testimony, Cal Advocates argues that all subsequent requests for

¹⁶⁶ PAO-002 at 6.

¹⁶⁷ *Ibid.*

¹⁶⁸ *Id.* at 6-6.

¹⁶⁹ *Id.* at 6-7.

¹⁷⁰ PAO-002 at 16 to 18.

permanent substation microgrids should be submitted through the application process, and not through an advice letter process.¹⁷¹ This approach ensures adequate stakeholder and Commission scrutiny.

SBUA states that PG&E's cost recovery framework is not reasonable¹⁷² and recommends that PG&E's Proposed Framework should provide more contracting opportunities for local small businesses.¹⁷³

9.3. Discussion

We agree with Cal Advocates that PG&E should seek approval for most of its new rates through an application, and not through an advice letter process.¹⁷⁴ The advice letter process is more appropriate for a simplified review of a utility request where the Commission has already provided sufficient guidance to render the Energy Division disposition of the advice letter to be ministerial in nature. If a clean microgrid substation project is proposed in the future by PG&E, an application is the proper approval mechanism given the important factual and policy questions it will likely raise.

General Order 96-B governs advice letters and information-only filings submitted to the Commission and is intended to provide a "quick and simplified review of the types of utility requests that are expected neither to be controversial nor raise important policy questions."¹⁷⁵ We agree with Cal Advocates that future proposals of clean, multi-season substation microgrids will necessitate more time and analysis than the advice letter process provides.¹⁷⁶

¹⁷⁰ SBUA-001 at 21.

¹⁷³ *Id.* at 7 to 8.

¹⁷⁴ Cal Advocates Opening Brief at 14.

¹⁷⁵ *Id.* at 19.

¹⁷⁶ *Ibid.*

Therefore, we direct PG&E to submit an application if it pursues a clean, multi-season microgrid substation project in the future.

With respect to single-season microgrid solutions, PG&E may seek approval for their use via a Tier 2 Advice Letter given the critical need to keep the lights on to preserve community continuity.¹⁷⁷ Now, we turn to rate design and cost allocation for any future multi-season, clean microgrid projects.

With respect to the costs of make-ready utility investments and/or utility-owned generation, we agree with Cal Advocates that a one-way balancing¹⁷⁸ account is appropriate for these costs.¹⁷⁹ Thus, for costs associated with make-ready utility investments and/or utility-owned generation relating to multi-season substation microgrids, we authorize PG&E to create a new one-way sub-account within its existing MGBA.¹⁸⁰

Next, we find that it is reasonable for PG&E to record costs for third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services through a two-way balancing account. This is subject to the Commission's review of contract administration in PG&E's General Rate Case, or through a new Application. We also find that it is reasonable for PG&E to create a new two-way sub-account within its existing MGBA for costs related to third-party

¹⁷⁷ Community continuity refers to maximizing the ability to keep power on during a transmission outage where safe to do so, while ensuring just and reasonable rates.

¹⁷⁸ There are two types of balancing accounts: one-way and two-way. A one-way balancing account matches actual expenditures against authorized revenue requirement and limits recovery to the lower of actual expenditures or the amount of authorized revenue requirement. A two-way balancing account compares revenue and expenses or actual revenue to authorized revenue and allows overcollections to be refunded to ratepayers and under-collections to be recoverable through rates. See *CPUC Standard Practice Audit Manual*, available at: [2020-12-14_standard-practice-audit-manual---jan-2021_v1.pdf \(ca.gov\)](#).

¹⁷⁹ *Id.* at 40.

¹⁸⁰ *Ibid.*

contracts for multi-season Distributed Generation-Enabled Microgrid Services. While in theory, we agree with Cal Advocates that a one-way balancing account “keeps costs under control,”¹⁸¹ in this instance, the inherent variability of PSPS events and their duration will differ from assumptions used to forecast the cost that PG&E may bear under a third-party Distributed Generation Enabled Microgrid Service contract to mitigate these outages. Additionally, the structure of this type of third-party contract includes variable costs that depend on the number and duration of outages that occur at the given substation. Thus, the costs incurred by PG&E in any given year under a third-party Distributed Generation Enabled Microgrid Service contract is likely to be different than the costs of it reasonably forecast at the time of the proposing solution. Thus, the use of a one-way (capped) balancing account is suboptimal given the variability. In other words, if we adopted a one-way balancing account, the third-party contract would price in the risk of variability that could, in effect, raise the cost of the third-party contract which is precisely the outcome the parties seek to avoid. It is more reasonable to avoid this outcome by authorizing a two-way balancing account for multi-season third-party Distributed Generation-Enabled Microgrid Service contracts, while controlling the costs at the following points of oversight, through stakeholder review: (1) PG&E’s General Rate case; or (2) a new, separate Application.

With respect to procurement of a future single-season, temporary generator we direct PG&E to continue to record these costs in its existing MGMA under the contours of D.20-06-017. In D.20-06-017, we authorized the MGMA and directed PG&E to record the costs of its Temporary Generation Program in a

subaccount within the MGMA.¹⁸² In that decision, we reasoned that all recorded costs must be subject to a reasonableness review through, for example, the general rate case review or another vehicle, prior to cost recovery.¹⁸³ That reasoning applies here since these projects will only be subject to review through the Advice Letter process. We decline to adopt PG&E's request to record the costs of a single-season solution or temporary generation in a two-way balancing account because it is inconsistent with our holding in D.20-06-017. We direct PG&E to record costs for diesel generation in its existing MGMA, subject to the reasonableness review process established in D.20-06-017.

Next, we adopt Cal Advocates' recommendation that PG&E should use a cost allocation methodology that is based on the wildfire mitigation cost allocation adopted in D.21-11-016. The cost allocation methodology adopted in D.21-11-016: (1) allocates a portion of PG&E's ongoing wildfire mitigation costs using an equal percent of total revenue allocation *rather* than using distribution cost allocators; and (2) allocates costs proportionate to a customer class's total revenue allocation.¹⁸⁴ We agree with Cal Advocates that this methodology is a reasonable allocation method compared to distribution allocators, because the equal percent of total revenue would mitigate the variation of cost responsibility among customer classes.¹⁸⁵ Cal Advocates' approach reflects a cost recovery pathway that puts the least pressure on residential customers.

Additionally, in D.21-11-016, the Commission held that it was reasonable to reallocate PG&E's wildfire mitigation costs away from strict distribution cost

¹⁸² D.20-06-017 at 81.

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*

¹⁸⁵ D.20-06-017 at 52.

allocation to distribute costs more fairly to PG&E's customers.¹⁸⁶ That holding is applicable here, because this decision applies to any future clean, microgrid substation or temporary generation resource that is procured with the aim of alleviating PSPS events that are wildfire mitigation measures. Therefore, PG&E should be authorized to recover the costs of permanent substation microgrid investments based on the allocation of wildfire mitigation costs adopted in D.21-11-016.

10. Is Demand Response Reasonable for PPS Mitigation?

Consistent with the Scoping Memo and Ruling Issue #8,¹⁸⁷ parties discussed whether it is reasonable to use Demand Response programs under a single-season or multi-season microgrid. We discuss the parties' positions, and PG&E's response, below.

10.1. Parties' Positions

PG&E requests that it continue to utilize two Demand Response programs, the Base Interruptible Program (BIP) and Smart AC, initially approved in Resolution E-5164 for purposes of PPS mitigation. PG&E states that these two programs will allow it to seek opportunities to reduce load to be served by substation microgrids, and therefore, the need for generation, as part of the design of future substation microgrid projects.¹⁸⁸ Generally, CESA supports the use of Demand Response programs as a resource to mitigate PPS.¹⁸⁹

¹⁸⁶ *Id.* at 88.

¹⁸⁷ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

¹⁸⁸ PG&E Opening Brief at 70.

¹⁸⁹ CESA-001 at 13.

10.2. Discussion

No party objected to PG&E's request for continued utilization of the BIP and Smart AC, approved in Resolution E-5164. PG&E offers several reasons for requesting continued authority to use these Demand Response programs. First, PG&E states that both the BIP and Smart AC tariffs have existing language allowing PG&E to call the resource for reliability and emergency needs.¹⁹⁰

Second, PG&E states that the approval of these existing programs will result in cost savings when compared to the development of new Demand Response programs.¹⁹¹ Third, PG&E states there are no incremental costs associated with authorizing its continued use of these programs.¹⁹²

Since no party has objected to PG&E's request for continued availability of the BIP and Smart AC programs for use as part of PSPS mitigation, and given the foregoing reasons PG&E offered, we find that it is reasonable to grant PG&E authorization to continue to use the BIP and Smart AC Demand Response. Indeed, utilizing the BIP and Smart AC may support PG&E's efforts to reduce load to be served by substation microgrids, and consequently, need for costly generation.

11. Is PG&E's Proposed Framework Reasonably Consistent and Coordinated with its WMP?

Consistent with the Scoping Memo and Ruling Issue #10,¹⁹³ parties discussed whether PG&E's Proposed Framework is reasonably consistent with its WMP. We discuss the parties' positions, and PG&E's response, below.

¹⁹⁰ *Id.* at 71.

¹⁹¹ *Id.* at 72.

¹⁹² *Ibid.*

¹⁹³ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

11.1. Parties' Positions

Generally, TURN advocates for transparency and disclosure of PG&E's expenditures toward WMP initiatives and future, clean microgrid substation projects.¹⁹⁴ TURN recommends that PG&E present to the Commission, and stakeholders, the costs it has and will incur on the relevant transmission lines related to wildfire mitigation and to clean microgrid substation projects.¹⁹⁵ TURN recommends that PG&E present, in each filing seeking approval of clean microgrid procurement contracts, an accounting of wildfire mitigation costs incurred in the previous five years and a forecast for the subsequent five years on relevant transmission lines.¹⁹⁶

For its part, PG&E states it will consider whether any grid-based alternatives to a substation microgrid solution exist, even if those alternatives have not previously been identified in an approved WMP or other investment plan.¹⁹⁷ PG&E states that if a lower-cost, equally effective opportunity exists for PG&E to make an investment on a transmission line to mitigate PSPS risk below the established threshold for prioritization, PG&E would identify and be able to select that option rather than the microgrid solution.¹⁹⁸

11.2. Discussion

As discussed above, the Alternatives Analysis will evaluate whether committed and planned grid investment projects that are already identified in other proceedings have a reasonable degree of certainty that they will be carried

¹⁹⁴ TURN-001 at 4.

¹⁹⁵ *Id.* at 5.

¹⁹⁶ *Ibid.*

¹⁹⁷ PG&E-005 at 3-4.

¹⁹⁸ *Id.*

out and are likely to have a material impact on PSPS risk at one or more of the high-priority candidate substations. We agree with TURN that there should be greater transparency and coordination between the Framework we adopt here, and the WMP efforts occurring across our other regulatory proceedings.¹⁹⁹

Therefore, we direct PG&E, in each of its subsequent filings seeking Commission authorization for future clean microgrid substation projects, to include an accounting of wildfire mitigation costs incurred in the previous five years and a forecast for the subsequent five years on relevant transmission lines. We agree with TURN that this information will allow the Commission and stakeholders to assess the expenditures ratepayers are expected to incur, the potential for any avoided wildfire mitigation costs, and the relative incremental benefits of the proposed microgrid.²⁰⁰

12. Is PG&E's Proposed Framework Reasonably Consistent with, and Coordinated with, PG&E's Publicly Stated Intention to Underground 10,000 Miles of Overhead Electrical Lines?

Consistent with the Scoping Memo and Ruling Issues #10 and #11,²⁰¹ parties discussed whether PG&E's Proposed Framework is reasonably consistent and coordinated with its WMP, and its public announcement of intent to underground 10,000 miles of overhead electrical lines. We discuss the parties' positions, and PG&E's response, below.

¹⁹⁹ TURN Opening Brief at 25-26.

²⁰⁰ *Id.*

²⁰¹ Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

12.1. Parties' Positions

Cal Advocates states that PG&E's proposed new transmission switches and undergrounding are the largest drivers of PG&E's PSPS scope reduction.²⁰² Cal Advocates argues that in contrast, the temporary distribution microgrids are among the smallest drivers of PSPS scope decrease.²⁰³ Cal Advocates argues that if PG&E successfully undergrounds 10,000 miles of power lines, PG&E could significantly reduce the need for permanent substation microgrids.²⁰⁴

CESA states it believes that PG&E undergrounding effort is a reasonable approach to reduce PSPS.²⁰⁵ CESA recommends that to the extent that these plans are specified in the WMP and impacts on specific substations can be identified, undergrounding lines should be incorporated into these planning scenarios.²⁰⁶

SBUA supports PG&E's efforts to invest in undergrounding and hardening transmission infrastructure.²⁰⁷ SBUA states that safe and secure underground power infrastructure is preferable to installing numerous temporary generation solutions near substations, absent other resources like storage or solar powered microgrids.²⁰⁸ SBUA points out that it is reasonable for PG&E to invest in transmission undergrounding, rather than temporary microgrid solution.²⁰⁹

²⁰² PAO-001 at 2-7.

²⁰³ *Id.*

²⁰⁴ *Ibid.*

²⁰⁵ CESA-001 at 14.

²⁰⁶ *Id.* at 15.

²⁰⁷ *Id.*

²⁰⁸ *Id.* at 16.

²⁰⁹ *Id.* at 18.

For its part, PG&E states that its announcement regarding undergrounding is focused on overhead conductors at the distribution level that would not have a direct impact on transmission PSPS risk.²¹⁰ PG&E states, however, that the impacts of distribution line undergrounding efforts will be reflected in the results of the final framework adopted by this decision.²¹¹

12.2. Discussion

We direct PG&E to incorporate a status update on its undergrounding efforts into any subsequent filing that seeks Commission approval of a clean microgrid substation project. We agree with PG&E that undergrounding its overhead conductors at the distribution level will not have a direct impact on transmission PSPS risks.

Given that future work to underground distribution lines may affect the level of safe-to-energize load at a given distribution location, however, we direct PG&E to: (1) incorporate a status update on its undergrounding efforts into any subsequent filing that seeks Commission approval of a clean microgrid substation project; and (2) where appropriate, update the 10-year HLA annually to incorporate then-current grid asset conditions, including changes due to undergrounding to ensure that the impacts of distribution line undergrounding efforts will be reflected in the results that inform approval of a future clean microgrid substation project.

²¹⁰ PG&E-005 at 3-8.

²¹¹ *Id.* at 3-9.

13. Does PG&E's Proposed Framework Align with or Impact ESJ Communities, Including the Extent that the Proposed Framework Impacts Achievement of Any of the Commission's Nine ESJ Action Plan Goals?

Consistent with the Scoping Memo and Ruling Issue #12,²¹² parties discussed whether PG&E's Application aligns with, or impacts, ESJ communities, including the extent to which PG&E's Application impacts achievement of any of the nine goals of the Commission's ESJ Action Plan.

13.1. Parties' Positions

CESA discussed how PG&E's proposal impacts ESJ communities.²¹³ CESA contends that to the extent PG&E deploys clean solutions that reduce outage impacts in ESJ communities, this will help achieve Goal 2 of improving local air quality, by installing clean energy microgrids and reducing reliance on polluting temporary generation.²¹⁴ CESA also argues that to the extent PG&E deploys clean solutions that reduce outage impacts in ESJ communities, Goal 4 would be achieved by increasing climate resiliency by reducing outage events for these communities.²¹⁵

For its part, PG&E states it believes its proposal supports the Commission's ESJ Action Plan while still addressing customers most frequently impacted by PSPS.²¹⁶ PG&E states that its proposed emissions performance standard helps advance Goal 2 of the ESJ Action Plan by increasing investment in

²¹² Assigned Commissioner's Amended Scoping Memo and Ruling, September 24, 2021.

²¹³ CESA-001 at 15.

²¹⁴ *Id.*

²¹⁵ *Ibid.*

²¹⁶ PG&E-005 at 2-7.

clean energy resources.²¹⁷ PG&E also asserts that its proposal allows it to consider the impact of proposed projects on disadvantaged communities, workforce development, emissions performance, water and the use of biomass, and safety.²¹⁸ PG&E also asserts that its proposal supports Goal 4 of the ESJ Action Plan which seeks to increase climate resiliency. PG&E states its proposal supports Goal 5 of the ESJ Action Plan because PG&E will conduct outreach to local communities and agencies to gather input on multi-season substation microgrid solutions.²¹⁹

13.2. Discussion

On February 21, 2019, the Commission adopted the ESJ Action Plan²²⁰ which serves to expand public inclusion in Commission decision-making and improve services to targeted communities in California, specifically communities of color and/or low-income communities. The ESJ Action Plan defines ESJ as:

ESJ seeks to come to terms with, and remedy, a history of unfair treatment of communities, predominantly communities of people of color and/or low-income residents. These communities have been subjected to disproportionate impacts from one or more environmental hazards, socioeconomic burdens, or both.

The overall goals identified by the ESJ action plans include:

- **Goal 1:** Consistently integrate equity and access considerations throughout CPUC proceedings and other efforts.

²¹⁷ PG&E-005 sat 5-8.

²¹⁸ *Id.*

²¹⁹ *Id.* at 5-9.

²²⁰ CPUC Environmental and Social Justice Action Plan (February 21, 2019) Retrieval at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M263/K673/263673090.PDF>.

- **Goal 2:** Increase investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health.
- **Goal 3:** Strive to improve access to high-quality water, communications, and transportation services for ESJ communities.
- **Goal 4:** Increase climate resiliency in ESJ communities.
- **Goal 5:** Enhance outreach and public participation opportunities for ESJ communities to meaningfully participate in the CPUC's decision-making process and benefit from CPUC programs.
- **Goal 6:** Enhance enforcement to ensure safety and consumer protection for ESJ communities.
- **Goal 7:** Promote economic and workforce development opportunities in ESJ communities.
- **Goal 8:** Improve training and staff development related to ESJ issues within the CPUC's jurisdiction.
- **Goal 9:** Monitor the CPUC's ESJ efforts to evaluate how they are achieving their objectives.

ESJ communities are also identified as those where residents are predominantly communities of color or low-income, underrepresented in the policy setting or decision-making process, subject to a disproportionate impact from one or more environmental hazards, and likely to experience disparate implementation of environmental regulations and socio-economic investments in their communities. On the ground, these targeted communities typically include but are not limited to, disadvantaged communities,²²¹ all Tribal lands, and low-income households and census tracts.²²²

²²¹ Defined as the top 25 percent scoring areas from CalEnviroScreen.

²²² Defined in the ESJ Action Plan as 80% or less of area or state median income.

We find that PG&E's clean microgrid substation framework is reasonably consistent with our ESJ Action Plan and helps support achievement of our ESJ's Action Plan goals. To ensure that any future clean microgrid substation project has a positive, on the ground impact for ESJ communities, we direct PG&E to integrate our ESJ goals and efforts into future clean microgrid substation projects to ensure our collective actions improve local air quality, benefit the public health, increase climate resiliency, and provide economic benefits within the ESJ communities. This decision strives to prioritize ESJ issues and prioritize the advancement of equity and policies for ESJ communities.

Therefore, we direct PG&E, as it integrates the ESJ goals into its future clean microgrid substation planning, to discuss achievement and impact on our ESJ goals in subsequent application filings it pursues when seeking Commission approval of a proposed project.

14. Conclusion

This decision adopts a framework for substation microgrid resiliency solutions to mitigate public safety power shutoffs for Pacific Gas and Electric Company. The adopted framework contains eight (8) primary elements, including: (1) a 10-year historical lookback analysis; (2) greenhouse gas emissions performance standards; (3) clean technology market development standards; (4) an alternatives analysis; (5) a procurement strategy; (6) a rate architecture and cost allocation methodology; (7) demand response measures; and (8) environmental and social justice action.

The framework adopted here is in the public interest and sets forth parameters for spurring development in clean resiliency technologies to mitigate and ultimately reduce greenhouse gas emissions during public safety power shutoffs. This decision facilitates another resiliency strategy for Pacific Gas and

Electric Company customers to minimize the number of ratepayers affected by public safety power shutoff outages. The adopted framework supports keeping the lights on to preserve community continuity - one of the Commission's ongoing priority objectives to protect the public health, welfare, and safety of all Californians.

15. Comments on Proposed Decision

The proposed decision of Administrative Law Judge Colin Rizzo in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on October 19, 2022 by: (1) California Energy Storage Alliance (CESA); (2) Pacific Gas and Electric Company (PG&E); (3) Public Advocates Office (Cal Advocates); (4) Redwood Coast Energy Authority, Marin Clean Energy, Sonoma Clean Power (Joint CCAs); (5) Small Business Utility Advocates (SBUA); and (6) The Utility Reform Network (TURN). Reply comments were filed on October 24, 2022 by: (1) Cal Advocates; (2) CESA; (3) Peterson Power Systems, Inc; (4) PG&E.

We have carefully considered the suggested changes proposed by parties in their comments and their reply comments to this Decision. The suggested changes that we have accepted are reflected in the revised version of this decision. However, we take a moment to directly address some suggested changes by some parties, below.

Cal Advocates offers three primary recommendations for the final version of this Decision. First, Cal Advocates recommends that we modify the final decision so that data from years 2011 to 2016 in the Historical Lookback Analysis are not included. We decline to adopt this recommendation. Second, Cal Advocates recommends that we clarify which fuel emissions should be

calculated using a pathway-specific methodology and provide those requirements in our orders. We agree. These changes are reflected in the revised version of this decision. Finally, Cal Advocates recommends that we clarify that multi-season substation microgrids can operate with reduced emissions compared to the current grid. We agree. These changes are reflected in the revised version of this decision. CESA and SBUA also offered several recommendations that we decline to adopt.

PG&E offers an array of recommendations some of which we adopt, and others we decline to adopt. First, PG&E recommends that we allow multi-season substation microgrid solutions meeting certain criteria to be reviewed and approved by advice letter. For the reasons stated in the body of this Decision, we decline to adopt this recommendation. Second, we adopt some of PG&E's proposed ratemaking features. We agree with PG&E that it is reasonable for PG&E to record costs for third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services through a two-way balancing account. This will be subject to the Commission's review of contract administration in PG&E's General Rate Case, or through a new Application. We also find that it is reasonable for PG&E to create a new two-way sub-account within its existing MGBA for costs related to third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services. While in theory, we agree with Cal Advocates that a one-way balancing account "keeps costs under control,"²²³ in this instance, the inherent variability of PSPS events and their duration will differ from assumptions used to forecast the cost that PG&E may bear under a

third-party Distributed Generation Enabled Microgrid Service contract to mitigate these outages.

Additionally, the structure of this type of third-party contract includes variable costs that depend on the number and duration of outages that occur at the given substation. The costs incurred by PG&E in any given year under a third-party Distributed Generation Enabled Microgrid Service contract is likely to be different than the costs of it reasonably forecast at the time of the proposing solution. Thus, the use of a one-way (capped) balancing account is suboptimal given the variability. In other words, if we adopted a one-way balancing account, the third-party contract would price in the risk of variability that could, in effect, raise the cost of the third-party contract. This is precisely the outcome the parties seek to avoid. It is more reasonable to avoid this outcome by authorizing a two-way balancing account for multi-season third-party Distributed Generation-Enabled Microgrid Service contracts, while controlling the costs at the following points of oversight: (1) PG&E's General Rate case; or (2) a new, separate Application. Next, PG&E requests that we grant it the authority to combine air emission reporting requirements if the prior requirements are retained. We agree. This change is reflected in the revised version of this decision. PG&E also recommends that it should be able to seek review of single-season solution costs through the Commission's Application process as well as through its General Rate Case. We agree.

PG&E also recommends that we grant it the authority to submit changes to the framework adopted by this Decision through a Tier 3 Advice Letter. For the reasons stated in the body of this Decision relating to the use of Advice Letters, we decline to adopt this recommendation. Finally, PG&E offered

recommendations for inadvertent typographical errors in the proposed decision. These changes are reflected in the final revised version of this decision.

Peterson Power Systems, Inc. opposes limiting the use of single-season microgrid solutions because “California should not unnecessarily box itself with arbitrary limits for mitigating the sometimes severe consequences of a [public safety power shutoff] event over the next few years. We agree.

The Joint CCAs offer several recommendations and ask us to clarify that the framework adopted by this decision will not impact a customer’s choice of, or experience with, their load serving entity. While we decline many of the Joint CCAs recommendations, we clarify that the framework adopted by this decision does not impact a customer’s choice of, or experience with, their load serving entity.

Finally, TURN offered the following recommendations: (1) PG&E should be required to track and report actual emissions during both public safety power shutoffs events and outside of public safety power shutoff events over the course of the year; (2) PG&E, when using the wildfire cost allocator approved in Decision 21-11-016, PG&E must ensure that the cost are both nonbypassable and equitably allocated amongst customer classes in future PG&E’s General Rate Case cycles; and (3) PG&E, when seeking approval of any multi-season microgrid resource in an application, must forecast and quantify the expected annual operations and emissions from the project. We agree with TURN’s recommendations. These changes are reflected in the final revised version of this decision.

16. Assignment of Proceeding

Genevieve Shiroma is the assigned Commissioner and Colin Rizzo is the assigned ALJ in this proceeding.

Findings of Fact

1. The California Public Utilities Commission issued D.21-01-018 that, among other holdings, adopted an interim framework for California's electric investor-owned utilities to follow for reserving temporary generation for safe-to-energize substations.

2. D.21-01-018 requires that if a large electrical corporation would like to continue to reserve single-season, temporary generation for safe-to-energize substations, the electrical corporation would have to file an application with the Commission providing a longer-term framework for evaluating public safety power shutoff (PSPS) mitigation alternatives and include a pathway toward transitioning to cleaner sources of generation for microgrids.

3. The 10-year Historical Look Back Analysis (HLA) identifies and prioritizes PG&E substations that are highest risk for future transmission level PSPS.

4. The 10-year HLA provides an adequate statistical picture of future PG&E PSPS events, with which to predict the variability inherent in climate and atmospheric conditions from year to year.

5. The 10-year HLA models the need and scope of future transmission level PG&E PSPS events using historic weather and environmental data.

6. The 10-year HLA uses a threshold of 10 or more predicted PG&E transmission-level PSPS events with 100 or more safe-to-energize PG&E customers as a method for selecting a substation microgrid.

7. The substation candidate selection framework adopted in this Decision prioritizes substations that serve a high number of medical baseline customers.

8. The 10-year HLA considers future PG&E grid needs as well as future weather and environmental patterns, to the extent possible.

9. The GHG emissions standard for a future PG&E multi-season substation microgrid will be fully renewable in its completed phase, relying on the California Energy Commission's definition for what qualifies as renewable.

10. PG&E will track GHG emissions for single-season microgrid solutions and report the actual emissions of multi-season microgrids compared to forecasts to the Commission's Energy Division in a yearly compliance report.

11. The GHG emission standard prioritizes Tier 4 generators for single-season use and the use of biodiesel fuel, or other cleaner fuels, to the extent they are available.

12. The GHG emission standard calculates the carbon intensity to account for the fuel use and dispatch characteristics needed to serve the actual load shape at a given substation, rather than assuming full power operation for the entire PSPS event.

13. The transition to clean, backup generation requires PG&E to leverage near, mid, and long-term opportunities in the market.

14. The transition to clean, backup generation requires PG&E to expand the technology development and operationalization of resources that reduce reliance on diesel generation.

15. The transition to clean, backup generation requires PG&E to leverage the State of California's policy objectives for obtaining cost-effective and feasible diesel-alternative technologies.

16. The transition to clean, backup generation requires PG&E to assess market opportunity, and where appropriate, support market growth.

17. The transition to clean, backup generation holds PG&E accountable by tracking and reporting its progress for clean, backup generation deployment.

18. An alternatives analysis holds PG&E accountable to ensure that PG&E is weighing whether committed and planned grid investment projects already identified in other Commission proceedings have a reasonable degree of certainty that they will be carried out and have a material impact on PSPS and therefore, negate the need for a microgrid.

19. An alternatives analysis holds PG&E accountable to ensure that there is coordination between its broader wildfire mitigation efforts and its procurement of a microgrid substation.

20. An alternatives analysis requires PG&E to account for wildfire mitigation costs incurred in the previous five years and a forecast for the subsequent five years on relevant transmission lines.

21. An alternatives analysis allows the public to assess the expenditures ratepayers are expected to incur, the potential for any avoided wildfire mitigation costs, and the incremental benefits of the proposed microgrid.

22. Procurement of a single-season and multi-season resource includes a transparent procurement process that offers the lowest-cost, but highest benefits, to PG&E ratepayers.

23. Procurement of PG&E utility-owned generation will be approved only if it is less expensive than a viable third-party alternative.

24. Procurement assessment of a resource includes blue-sky product evaluation.

25. Procurement of a multi-season resource triggers PG&E to consult with impacted community choice aggregators.

26. PG&E will seek approval for most of its new rates through an application, and not through the advice letter process.

27. The advice letter process is more appropriate for a simplified review of a utility request while an application is the proper approval mechanism for complex policy questions and rate design.

28. When pursuing a clean microgrid substation, PG&E will integrate the Commission's Environmental and Social Justice Action Plan into its project development.

Conclusions of Law

1. It is reasonable to adopt a clean microgrid substation framework for PG&E that has the following elements: (a) a 10-year historical lookback analysis; (b) GHG emissions performance standards; (c) clean technology market development; (d) an alternatives analysis; (e) a procurement strategy; (f) a rate design and cost allocation methodology; (g) demand response; and (h) an environmental and social justice action plan.

2. It is reasonable to require PG&E to use a 10-year HLA to identify and prioritize PG&E substations that are highest risk for PSPS.

3. It is reasonable to require PG&E to use a 10-year HLA to provide an adequate statistical picture of future PSPS events, with predictive modeling that captures the variability inherent in climate and atmospheric conditions from year to year.

4. It is reasonable to require PG&E to use a 10-year HLA to model the need and scope of future transmission-level PSPS events using historic weather, environmental data, as well as future weather patterns to the extent possible.

5. It is reasonable to require PG&E to use a 10-year HLA that has a threshold of 10 or more predicted transmission level PSPS events with 100 or more safe-to-energize customers as a method for selecting a substation for a substation microgrid.

6. It is reasonable to require PG&E to prioritize medical baseline customers who are served by substations identified in its 10-year HLA analysis.

7. It is reasonable to require PG&E to consider future grid needs as well as future weather and environmental patterns, to the extent possible, as part of its 10-year HLA analysis.

8. It is reasonable to require PG&E to continue to utilize the GHG emissions standards adopted in D.21-01-018.

9. It is reasonable to require a GHG emissions standard for PG&E multi-season substation microgrids to be fully renewable in their completed phase, relying on the California Energy Commission's definition for what qualifies as renewable.

10. It is reasonable to require a GHG emissions standard for PG&E to track the actual emissions of a multi-season microgrid, compared to its forecasts.

11. It is reasonable to require PG&E to track and report actual emissions by each microgrid unit during both PSPS events and outside PSPS events over the course of the year, and submit the results, in a yearly compliance filing to the Commission's Energy Division.

12. It is reasonable to require PG&E, when seeking approval of any multi-season microgrid resource in an application, to forecast and quantify the expected annual operations and emissions from the project.

13. It is reasonable to require PG&E to calculate emissions from fuels based on the fuel-specific Low Carbon Fuel Standard emissions pathway, rather than averages.

14. It is reasonable to require a GHG emission standard for PG&E that prioritizes Tier 4 generators for single-season use and the use of biodiesel fuel, or other cleaner fuels, to the extent they are available.

15. It is reasonable to require a GHG emission standard for PG&E that calculates carbon intensity to account for the fuel use and dispatch characteristics needed to serve the actual load shape at a given substation, rather than assuming full power operation for the entire PSPS event.

16. It is reasonable to require PG&E to transition to clean, backup generation by conducting a baseline assessment of the short- and long-term market.

17. It is reasonable to require PG&E to leverage near, mid, and long-term opportunities in the marketplace as part of its transition to clean, backup generation.

18. It is reasonable to require PG&E to expand technology development and operationalization of resources that reduce reliance on diesel generation as part of its transition to clean, backup generation.

19. It is reasonable to require PG&E to leverage the State of California's policy objectives for obtaining cost-effective and feasible diesel-alternative technologies, as part of its transition to clean, backup generation.

20. It is reasonable to require PG&E to assess market opportunity, and where appropriate, support market growth, as part of its transition to clean, backup generation.

21. It is reasonable to require PG&E to track and report its progress for clean, backup generation deployment.

22. It is reasonable to require PG&E to conduct an alternatives analysis to ensure that PG&E is weighing whether committed and planned grid investment projects already identified in other Commission proceedings have a reasonable degree of certainty that they will be carried out, and have a material impact on PSPS and therefore, negate the need for a microgrid.

23. It is reasonable to require PG&E to assess its grid-based mitigation solutions as well as its generation-based solutions as part of its alternatives analysis for a microgrid substation.

24. It is reasonable to require PG&E to conduct an alternatives analysis to ensure that there is coordination between its broader wildfire mitigation efforts and its procurement of a microgrid substation.

25. It is reasonable to require PG&E to account for wildfire mitigation costs incurred in the previous five years and a forecast for the subsequent five years on relevant transmission lines as part of its alternatives analysis.

26. It is reasonable to require PG&E to conduct an alternatives analysis so the public can assess the expenditures ratepayers are expected to incur, the potential for any avoided wildfire mitigation costs, and the incremental benefits of the proposed microgrid.

27. It is reasonable to require PG&E to procure single-season and/or multi-season resources through a transparent procurement process that offers the lowest cost, but highest benefits to PG&E ratepayers.

28. It is reasonable to require PG&E to only procure utility-owned generation if it is less expensive than a viable third-party alternative.

29. It is reasonable to require PG&E to evaluate the value of blue-sky products as part of its procurement assessment.

30. It is reasonable to require PG&E, when procuring a multi-season resource, to consult with impacted community choice aggregators.

31. It is reasonable for PG&E to seek approval for most of its new multi-season microgrid projects through an application, rather than the advice letter process.

32. It is reasonable for PG&E to seek approval for a single-season microgrid solution through a Tier 2 Advice Letter to preserve community continuity.

33. It is reasonable for PG&E to record costs for make-ready utility investments and/or utility owned-owned generation through a one-way balancing account.

34. It is reasonable for PG&E to create a new one-way sub-account within its existing Microgrids Balancing Account for costs related to make-ready utility investments for multi-season substation microgrid solutions.

35. It is reasonable for PG&E to create a new one-way sub-account within its existing Microgrids Balancing Account for costs related to utility-owned generation that is part of a multi-season microgrid solution.

36. It is reasonable for PG&E to record costs for third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services through a two-way balancing account, subject to the Commission's review of contract administration in PG&E's General Rate Case, or if presented earlier by PG&E, in an appropriate Application.

37. It is reasonable for PG&E to create a new two-way sub-account within its existing Microgrids Balancing Account for costs related to third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services.

38. It is reasonable for PG&E to continue to record the costs related to single-season, temporary generators in its existing Microgrids Memorandum Account, pursuant to D.20-06-017.

39. It is reasonable for PG&E to use the wildfire cost allocator approved in D.21-11-016, for cost recovery purposes, for multi-season, permanent substation microgrids and ensure that the costs are both reasonable and equitably allocated amongst customer classes in future PG&E's General Rate Case cycles.

40. It is reasonable to require PG&E to use its Demand Response programs, such as the BIP and Smart AC, as part of its PSPS mitigation strategy, when Demand Response is reasonable to deploy.

41. It is reasonable to require PG&E, when pursuing a clean microgrid substation, to include an update on its undergrounding of distribution lines.

42. It is reasonable to require PG&E, when pursuing a clean microgrid substation, to integrate the Commission's ESJ Action Plan into its project development.

O R D E R

IT IS ORDERED that:

1. Pacific Gas and Electric Company shall file the relevant results from each new iteration of its 10-year Historical Lookback Analysis, when reasonably available, via Compliance Filing with the Energy Division.

2. Upon issuance of this decision, and when the use of a single-season substation microgrid solution is reasonable, Pacific Gas and Electric Company (PG&E) shall submit a Tier 2 Advice Letter that details: (a) the Historical Lookback Analysis results indicating a microgrid is reasonable; (b) either that the need is short-term or that PG&E is pursuing a multi-season microgrid as a replacement; (c) the protocol for soliciting and evaluating bids; (d) the evaluation of offers for single-season resource(s), detailing how it conforms to the request for offer eligibility and safety requirements; (e) how the single-season resource(s) satisfy the technical and operational requirements of the substations they will serve, which may differ for particular substations; (f) efforts that were made to prioritize Tier 4 generators and the use of biodiesel, or other cleaner fuels, to the extent that they are available; and (g) submittal of the executed contract and associated cost forecasts for review.

3. Pacific Gas and Electric Company shall prioritize Tier 4 generators for single-season use and the use of biodiesel, or other cleaner fuels, to the extent that they are available.

4. Pacific Gas and Electric Company shall track and report actual emissions by each single-season, substation-level temporary generation unit, and submit the results of this reporting in a yearly compliance filing to the Commission's Energy Division. This filing may be combined with any other air emissions-related compliance filing related to the same microgrids.

5. Upon issuance of this Decision, and when the use of a multi-season microgrid is reasonable, Pacific Gas and Electric Company (PG&E) shall file an application seeking Commission review and Commission authorization for a multi-season clean microgrid substation project(s) that:

- Analyzes each project through the 10-year Historical Lookback Analysis, adopted by this decision, by applying prioritization criteria to select a list of the most at-risk substations for transmission-level public safety power shutoffs that should be candidates for multi-season clean microgrid substations, and then further prioritizes projects that serve medical baseline customers, and considers future weather patterns to the extent practicable;
- Applies the emissions standards adopted by this decision, where generation contracted for a multi-season project: (1) reduces particulate matter and nitrogen oxide emissions when compared to a Tier 2 diesel engine by at least 90 percent; (2) operates with grid-equivalent, or lower greenhouse gas emissions; (3) calculates emissions from fuels based on fuel-specific Low Carbon Fuel Standard emission pathways; (4) operates on fully renewable generation in their final stage, that; (5) complies with the California Energy Commission's definitions for what qualifies as renewable; and (6) calculates carbon intensity to account for fuel use and dispatch characteristics needed

to serve the actual load shape at a given substation rather than assuming full power operation for the entire event.

- Discusses how the project(s) facilitates a transition to clean, backup power generation by: (1) assessing market opportunities; (2) expanding technology development and operationalizing resources that reduce the use of diesel; (3) supporting market innovation; and (4) accounting for progress toward the scaling of clean, backup power generation.
- Presents, for the project(s) that support substations directly impacted by Public Safety Power Shutoffs, an alternatives analysis that considers existing, planned, and potential future alternative mitigations including: (1) planned grid investments; (2) need for duration PSPS mitigation; and (3) not-yet-planned alternatives to substation microgrids.
- Discusses the procurement of the multi-season project which shall include: (1) the process to solicit the necessary substation microgrid solution; (2) the evaluation for producing a shortlist of offers for negotiations, that will be consistent with the procurement goals set forth in the request for offers, including the parameters relating back to a single season and multi-season request for offer; (3) request for cost recovery; (4) blue-sky product value; and (5) outreach to impacted community choice aggregators.
- Procurement may include utility-owned generation only if: (1) it is less expensive than viable, third-party power purchase agreement offers. This demonstration shall include all costs to ratepayers (*i.e.*, financing costs) along with forecast capital investments, capital additions, and operations and maintenance expenses; and (2) discusses long-term forecasts of capital and operations and maintenance expenditures for any utility-owned generation project. These forecasts shall include the costs incorporated into PG&E's request for offer evaluation of the utility owned generation project. If PG&E chooses to request additional cost recovery beyond the initial

forecasts, it must clearly state the reasons for the additional cost-recovery beyond these initial forecasts.

- Discusses how the multi-season project is coordinated with its broader, wildfire mitigation efforts, including its efforts to underground 10,000 miles of overhead electrical lines, and an accounting of wildfire mitigation costs incurred in the previous five years and a forecast for the subsequent five years on relevant transmission lines.
- Discusses how the multi-season project advances the Commission's environmental and social justice communities, including the extent that the multi-season project(s) achieve any of the nine Environmental and Social Justice Action Plan goals.

6. Pacific Gas and Electric Company (PG&E) shall track and record the costs related to single-season, temporary generators in its existing Microgrids Memorandum Account, pursuant to Decision 20-06-017. The costs recorded in the Microgrids Memorandum Account for single-season, temporary generators shall be subject to review either in PG&E's next general rate case or another application.

7. Pacific Gas and Electric Company shall use the wildfire cost allocator approved in Decision 21-11-016 for multi-season, permanent substation microgrids for cost recovery purposes and ensure that the costs are both nonbypassable and equitably allocated amongst customer classes in future PG&E General Rate Case Cycles..

8. Pacific Gas and Electric Company shall create new one-way sub-accounts within its existing Microgrids Balancing Account for costs related to make-ready utility investments for multi-season substation microgrid solutions, and for utility owned generation associated with multi-season substation microgrid solutions, respectively.

9. Pacific Gas and Electric Company shall create a new two-way sub-account within its existing Microgrids Balancing Account for costs related to third-party contracts for multi-season Distributed Generation-Enabled Microgrid Services.

10. Pacific Gas and Electric Company shall seek review of its administration of approved third-party contracts for multi-season Distributed Generation Enabled Microgrid Services in its General Rate Case, or if presented earlier by it, in an appropriate Application.

11. Pacific Gas and Electric Company shall submit, no later than September 1, 2023, an application that addresses indirect Public Safety Power Shutoffs impacts with illustrative site examples, including resiliency initiatives underway on California's North Coast.

12. Pacific Gas and Electric Company shall, when demand response is reasonable to deploy, use the Base Interruptible Program and Smart AC program for use as part of its Public Safety Power Shutoff mitigation.

13. The Public Advocates Office's Motion to Dismiss the Application of Pacific Gas and Electric Company, Application 21-06-022, is denied.

14. Application 21-06-022 is closed.

This order is effective today.

Dated November 3, 2022, at Chico, California.

ALICE REYNOLDS

President

CLIFFORD RECHTSCHAFFEN

GENEVIEVE SHIROMA

DARCIE L. HOUCK

JOHN REYNOLDS

Commissioners