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**PG&E Comments on the Staff Workshop Regarding Research on
Valuation of Investments in Electricity Sector Resilience**

Additional submitted attachment is included below.



Licha Lopez
CEC Liaison
State Agency Relations

1415 L Street, Suite 280
Sacramento, CA 95814
(202)903 4533
Elizabeth.LopezGonzalez@pge.com

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California Energy Commission
Docket Number 19-ERDD-01
715 P Street
Sacramento, CA 95814

Re: Pacific Gas and Electric Company Comments on the Staff Workshop Regarding Research on Valuation of Investments in Electricity Sector Resilience (Docket Number 19-ERDD-01)

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide feedback on the proposed solicitation that responds to the Electric Program Investment Charge (EPIC) interim investment plan initiative on valuation of electricity sector resilience. This effort is an important step in understanding the role resiliency of the electric grid plays and the importance of continued investments in the safety, reliability, and resiliency of the future of the electric grid across California.

PG&E supports the development of methods for the valuation of the social benefits (including economic, public health, and other societal benefits) of customer and grid resilience investments, such as microgrids, distributed generation, and storage. PG&E believes that a valuation of these investments and benefits will provide regulators, customers, and policymakers a context of how these benefits compare to other investments.

PG&E believes that research on the value of the electric sector resiliency and the corresponding impacts on resiliency for disadvantaged and vulnerable communities (DVCs) should consider the broader efforts of electric grid reliability in the context of existing efforts by both the California Public Utility Commission (CPUC) and utility company programs, such as:

1. Wildfire Mitigation Plans (WMPs)
2. Access and Functional Needs (AFN) Plan¹
3. Microgrid Incentive Program
4. Climate Vulnerability Assessment (CVA)²

¹ CPUC Issues Additional Guidelines and Rules in Continual Improvements to Utility Execution of Public Safety Power Shutoffs, [389401938.pdf \(ca.gov\)](https://www.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K285/346285534.PDF)

² PG&E is undertaking a service-territory wide assessment of the vulnerability of the company's assets, operations & services to climate change and is engaging with DVCs about the expected impacts to those communities in developing mitigation measures. CPUC OIR Decision 20-08-046 – Climate Adaption in Disadvantaged Communities. <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K285/346285534.PDF>

PG&E requests the CEC clarify the timing of this research, its scope and how the research will be used. For example, how would a valuation of resiliency for DVCs and other customers will be considered across the company's other investments and programs, such as the 2023-2024 Wildfire Management Program (WMP).

PG&E also suggests that the research is scoped and completed in a way that considers the dual needs of the overall resiliency of the electric grid, and the investments needed to ensure safe and reliable service to all customers, while also considering the direct value of resiliency for the local communities that have perhaps been underfunded and potentially experienced disproportionate impact from past outages. Additionally, investments in electric sector resiliency should consider both the current and future conditions to ensure that investments from utility companies are prioritized in a responsible manner for all ratepayers.

The seven questions that the California Energy Commission (CEC) is seeking direct feedback on are a key step in a comprehensive review of the core issues that this research objective should consider. PG&E would also recommend that in a broader context the research to understand the benefits of direct resiliency investments and the impacts to DVCs also include the following guiding considerations:

- Consideration of the current and projected transformation of the electric grid, with increased use of electric vehicles, battery storage, distributed generation, and ongoing grid hardening and safety investments. This can be done by considering what the future of the electric grid will look like, a balance between current community needs for resiliency solutions and the longer-term investment plans that utilities are undertaking to prepare the electric grid for tomorrow, including investments in grid hardening and undergrounding.
- PG&E believes that resilience methodologies should incorporate guidance for both a threshold when investment is needed in targeted resiliency solutions for communities as well as considerations on the funding mechanisms and responsibilities for the cost of deploying any targeted resiliency solutions. PG&E's first obligation to its customers and communities is to provide safe, reliable, and affordable energy. Resiliency investments need to balance the need to provide affordable energy to all customers, particularly those in disadvantaged and vulnerable communities.
- PG&E understands that electric sector resiliency will require unprecedented investments from utility companies, local communities, governments, and other organizations. Research into the value of electric sector resilience, and the directed effort to understand these issues within DVCs, would benefit from seeking to understand how a resiliency valuation framework can be coordinated with funding opportunities and investor requirements. Several considerations to include would be:
 - State and local funding: What state and local funds have already been authorized for resiliency? Are there coordination mechanisms between state and local funds?

- Federal funding: What are the opportunities that can be leveraged for funding resiliency adaptations?
- Investors: What are the different frameworks that investors are using for assessing climate risk when investing?

Ultimately, PG&E believes that this research should help identify coordination opportunities between electric sector resiliency investments and other resiliency driven infrastructure investments. One area of overlap to consider would be how targeted electric sector resiliency investments could be supported by, or supportive of, regional climate adaptation planning efforts.

During the workshop that the CEC hosted on Friday November 5, 2021, the CEC requested stakeholder feedback on a set of questions. PG&E participated in the discussion during that session and provided several high-level comments on the direction of these research efforts. PG&E would also offer the following responses to the specific questions outlined by the CEC:

- 1- What research approaches are needed to measure societal impacts and benefits of energy resilience, with a particular focus on Disadvantaged Vulnerable Communities (DVC)?
 - Supporting disadvantaged communities: The CPUC designation for DVCs highlights that these communities suffer most from a combination of economic, health and environmental benefits. The CPUC was called upon by the Legislature to help improve air quality and economic conditions of these communities.³ As a CPUC regulated entity, PG&E strongly supports and is committed to implementing the CPUC's efforts and would seek to use this research opportunity to further engage with DVCs across the company's service territories.
 - Coordination of existing efforts: The CPUC⁴ and the investor-owned utilities (IOUs) have existing efforts with which this effort would need to be coordinated. Local communities also have existing efforts. The research should support and align with these efforts.
 - Temporal impacts on DVCs from different lengths of electrical outages: PG&E understands that our customers and communities that experience planned and unplanned outages have a different ability to cope with these events. PG&E recommends research approaches on the value of electric sector resiliency that consider a broad cross sector of DVC customers and seek to understand different levels of adaptability and impacts from different lengths of electric outages.

³ CPUC's Press Release: CPUC Reaffirms Commitment to Disadvantaged Vulnerable Communities on Climate Change Adaptation Planning.

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M345/K822/345822425.PDF>

⁴ CPUC, Disadvantaged Communities, <https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/disadvantaged-communities>

- Local knowledge that enables communities to address their unique challenges: DVCs are communities where our PG&E customers, employees, nonemployees, contractors, and people from many of our hometowns live and work. Like every community, DVC's are diverse and each have their own vibrancy. The valuation methodology will determine metrics and a framework to help allocate resources.

This research effort should also include methodologies for how this funding can be allocated, and ensure that the funding is provided in a way to enable local communities to address the unique challenges that they face.

- Prioritization of DVCs' actions and plans that enable them to respond to immediate impacts from climate change: The effects of climate change have impacted all communities today. The research should identify and prioritize actions that have immediate impacts on DVCs. For example, during the workshop, stakeholders commented that some DVCs have action plans, and some do not. For those that do have action plans, how can the research leverage these plans and drive plans towards action? For DVCs that do not have action plans, can the research provide immediate support in developing these plans?

2- What type of skills, competencies and expertise should the research team demonstrate for research that prioritizes DVCs?

PG&E provided feedback during the workshop on this topic. While we believe there is a value in direct survey of customers' views on this topic to ensure an accurate representation of the value of electric sector resiliency, it would be highly beneficial to also consider direct and indirect economic modelling of the costs and the lost economic value that results when customers lose electric service.

PG&E understands that community resilience is a shared responsibility and notes that focusing on communities that need additional support does not inherently suggest that these communities are prioritized over other communities. California is a prosperous state and all communities benefit from ensuring that all communities share in that prosperity. For example, impact investors are mobilizing to help the global population adapt to climate change. How can the work in California be done in a way that ensures that new models for technology development and deployment complement these investors' efforts?

3- Which existing frameworks or metrics for valuation of resilience should be considered for this research?

PG&E recommends a framework and metrics for the value of electric sector resilience that considers the tradeoffs between targeted resiliency solutions for specific communities and the investments required to build a more resilient electric grid that will meet changes in both the climate and of customers' electric usage patterns. Additionally, the framework should include how the relationship between customers and the electric service are expected to change,

including increased electric vehicle usage, building electrification, distributed generation, and the increased penetration of battery storage.

- 4- Please provide feedback on the following: which of the following should be included in the scope of the research?
- a. Past historical weather-related events
 - b. Establishing the data to be collected
 - c. Analyzing data during the project's timeframe
 - d. Combination of the aforementioned factors
 - e. What data should be collected?
 - f. What types of metrics should be established?

Given the complicated nature of this research effort, PG&E recommends that the CEC take a phased approach, outlined below:

- Phase one: This phase should focus on a survey of the landscape of existing research, regulatory decisions, and policy decisions related to electric sector resilience. This phase should include the identification of strengths, weaknesses and gaps of prior research efforts and develop a recommended research approach to be presented at a public education workshop for feedback and input.
- Phase two: This phase should be based upon the results of phase one and the public feedback, then determine the optimal research plan. This plan would include a summary of the type of data to be collected, the methods of this collection, a framework for understanding the costs and benefits of different resiliency investments and a summary of the types of analysis that will be performed.
- Phase three: This phase should implement the plan identified in Phase two.

- 5- What aspects of resilience should this research focus on?

PG&E recommends that the CEC take a broad view of electric sector resiliency to account for the community's ability to cope with emergency events and outages and not focus solely on one aspect of resiliency for customers. The electric system is one aspect of community vitality. Enhancements in the electric system can not only improve the reliability of local communities (resiliency of the grid), but reliable electric systems can enable electrification of buildings, transportation and industry as well as enabling community resiliency efforts, such as cooling centers or youth sports facilities (resiliency through the grid).

- 6- What research is needed to guide efforts to identify and provide resilience for critical services in under-resourced communities?

Resiliency of the electric grid is one part of a community's overall ability to cope with unexpected events, hazardous weather, or other disasters that may negatively impact DVCs and other customers. As such, having a research team and partners that understand local communities' adaptability, their existing disaster preparedness plans, and how the loss of electric service impacts these communities is fundamental. PG&E supports efforts to better

understand how DVCs and other communities could leverage existing emergency services in providing increased resiliency. PG&E has also supported the development of these efforts through past efforts, such as the Building Together Resilient Communities Grant Program.⁵

PG&E appreciates the time and effort that the CEC invested to organize the workshop, and the opportunity to provide feedback on the questions. Please do not hesitate to contact me if you have any questions.

Sincerely,

Licha Lopez

⁵ Building Local Climate Resilience, https://www.pge.com/en_US/residential/in-your-community/local-environment/resilient-communities/resilient-communities-grant-program.page