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PG&E Comments DER Strategies for MDHD BEV Infrastructure

Additional submitted attachment is included below.

Pacific Gas and Electric Company

Jessica M Melton
Representative
State Agency Relations

1415 L Street, Suite 280
Sacramento, CA 95814
O: (916) 386-5712
M: (916) 386-5720
Jessica.Melton@pge.com

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California Energy Commission
Docket Unit, MS-4
Re: Docket No. 19-ERDD-01
1516 Ninth Street
Sacramento, CA 95814-5512

Re: Pacific Gas and Electric Company Comments in Response to the California Energy Commission's Request for Comments on Grant Funding Opportunity Concept

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide feedback informing the California Energy Commission (CEC) on the proposed Grant Funding Opportunity. PG&E strongly supports research which explores various use cases, including use of Distributed Energy Resource (DER) technologies and strategies to improve and incent adoption and integration of medium-duty heavy-duty (MDHD) battery electric vehicles (BEV). We agree that foundational, replicable strategies to solve potential electric distribution infrastructure capacity constraints consistent with existing DER distribution deferral projects and pilots already undertaken by electric utilities under the guidance of the California Public Utilities Commission and the governing bodies of local publicly-owned electric utilities may be beneficial for all stakeholders.

PG&E provides the following comments structured to address the questions outlined in the GFO announcement:

1. **Of the candidate use-cases and vehicle types listed in the GFO announcement, which ones should we prioritize in this solicitation and why?**
   - Use-cases should be focused on vehicle types (or fleets of vehicles) that have concentrated loads, the magnitude of which could require long-lead and costly distribution system upgrades (specifically primary and substation upgrades).
   - To ensure policy alignment, avoid duplication of effort and funding, and drive consistent statewide progress, the use-cases selected for solicitation should be consistent with the use-cases and pilot projects already mandated by the California Public Utilities Commission (CPUC) and implemented by PG&E and other investor-owned utilities under the CPUC's Distribution Resource Plan (DRP) and Integrated Distributed Energy Resource (IDER) proceedings. Under the CPUC's guidance, the IOUs have already initiated and implemented numerous solicitations of DER distribution deferral projects based on CPUC-approved criteria, including annual Grid Needs Assessments (GNAs) and Distribution Deferral

Opportunity Reports (DDORs) that identify loads and capacity constraints that have the potential to be deferred or mitigated by DERs, including those associated with electric vehicle charging loads and infrastructure needs.

- In addition, use-cases should be consistent with those prioritized by the CPUC Vehicle Grid Integration (VGI) Working Group (WG). Preliminary results from the VGI WG[1] point towards the transit sector as one that is potentially suitable. Investigating the use-cases associated with this sector might be valuable.
- The use cases developed under this GFO will need to be coordinated with IOU and publicly-owned utility distribution capacity plans and infrastructure investments, in order to ensure feasible and non-duplicative projects.
- In addition to load management, we recommend that at least one project implement bi-directional charging and vehicle-to-building (V2B) solutions.
- PG&E also recommends encouraging and prioritizing proposals that involve collaboration by multiple stakeholders.

2. What is the best way to characterize the grid impacts and other costs associated with deploying MDHD BEV charging infrastructure without a managed charging/DER strategy?

- Absent managed charging and a coherent DER strategy, characterizing grid impacts and other costs associated with deploying MDHD BEV would assume:
    - Unmanaged charging, shaped primarily by dwelling cycle (charging schedule) and mobility needs
    - Average cost and time needed for grid infrastructure upgrades (primary and secondary, as relevant)
- The CEC should be consistent with the metrics developed and approved by the CPUC in its DRP and IDER proceedings, and applied by the CPUC to the review of IOU DER distribution deferral projects. In addition, the metrics currently under consideration by the CEC including site and utility costs, carbon intensity, cost of delays, and risks seem reasonable to characterize grid impacts and costs, both without managed charging / DER strategy (reference case) as well as with managed charging / DER strategy (optimized case). In addition, the CEC may want to consider the following metrics:
    - *Performance metrics:* To avoid the need for distribution upgrades, the DERs must demonstrate robust and guaranteed ability to avoid overloading the secondary and primary distribution system under various operating conditions.
    - *Additional benefits*: Secondary use of the supporting DER technology (e.g., wholesale market participation) could also be considered. Also, consistent with the distinction made in the VGI WG, it would be important to distinguish between the “value to the participant” and the value to the “overall system/society”.
    - Since MDHD BEV fleets are new, data on load profile of these fleets is limited. For any optimization related projects, a baseline period should be considered to monitor the load profile of fleets before any optimization components are implemented.

[1] Vehicle-grid Integration Working Group Preliminary Results available here: https://gridworks.org/initiatives/vehicle-grid-integrationwg/

- The impact of time of use (TOU) rates as a form of load management / smart charging, and their relevance to specific DERs, should be addressed in the investigated use-cases.

3. **How does the target technology need to improve?**
    - To avoid the need for distribution upgrades, the DERs should meet the performance criteria adopted by the CPUC and used by the IOUs in their DER distribution deferral projects under the CPUC DRP and IDER decisions.

4. **What level of investment would be needed from EPIC to make a meaningful difference on this issue?**
    - Subject to further analysis and coordination with other existing ratepayer funding of DER distribution deferral projects, the $16 million award could be a reasonable amount of funding. However, we recommend that the GFO funding be coordinated with existing IOU and POU DER distribution deferral projects and funding to ensure efficient use and avoid duplication of efforts.

In addition to the questions above, PG&E recommends that projects should reflect the diversity of MDHD BEV markets in terms of economics, policy, customer behavior, fleet composition and location. For example, while private enterprises are typically reliant on mid-term real estate leases, public agency locations rarely move. As a result, public agency charging locations may be more stable. To the extent possible, projects should also be representative of real market trends and reflective of electrification efforts undergoing in each sector. In other words, projects should not be solely selected based on distribution capacity constraints (or lack thereof), but also based on the maturity of electrification efforts across the various medium- and heavy-duty sectors.

Thank you for the opportunity to comment on this GFO. PG&E looks forward to continued involvement in this process.

Sincerely,

/s/

Jessica M Melton